INDEX OF CONSTRUCTION
PRODUCTS SYSTEMS

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Pigmented water-based stain designed to lock into concrete & masonry surfaces, providing long-term color stability and water-repellency – without disturbing the natural texture.

**CANYON TONE STAIN** are siloxane and silane-based solutions designed to seal concrete & masonry by penetrating deeply into the concrete matrix. **IN-STONE** is a translucent sealer designed to impart a natural colored appearance on concrete & masonry substrates. **ACRYSHEEN** is a semi-gloss acrylic sealer providing increased dirt pick-up resistance, graffiti resistance and cleanability on its own or as a topcoat.

**AQUATHON** is a permanently elastomeric, advanced acrylic waterproofing membrane for exterior concrete, masonry and wood walls. It has the ability to bridge hairline cracks & exhibits outstanding weatherability. **AQUATHON 150** is an economical exterior wall waterproofing system. **CANYON TONE TEXTURE** provides an attractive, moderately textured finish for exterior concrete, masonry, wood and metal surfaces. **ACRYSHEEN** is an advanced acrylic finish for exterior wood, hardboard siding, concrete, masonry, metal and existing painted surfaces. **KYMAX®** is a fluoropolymer-based acrylic designed to provide unsurpassed weatherability and color stability on exterior walls and roofs.

**ELASTUFF 210** is a high performance, 100% solids polyaspartic polyurea coating system designed to provide a durable, chemical resistant finish over concrete floors in warehouses, factories, garages etc. **RHINO-TOP** is a durable, colored, skid-resistant finish for asphalt and concrete surfaces. It protects walkways, patios, sport courts, desk & lanais, as well as vertical wall surfaces. It is water-based for easy application and cleanup. **UNIFLEX** Systems are designed to provide waterproofing and chemical resistance over vehicular and pedestrian traffic surfaces.

Advanced acrylic elastomers designed for application over a variety of properly prepared substrates to extend the life of new or existing roof systems. **ROOF MATE** can be applied over metal, BUR, concrete, modified bitumen, EPDM, Hypalon, wood, asphalt, boardstock or sprayed-in-place polyurethane foam insulation, and shingles. All systems are UL 790 Class A rated and surpass ENERGY STAR and CRRC guidelines for reflectivity for lower energy costs.

High build polyurethane & polyurea elastomers designed to provide protection under a wide range of abrasion, corrosion, and chemical conditions. Uses include tank linings, waste/water containment, pipelines, valves, flumes, reservoirs, equipment interiors, chutes, bins, dam gates, rail cars, hopper beds and conveyors. **ELASTUFF** provides high tensile strength, elongation, tear & abrasion resistance, and temperature & hydrolytic stability.

**ELASTALL 1000** is a single-package, high solids, moisture-cured urethane waterproofing membrane for use on below grade walls, between slab membraning and planter boxes. **ACRYLENE 100** is a fast drying, semi-gloss acrylic finish for use on interior or exterior metal surfaces. **ELASTUFF 220** is a premium performance polyaspartic finish designed to provide a high gloss protective finish for plant maintenance, tank & equipment exteriors, bridges, beams, railings, etc. **IN-WOOD** is a semi-transparent exterior wood stain with a unique colorant system that allows the stain to penetrate deeply into the wood grain for long term protection from within.

Primers for use over concrete, wood, metal and other substrates under UNITED’S coatings systems – all are VOC complaint. **UNITED CLEANING CONCENTRATE** (UCC) is a biodegradable, environmentally safe cleaner/degreaser. **UNI-CRETE** and **WALL-BOND 90** are used to repair and/or resurface spalled concrete as well as to add slope to a variety of surfaces.

**WARRANTY REQUIREMENTS**
- **CANYON TONE STAIN 10-YEAR LIMITED**
- **AQUATHON 5-YEAR LIMITED**
- **AQUATHON 10-YEAR LIMITED**
CANYON TONE CLEAR provides transparent protection over above-grade concrete, masonry, aggregate and other concrete-based substrates. It is available in 3 different versions; CANYON TONE CLEAR, which is a 5% active solution; CANYON TONE CLEAR CONCENTRATE, which can be diluted with water to the desired active concentration; and CANYON TONE CLEAR HPC, which is an 80% active, highly penetrating cream. All incorporate a reactive silane/siloxane component, which penetrates deeply into the substrate, chemically locking into the concrete or masonry matrix for long-term moisture, chemical and salt protection. The silicone/siloxane reaction begins at the surface of the concrete-based substrate to form a deep, chemically modified, hydrophobic barrier against moisture intrusion.

CANYON TONE CLEAR is effective against the harmful effects of water, de-icing chemicals, chloride ion intrusion, freeze/thaw exposure, spalling, airborne pollution and acid rain. It is ideal for use on building exteriors, walkways and decks, bridge decks and overpasses, parking garage floors and ramps, and other areas where an invisible, non-yellowing protective sealer is required.

CANYON TONE STAIN has been successfully used to protect thousands of structures throughout the world. It has become the overwhelming choice of discerning Building Owners, Architects and Engineers for use on precast or cast-in-place concrete, masonry, brick, stone and stucco.

CANYON TONE STAIN locks into the surface pores of the substrate as a result of its low viscosity and microscopic penetration. It allows moisture vapor to “breathe” from the building interior while providing excellent water-repellency on the exterior through the use of hydrophobic resins.
ADVANCED FORMULATING
CANYON TONE STAIN contains a unique blend of premium acrylic copolymer resins and inorganic oxide toning pigments. The result is a natural, uniform staining of the surface, along with excellent water-repellent properties. Unlike a paint or coating, the surface film is integrally locked into the substrate. It will not peel or flake. Specialized formulating techniques, and minimal pigmentation, give CANYON TONE STAIN its non-lapping characteristics as well as the ability to form an opaque finish.

APPLICATION VERSATILITY
A translucent finish can be obtained by blending CANYON TONE STAIN with Accent Blending Base to achieve varying degrees of opacity. The resulting semi-transparent finish will allow natural aggregate colors to remain visible while uniformly toning the background.

10-YEAR WARRANTY
UNITED COATINGS warrants to the Building Owner that for a period of 10 (ten) years from the date of completion, CANYON TONE STAIN standard colors, when properly applied;

• Will have excellent color retention and uniformity for the full warranty period.
• Will not peel or flake for the full warranty period.
• Will act as a water-repellent for the full warranty period.

PENETRATION
CANYON TONE STAIN locks into the surface pores of concrete, masonry and brick without forming a heavy surface film. It will not peel or flake when properly applied over these substrates.

UNIFORMITY OF APPEARANCE
The pigments and colorants used in CANYON TONE STAIN are prevented from settling by a proven process of chemical suspension. Color uniformity in the container ensures the Contractor of a non-lapping, controlled application, resulting in color uniformity on the structure.

WATER-REPELLENCY
The hydrophobic acrylic resins used in CANYON TONE STAIN provide excellent damp-proofing characteristics. This reduces absorption of moisture into the substrate, effectively eliminating the staining commonly associated with damp concrete surfaces.

COLOR RETENTION
The pure acrylic copolymers and inorganic oxide toning pigments used in CANYON TONE STAIN provide superior durability and non-fading, ultraviolet stability for long term performance.

BREATHABILITY
CANYON TONE STAIN allows the building to breathe by permitting the passage of moisture vapor under a vapor pressure drive.

NON-OXIDIZING
CANYON TONE STAIN does not contain ingredients that will oxidize and chalk, such as vegetable and marine oils, paraffins, stearates or organic pigments that cause rapid degradation and premature failure.

COLOR RETENTION
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Add the beauty of consistent color to the exterior of almost any concrete structure...

- Apartments
- Schools
- Retaining Walls
- Highway Overpasses
- Hospitals
- Airports
- Parking Garages
- Shopping Malls
- Warehouses
- Banks
- Traffic Tunnels
- Road Dividers
- Monuments
- Concrete Blocks
- Sports Complexes
- Stadiums
- Office Buildings
- Auto Dealerships
- Hotels
- Churches
- Government Offices
- Public Restrooms
- Storage Tanks
- Landscaping
- Department Stores
- Elevated Roadways
- Sound Walls
- Wildlife Enclosures
- Correction Facilities
- And More!

...maintain the original texture
CANYON TONE STAIN®
PIGMENTED WATER-REPELLENT STAIN
WITH PLIOTEC® TECHNOLOGY

Technical Data & Application Instructions

PRODUCT DESCRIPTION
CANYON TONE STAIN is a modified, water-based acrylic, penetrating pigmented sealer. It possesses superior color stability, ultraviolet resistance, alkali and pollution resistance, and water-repellency. Toning pigments are chemically suspended in the acrylic resins, thus eliminating settling and color variations on the structure.

CANYON TONE STAIN is integrally locked into the substrate as a result of its low viscosity and microscopic penetration properties. It will not peel, crack or blister from a properly prepared concrete or masonry surface. CANYON TONE STAIN allows moisture vapor to escape from the building interior, while providing excellent water-repellency on the exterior through the use of hydrophobic resins.

BASIC USES
CANYON TONE STAIN is a penetrating sealer and stain with excellent water-repellent properties. It is designed for use on properly prepared, above-grade, smooth or textured concrete, masonry, brick, stone or stucco. CANYON TONE STAIN corrects natural color imperfections in the substrate by imparting permanent color uniformity plus water-repellency, without disturbing the natural texture of the substrate. It is not designed for application to horizontal surfaces.

CANYON TONE STAIN is used as a uniform color finish on precast and poured concrete, glass fiber reinforced concrete, brick, stucco and stone surfaces. CANYON TONE STAIN is not designed to waterproof concrete block or other porous substrates. It can be used over masonry substrates to achieve color uniformity only. Contact UNITED’s Technical Service Department for additional information. As a water-based system, CANYON TONE STAIN can be used on interior surfaces as well as exterior. CANYON TONE STAIN complies with all VOC regulations.

Highway bridge structures, sound walls, median barriers, foundations, tunnels, retaining walls and related building structures are all candidates for the application of CANYON TONE STAIN.

PHYSICAL PROPERTIES

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<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
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<tr>
<td>Solids by Weight</td>
<td>40% (±2)</td>
<td>ASTM D2369</td>
</tr>
<tr>
<td>Solids by Volume</td>
<td>24% (±2)</td>
<td>ASTM D2697</td>
</tr>
<tr>
<td>Weight per Gallon</td>
<td>10.5 lbs (±2)</td>
<td>ASTM D1475</td>
</tr>
<tr>
<td>Viscosity</td>
<td>900-1500 cps @ 70°F</td>
<td>ASTM D2196</td>
</tr>
<tr>
<td>Dry Time*</td>
<td>20 minutes</td>
<td>ASTM D1640</td>
</tr>
<tr>
<td>Cure Time*</td>
<td>1 hour</td>
<td>ASTM D1640</td>
</tr>
<tr>
<td>Gloss</td>
<td>4.0 (60° Gardner)</td>
<td>ASTM D523</td>
</tr>
<tr>
<td>Permeability</td>
<td>10 Perms (±2) @ 4 dry mils</td>
<td>ASTM E96</td>
</tr>
<tr>
<td>Adhesion to Concrete/Masonry</td>
<td>300 lbs/sq. in. (2,069 kPa)</td>
<td>ASTM D3359</td>
</tr>
<tr>
<td>Low &amp; High Temp. Service Limits*</td>
<td>-70°F to 200°F (-57°C to 93°C)</td>
<td></td>
</tr>
</tbody>
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*Dry time and cure time at 75°F (24°C), 50% R.H.

COLORS
CANYON TONE STAIN is available in a wide selection of natural toned colors. All other colors are custom matched by UNITED for the specific application. UNITED has the color tinting facilities to match virtually any color. Color chips or samples must be furnished to UNITED for all custom colors.

WARRANTY
UNITED COATINGS warrants to the Building Owner that, when properly applied, CANYON TONE STAIN will not peel or flake, will have excellent color retention and uniformity, and will act as a water-repellent for a period of 10-years from the date of application.
SURFACE PREPARATION

Surfaces to receive water-repellent stain shall be structurally sound, clean, dry, fully cured, and free from dust, efflorescence, scale or other foreign materials. New concrete that has been treated using a curing or release compound, must be cleaned using United Cleaning Concentrate (UCC) or equal biodegradable cleaner. Rinse thoroughly using clean water to remove all traces of the chemical cleaner. Existing concrete must also be cleaned using UCC and water, and thoroughly rinsed. If general cleaning is not adequate, or if substrates are too dense to achieve adequate penetration, they should be brush-blasted to clean and/or open the surface. Bug-holes, voids and stress cracks in the concrete or masonry surface to clean and/or open the surface. Bug-holes, voids adequate penetration, they should be brush-blasted adequate, or if substrates are too dense to achieve

CANYON TONE STAIN is a natural penetrating stain. It is not designed to form a heavy “paint-like” film. If CANYON TONE STAIN is unable to penetrate, it will form a surface film. Surfaces such as glazed or dense brick, glass fiber reinforced concrete, and extremely smooth, dense concrete must be sweep sandblasted prior to application of CANYON TONE STAIN to allow for maximum penetration. Although CANYON TONE STAIN has been used successfully on numerous recoat projects over a wide range of existing paints and coatings, a test area should always be applied to verify compatibility. CANYON TONE STAIN will provide the same color stable, water-repellent properties, however, adhesion to the substrate will depend on the bond of the existing paint or coating.

APPLICATION

CANYON TONE STAIN may be applied by roller or airless spray equipment. Any airless spray equipment capable of 1,000 psi (6,980 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used for applying CANYON TONE STAIN. Utilize higher capacity spray equipment on large projects for maximum production. A reversible self-cleaning spray tip with orifice size of .015” to .021” (.38 to .53 millimeters) and minimum 40 degree fan angle is recommended.

Brush or roller application is recommended only for edging work and for confined areas that would require extensive masking or protection from spray during application. When applying CANYON TONE STAIN with a brush or roller, do not apply material at a coverage rate exceeding that which has been spray applied. Multiple application methods, at varying coverage rates, may result in variations in the finish sheen.

Refer to Table 3 entitled “Estimated Total Coverage Rates” for the type of substrate and approximate total coverage rate per gallon. The coverage rates listed are the approximate total for two (2) separate applications. These figures are provided for guideline use only.

CANYON TONE STAIN is applied in a minimum of two separate coats. The first application shall achieve an indepth penetrating color base. The second application shall achieve color uniformity, aesthetic satin tone and water-repellency. The second application can be applied as soon as the first application is dry to touch. The minimum dry film thickness shall be a 4 mils (102 microns) at any location to qualify for UNITED COATINGS’ 10-year warranty program. The use of a “wet film gauge” during application is highly recommended to confirm that the proper film thickness is achieved. A cross-hatch (vertical/horizontal) spray technique must be employed. Wherever possible, either spray to a termination point or maintain a wet edge. Darker colors applied over light colored substrates may require additional coats for full color uniformity. Exceptionally coarse and/or porous substrates may require a third coat of CANYON TONE STAIN to achieve uniform color and sheen.

Each application shall first be in a uniform horizontal direction, followed by a uniform, overlapping vertical direction. When applying CANYON TONE STAIN to ribbed, fluted, split-face or other textured finishes, take care to apply the stain from various angles to ensure that all surfaces are evenly coated. The spray gun shall be held perpendicular to and not more than 18” (45 cm) from the wall. Care should be taken during application to prevent runs or sags. Backrolling is an effective method of achieving hide over coarse or porous surfaces.

The Applicator should first apply a field test on a small, inconspicuous area of the building surface to determine the best absorption rate to achieve color uniformity. Refer to paragraph entitled “Sample Area Application.”

Use soap and water to thoroughly flush equipment. Purge water from equipment using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines and equipment until the next use.

ESTIMATED TOTAL COVERAGE RATES TABLE 3

<table>
<thead>
<tr>
<th>Surface</th>
<th>Total Square Feet/Gallon – Estimated</th>
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<tbody>
<tr>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td>Cast-In-Place</td>
<td>125 (3.0 m²/l)</td>
</tr>
<tr>
<td>Precast</td>
<td>125 (3.0 m²/l)</td>
</tr>
<tr>
<td>Glass Fiber Reinforced</td>
<td></td>
</tr>
<tr>
<td>Concrete (GFRC)</td>
<td>150 (3.7 m²/l)</td>
</tr>
<tr>
<td>Concrete Block† Standard</td>
<td>75 to 100 (1.8 to 2.4 m²/l)</td>
</tr>
<tr>
<td>Split-Face</td>
<td>50 to 75 (1.2 to 1.8 m²/l)</td>
</tr>
<tr>
<td>Brick†</td>
<td>75 (1.8 m²/l)</td>
</tr>
<tr>
<td>Stucco</td>
<td></td>
</tr>
<tr>
<td>Spray-On†</td>
<td>50 (1.2 m²/l)</td>
</tr>
<tr>
<td>Troweled†</td>
<td>100 (2.4 m²/l)</td>
</tr>
</tbody>
</table>

Apply approximately ½ the total number of gallons in each of the two separate applications.

Note: The above absorption (coverage) rates are provided for estimating purposes only. Absorption rates will depend upon the texture and porosity of the substrate. Allow for extra surface area when estimating coverage for raked joints and fluted or split-face surfaces. Estimated coverage rates are totals for two coats.

A minimum of 4 dry mils is required at any location to qualify for UNITED COATINGS’ 10-year CTS warranty program.
PERFORMANCE PROPERTIES

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<th>Property</th>
<th>Test Procedures</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Resistance to Accelerated Weathering</td>
<td>Color retention &amp; ultraviolet resistance after 3,000 hours continuous exposure in QUV Cabinet as per ASTM G154</td>
<td>No deleterious effects. Color is within 5 N.B.S units as per ASTM D2244 &amp; D1729. No chalking or flaking as per ASTM D659 &amp; D722</td>
</tr>
<tr>
<td>Resistance to Natural Sunlight</td>
<td>Color &amp; gloss retention after 18,000 megalux of radiation exposure as per ASTM G90</td>
<td>Color and gloss change less than 1 CIE unit</td>
</tr>
<tr>
<td>Reduction of Chloride Ion Penetration</td>
<td>Sealed concrete panels tested as per ASTM D1218 for chloride ion resistance</td>
<td>CANYON TONE STAIN achieved a reduction of 73% @ 1.6 to 13 mm penetration and 94% @ 13 to 25 mm penetration</td>
</tr>
<tr>
<td>Resistance to Wind Driven Rain</td>
<td>Rilem Tube Method #11.4 used to determine the ability to reduce water penetration in a pressurized environment</td>
<td>0 penetration @ 4 dry mils (102 microns) after 60 minutes exposure</td>
</tr>
<tr>
<td>Resistance to Salt Spray*</td>
<td>Harshaw Salt Spray Cabinet – ASTM B117 (5% Sodium Chloride fog solution)</td>
<td>No deleterious effects; no color fade and no efflorescence – after 500 hours</td>
</tr>
<tr>
<td>Resistance to Sulfide Staining†</td>
<td>Immersion in saturated Hydrogen Sulfide – ASTM D1712</td>
<td>No signs of discoloration after 15 minutes</td>
</tr>
<tr>
<td>Resistance to Chemical Reagents°</td>
<td>Immersion in the following solutions for 7 days: 10% Sodium Hydroxide</td>
<td>No softening; very slight color change</td>
</tr>
<tr>
<td></td>
<td>10% Ammonium Hydroxide</td>
<td>No softening; very slight color change</td>
</tr>
<tr>
<td></td>
<td>Mineral Spirits KB Value 38</td>
<td>No softening or color change</td>
</tr>
</tbody>
</table>

*Test conducted with CANYON TONE STAIN on concrete masonry blocks.
†Sulfide gas is a common industrial pollutant, which discolors the pigment in many stains.
°Sodium Hydroxide and Ammonium Hydroxide were tested to show CANYON TONE STAIN’S resistance to alkaline conditions found in concrete and masonry. Mineral Spirits is commonly used for graffiti removal.

ADVANTAGES

- **Uniformity of Appearance:** CANYON TONE STAIN contains a relatively low degree of pigmentation. Depending upon the desired color, a maximum of 1 pound of toning pigments are used per 1 gallon (3.8 liters) of finished product. These toning pigments are chemically suspended in solution at all times by a proven process that eliminates settling and color variations on the structure.

- **Color Retention:** Toning pigments used in CANYON TONE STAIN standard colors are laminar silicates, titanium dioxide and inorganic oxides. These non-fading toning pigments are as durable as natural stone and will greatly resist ultraviolet and ozone attack.

- **Single Package:** CANYON TONE STAIN is a ready-to-use material after mixing. It has no pot life problems. Shelf life is unlimited.

- **Fast Application:** CANYON TONE STAIN dries quickly and can be rapidly applied in 2 coats over most surfaces.

- **Non-Oxidizing:** CANYON TONE STAIN does not contain any ingredients that will oxidize, such as vegetable and marine oils, paraffins, stearates or organic pigments, which cause rapid degradation and allow moisture intrusion. **CANYON TONE STAIN** contains pure, non-yellowing acrylic polymers. **There are no filler resins or plasticizers.**

- **Non-Lapping:** CANYON TONE STAIN utilizes a unique acrylic resin formulation which, together with its low degree of pigmentation and sheen, virtually eliminates lap marks under most application conditions.

- **Water-Based:** Non-toxic and odor free for easy, safe application on both interior and exterior surfaces. Meets all Federal, State and Local V.O.C. requirements.

- **No peeling or Flaking:** Due to the micro-penetrating qualities and tenacious adhesion of CANYON TONE STAIN to concrete and masonry surfaces, the stain weathers like natural concrete and does not peel or flake from the substrate as do typical “paint” finishes.
SAMPLE AREA APPLICATION

UNITED recommends that a sample area be applied by the Contractor, using the proposed application method and coverage rate, and desired CANYON TONE STAIN color. Approval shall then be obtained prior to any general application of the material. Sample application shall be conducted on an inconspicuous area of the actual building (minimum 50 square feet / 3.7 m²).

Applying the desired CANYON TONE STAIN color to a sample area will determine the best absorption rate to achieve color uniformity, as well as determine suitability of the application technique employed. Final appearance is affected by absorption rate, surface texture and color, porosity of the substrate and application technique. For these reasons, written approval should be obtained from the Architect and/or Building Owner prior to proceeding with the general application. Approved sample area shall serve as a standard of comparison with respect to color and overall appearance.

APPLICATION TIPS

Whenever CANYON TONE STAIN is ordered by a customer, every effort is made to send all containers of the CANYON TONE STAIN color in the same batch number. However, due to fluctuations in inventory levels, there are occasions when different batch numbers of the same color are sent to complete an order. Whenever this occurs, it is the sole responsibility of the CANYON TONE STAIN Applicator to make certain that only one batch number is used on any side of the building. Different batch numbers cannot be used on the same wall unless they are “boxed” or mixed together to insure total color uniformity.

When pre-cast panels or GFRC panels are stained at the factory and later constructed at the building jobsite, the Contractor must be certain that all panels attached on any given side of a building are stained with the same batch number of CANYON TONE STAIN.

PACKAGING & MIXING

CANYON TONE STAIN is a single component, ready-to-use material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

Material shall be thoroughly mixed for a minimum of five (5) minutes prior to application. Do not thin the material. Use a power mixer with a blade capable of uniformly mixing the entire container. Periodically agitate the material during application to ensure even distribution of the pigment.

Shelf life in unopened containers is 2 years. Material should be stored at temperatures no lower than 40°F (4°C), or higher than 100°F (38°C). Do not open containers until ready to use the material.

LIMITATIONS & PRECAUTIONS

CANYON TONE STAIN will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store unless protection from freezing is available. Do not apply CANYON TONE STAIN at temperatures below 50°F (10°C) or when there is a possibility of temperatures falling below 32°F (0°C) within a 4 hour period after application.

CANYON TONE STAIN requires complete evaporation of water to achieve cured properties. Cool temperatures and high humidity will retard cure. Do not apply if weather conditions will not permit complete drying of material before rain, dew, fog or freezing temperatures.

CANYON TONE STAIN is a low viscosity material designed to provide color uniformity and water repellency without disturbing the natural texture of the substrate. It is not designed to fill or waterproof porous substrates under wind driven rain or other severe conditions. For applications requiring waterproofing, a membrane-forming coating such as UNITED’s Aquathon, Aquathon 150 or Master Wall should be utilized.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator should be worn by Applicator. For interior applications, provide mechanical exhaust ventilation. Air line masks or positive pressure hose masks should be worn during interior applications.

For additional information on safety requirements, refer to OSHA guidelines and CANYON TONE STAIN Material Safety Data Sheet.

Distributed by: BEST MATERIALS LLC
Ph: 800-474-7570, 602-272-8128
Email: sales@bestmaterials.com
www.bestmaterials.com

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
Pigmented, Water-Repellent Acrylic Penetrating Sealer

PRODUCT DESCRIPTION

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Precast Concrete: Section 03400
B. Membrane Waterproofing: Section 07110
C. Sealants: Section 07900
D. Special Coatings: Section 09800
E. Painting: Section 09900

1.02 QUALITY ASSURANCE

A. Qualifications of Applicator: In order to qualify for the Manufacturer’s warranty program, the water-repellent stain shall be applied by a Manufacturer-certified Applicator.
B. Qualifications of Manufacture: Water-repellent stain Manufacturer shall be an ISO 9001:2000 Certified Company and be current on all methods and procedures as set forth in the program.
C. Jobsite Mock-Up: After initial samples have been approved, apply two (2) separate coats of water-repellent stain to one side of the mock-up wall located at the jobsite. Stain shall be of the type and color that will be used on the actual building. Application procedures and absorption rates shall be as hereinafter specified, unless otherwise recommended by the Manufacturer in writing, to achieve color uniformity and to effectively repel moisture from the substrate.
1. Approval by the Architect or Owner shall serve as a standard of comparison with respect to color and overall appearance.
2. General application to actual surfaces on the building shall not proceed until jobsite mock-up has been approved in writing by the Architect or Owner.

Delete paragraph B for projects not requiring a jobsite mock-up

1.03 SUBMITTALS

A. Submit Manufacturer’s literature, Approved Applicator certificate and samples to the Architect or Owner in accordance with requirements specified in General Conditions and Division 1, General Requirements.
B. Manufacturer’s Literature: Manufacturer’s literature shall be submitted for review before work is started. Literature shall show material specifications, physical properties (including ASTM test methods utilized), Manufacturer’s estimated application rate for each surface to which the stain is to be applied, current application instructions of the Manufacturer, and Material Safety Data Sheets.
C. Samples: After initial color selection has been approved, submit two (2) precast concrete units to match those being used in the work, with water-repellent stain spray-applied over the entire surface in two (2) separate applications. The untreated precast units shall be furnished by the General Contractor. Water-repellent stain shall be of type and color that will be used on the actual building. Samples shall be resubmitted until approved by the Architect or Owner. Approval by the Architect or Owner shall serve as a standard with respect to color and overall appearance.

Modify above paragraph to meet project substrate and submittal requirements
1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original sealed containers, clearly marked with the Manufacturer's name, brand name, type of material, batch number and date of manufacture.

B. Store materials in an area where temperatures will not be less than 50°F (10°C) or higher than 90°F (32°C), and in accordance with OSHA & local code requirements.

1.05 JOB CONDITIONS

A. Temperature and relative humidity conditions during time of application shall be per Manufacturer's application instructions. Do not apply material under rainy conditions or within two (2) days after surfaces become wet from rainfall or other moisture. Do not apply when weather is foggy or overcast.

B. Take precautions to ensure that workmen and work areas are adequately protected from health hazards resulting from handling, mixing and application of material.

C. Furnish all scaffolding and the necessary equipment to complete the work. Scaffolding shall comply with all local, state and federal requirements as to safety.

D. Provide drop cloths and other forms of protection necessary to protect all adjoining surfaces to render them completely free of overspray and splashes. Any surfaces that have been damaged or splattered shall be cleaned, restored or replaced to the satisfaction of the Architect or Owner.

E. Application of the water-repellent stain shall be completed prior to applying sealant between joints. If sealant is applied prior to staining, a test must be conducted prior to installation to verify compatibility of the stain and sealant.

F. Provide ventilation or forced air circulation during and after interior application of stain until fumes are no longer evident.

Delete paragraph F for exterior applications only. Ventilation Systems to Meet OSHA requirements.

PART 2 – PRODUCTS

2.01 DESCRIPTION

An acrylic, penetrating stain designed to provide long term color uniformity, ultraviolet resistance, anti-carbonation characteristics, alkali and pollution resistance, plus water-repellency without disturbing the natural texture of the substrate. For use over vertical, above-grade smooth or textured concrete, exposed aggregate concrete, glass reinforced concrete, brick, stone, stucco and other masonry surfaces.

2.02 MATERIAL

Water-repellent stain shall be UNITED COATINGS’ "CANYON TONE STAIN", or equal, meeting the following minimum requirements:

A. Solids by volume shall be a maximum of 33% (±2) [ASTM D2697]

B. Weight per gallon shall be 10.6 lbs (4.8 kg) (±.2) [ASTM D1475]

C. Dry time shall be 15 minutes @ 75°F (24°C), 50% R.H. [ASTM D1640]

D. Cure time shall be 1 hour @ 75°F (24°C), 50% R.H. [ASTM D1640]

E. Gloss (Angular Reflectance) shall be 4 @ 60° Gardner [ASTM D523]

F. Adhesion to concrete shall be a minimum of 300 lbs./sq. in. (2,069 MPa) [ASTM D3359]

G. Temperature limits for service conditions shall range from -70° F to 200° F (-64°C to 93°C)

H. Toning pigments shall be inorganic oxides

I. Materials shall meet the performance requirements as specified in Paragraph 2.02

J. Stain shall have a minimum 10-year history of successful performance under weather conditions similar to those encountered at the project site

K. Graffitti Resistant Topcoat (optional): ACRYSHEEN, clear, semi-gloss 100% acrylic sealer, as supplied by Coatings Manufacturer for increased dirt release characteristics and to aid in the removal of graffiti and other stains

2.03 COLOR

Color of the stain shall be _______________________________, as selected by the Architect or Owner from Stain Manufacturer's available colors.

2.04 PERFORMANCE REQUIREMENTS

A. Resistance to dirt or soil collection: Treated specimen shall meet the following requirements after 12 months concentrated weather exposure in southeast (high humidity) environment when tested in accordance with ASTM D3719:

1. Dirt collection index of 90% minimum

2. No fungal growth

B. Resistance to concentrated sunlight: Color retention and ultraviolet resistance of the treated specimen shall meet the following requirements after 18,577 mega joules of radiation when tested in accordance with ASTM G90 on a Q-Track sunlight concentrator:

1. No cracking visible under 45X magnification
2. Instrumental color change of less than .90 CIE units
3. Instrumental gloss change of less than 1 unit tested @ 60°Gardner

C. Resistance to Accelerated Weathering: Color retention and ultraviolet resistance of the treated specimen shall meet the following requirements after 1,500 hours of testing in accordance with ASTM G154 in a QUV cabinet:
   1. Color Retention: Within five (5) N.B.S. (National Bureau of Standards) units when tested in accordance with ASTM D2244; or shall show no appreciable change when tested in accordance with ASTM D1729. Inspection is compared to unweathered specimen.
   2. Ultraviolet Resistance: No chalking or flaking when tested in accordance with ASTM D659 and D722.

D. Resistance to Salt Spray: Color retention and degree of efflorescence of the treated specimen shall meet the following requirements after 500 hours of testing in accordance with ASTM B117 in a Harshaw Salt Spray Cabinet:
   1. Color Retention: Within five (5) N.B.S. (National Bureau of Standards) units when tested in accordance with ASTM D2244; or shall show no appreciable change when tested in accordance with ASTM D1729. Inspection is compared to unweathered specimen.
   2. Degree of Efflorescence: Specimen shall exhibit no efflorescence when tested in accordance with ASTM D2831.

E. Resistance to Sulfide Staining: No discoloration after 15 minutes immersion in saturated Hydrogen Sulfide gas solution when tested in accordance with ASTM D1712. Compare with control specimen not exposed to Hydrogen Sulfide gas solution.

F. Resistance to Chemical Reagents: Specimen shall exhibit none or slight color change and no softening or deterioration after 7 days immersion in the following chemicals: Ammonium Hydroxide - 10%; Sodium Hydroxide - 10%; Mineral Spirits, KB value 38. Inspection is compared to specimen not exposed to chemical reagents.

G. Verification of Minimum 10-Year Exposure to Appropriate Climate: Stain shall have been in use in a similar climatic region 10 years or more and show no sign of fading, peeling or flaking. Supply project locations exceeding 10 years of service.

H. Moisture Vapor Transmission: Must allow moisture from building interior to pass through the substrate with a perm rating of 10 (±2) when tested in accordance with ASTM E96.

P A R T 3 – E X E C U T I O N

3.01 PREPARATION OF SURFACES
Surfaces to receive water-repellent stain shall be structurally sound, clean, dry, fully cured, and free from dust, efflorescence, scale or other foreign materials. Methods and materials used for cleaning of substrate shall be as recommended by the Manufacturer of the water-repellent stain. Bug-holes, voids and stress cracks in the masonry surface must be repaired with cementitious patch or repair material approved by the Manufacturer of the water-repellent stain prior to application. Materials such as curing agents, form release agents, bond breakers and other concrete processing materials shall be completely removed in accordance with the Manufacturer’s printed instructions for removal prior to coating application.

3.02 MIXING
Water-repellent stain shall be thoroughly mixed in accordance with Manufacturer's directions. Mix all containers thoroughly prior to application. Do not thin the material.

3.03 APPLICATION
A. Water-repellent stain shall be spray-applied using conventional or airless spray equipment in two (2) separate applications in strict accordance with the Manufacturer's printed application instructions and precautions, copies of which shall be at the jobsite. The first application shall achieve an in-depth penetrating color base. The second application shall achieve color uniformity, aesthetic satin tone, and water repellency. Material shall be applied using methods and equipment as recommended by the stain Manufacturer. Applicators shall be required to wear chemical respirators in accordance with OSHA requirements during application. Should jobsite or environmental conditions prohibit spray application, the stain may be applied by roller, taking care so as to not exceed the recommended application rate.

B. The Applicator shall apply a field test on a small inconspicuous area of the actual building surface to determine the best absorption rate to achieve color uniformity, as well as to determine suitability of the application technique.

C. Material shall be applied at the rate of approximately _________________ sq. ft./gal. Absorption rates will vary depending on the surface texture and porosity of the substrate in order to achieve even staining and optimum water-repellency. The minimum dry film thickness shall be 4 mils (102 microns) at in any one location to qualify for UNITED COATINGS’ 10-year warranty program. The use of a “wet film gauge” during application is highly recommended to confirm that the proper film thickness is achieved. The spray gun shall be held perpendicular to and not more than 18 inches (45 cm) from the substrate during application. The second application can be applied as soon as the first application is dry to touch. When utilizing stain on coarse or textured surfaces, a third application may be necessary to achieve color uniformity and optimum water-repellency.

Fill in the number of square feet per gallon for proper coverage rate in the above paragraph.
Actual coverage rates are determined by the jobsite sample.
Approximate total coverage rates are as follows:

1. Smooth Concrete  - - - - - - - - - - - - - - - - - - - - - - - - 125 sq. ft./gal. (3.0 m²/l)
2. Sandblasted Concrete  - - - - - - - - - - - - 100 to 125 sq. ft./gal. (2.4 to 3.0 m²/l)
3. Standard Concrete Block*  - - - - - - - - - - 75 to 100 sq. ft./gal. (1.8 to 2.4 m²/l)
4. Split-Face Concrete Block*  - - - - - - - - - - 50 to 75 sq. ft./gal. (1.2 to 1.8 m²/l)
5. Brick and Stucco  - - - - - - - - - - - - - - - - - - - - - - - - - - 75 sq. ft./gal. (1.8 m²/l)

*CANYON TONE STAIN is NOT designed to WATERPROOF concrete block or other porous substrates

Apply approximately 1/2 total number of gallons in each of the two (2) separate applications. Allow for extra surface area when estimating coverage over fluted, raked, split-face or other textured surfaces.

D. Each application shall be first in a uniform horizontal direction, followed by a uniform overlapping vertical direction. Two separate applications can normally be accomplished in one stage setting with minimal, if any, delay due to the rapid dry time. Work shall be scheduled so that the stopping point prior to each shut-down occurs at an opening, column or corner.

E. If unevenness in color, lines from work termination or scaffolding, etc. exist, the Architect or Owner may have all such surfaces reapplied at the Contractor's expense. Reapplication, if required, shall be carried to a natural termination point.

F. Brush or roller-apply stain only at locations where overspray would affect adjacent materials and where not practical for spray application, taking care to apply the stain at the same rate used for the spray application.

G. Any surfaces that extend below grade must be sealed with a waterproof membrane specifically designed for such purpose. This will prevent ground moisture from wicking up the masonry surfaces.

H. In areas indicated by the Architect or Owner, apply one coat of UNITED COATINGS' Acrysheen at the rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l).

3.04 CLEANUP
Clean up any overspray from adjacent surfaces with cleaner that will not damage surfaces, as recommended by the stain Manufacturer.

3.05 FIELD QUALITY CONTROL
Empty water-repellent stain containers shall not be removed from the jobsite until final completion or until so authorized in writing by the Architect or Owner.

3.06 10-YEAR STANDARD PRODUCT WARRANTY (Optional)
Upon completion of the stain application, and as a condition of its acceptance, deliver to the Architect or Owner two copies of the fully executed 10-year limited product warranty from the Manufacturer, including the following provisions:

1. Product used will act as a water-repellent for the full warranty period
2. Product used will not peel or flake for the full warranty period
3. Product used will have excellent color retention and uniformity for the full warranty period
Biltmore Hotel
Pool Cabanas & Villas • Scottsdale, Arizona

This world-renowned resort hotel incorporates a distinctive Frank Lloyd Wright design on the exterior concrete tiles. In order to reproduce the original design on expansion and remodel work, the design was duplicated using a mold, so that it can be reproduced off site or in place depending on project requirements. Working closely with hotel management, facilities maintenance and project design personnel, UNITED developed “Biltmore Tan” to blend with the original Frank Lloyd Wright color and finish.
Intel Corporation
Chandler, Arizona

As Intel expanded their corporate headquarters, they wanted to maintain a consistent look in matching the color of the new construction to the existing buildings. The new buildings were manufactured using cast-in-place concrete, which, due to the type of forms used, resulted in an extremely blotchy appearance. Canyon Tone Stain was tinted to match the existing gray color, effectively achieving the desired uniform look.
IKEA Home Furnishings
Woodfield Mall • Chicago, Illinois

For the IKEA Home Furnishings chain of stores, corporate as well as physical image is a top priority. Their bold corporate color scheme has become an integral component in the design of new facilities. The architectural challenge was in finding an exterior finish system for masonry construction that would support IKEA’S bright, bold colors. After an extensive research, Canyon Tone Stain provided the answer, allowing their vibrant color scheme with a minimal amount of maintenance.
Due to inconsistencies with the integral color used in the precast panels for this facility, they were unacceptable to the Owner. A blend of Canyon Tone Stain and Canyon Tone Clear was custom formulated to provide a semi-transparent consistency. This provided a uniform “toning” of the panels so that they all exhibited a consistent look, yet maintained a natural appearance. The Canyon Tone blend was applied at the precast facility, and then touched up as necessary after panel installation. The result was a natural looking finish that was acceptable to the Architect, Owner and Precast Manufacturer.
National Cemetery of the Pacific
Honolulu • Oahu • Hawaii

Punchbowl Crater, overlooking Pearl Harbor on Oahu, is home to the National Cemetery of the Pacific, which includes a World War II Memorial.

Unfortunately, many of the marble panels that made up the memorial had discolored, exhibiting unsightly stains. A ceremony honoring the 50 year anniversary of Armistice Day, which included a visit by President Clinton, required that something be done to restore the natural beauty of the stone. Engraved into the marble panels are the names of all U.S. Servicemen and Women who were killed during the attack on Pearl Harbor. A major concern of the U.S. Department of Defense, who maintains the cemetery, was that nothing be used that would fill in or in any way diminish the integrity of the engraved names. On-site samples were applied, in conjunction with extensive testing performed at the Department of Defense Laboratories in Washington, DC. The testing confirmed that Canyon Tone Stain offered the characteristics required for this prestigious project.
This cast-in-place concrete structure was originally sealed with a clear penetrant. Unfortunately, this did not prevent extensive staining and unsightly algae growth from occurring, particularly in the shaded areas of the building. This Owners wanted to keep the natural look of the concrete, so were reluctant to go with paint. Canyon Tone Stain provided the perfect solution, as they were able to achieve a natural, uniform color, while eliminating the algae growth. Maintenance to the building exterior was also virtually eliminated.
September 9, 1987

Mr. Rick LeGrand
UNITED COATINGS
E. 19011 Cataldo
Greenacres, WA 99016

RE: Canyon Tone Stain

Dear Rick:

To give you some feedback, I thought I would let you know some of our experiences in using a pigmented sealer (concrete stain) on some of our highway structures.

Canyon Tone Stain was first used in 1971 as a change order on a Washington State Department of Transportation bridge structure project in Wenatchee, WA. We were so impressed with the result, the application of this type of pigmented sealer was then incorporated into several new bridge structure specifications. It has since been specified on other concrete highway structures such as sound walls, median barriers, retaining walls, and as well as several masonry buildings.

We found the use of a pigmented sealer gave an aesthetic color uniformity to concrete structures, eliminated noticeable pour color variations, form lines, etc., from high visible surfaces. As added benefits we found that the pigmented sealer repelled water, shed airborne pollutants, and was chemical resistant. The chemical resistance increased in importance in areas where de-icing salts or acid rain could affect exposed concrete surfaces or reinforcing steel. A safety benefit was achieved when the sealer was applied to concrete traffic barriers as they did not turn dark when it rained.

Another consideration that we have had concerning highway structure applications is graffiti resistance. As Canyon Tone Stain does not lift from the concrete surface when exposed to mineral spirits or turpentine, these materials could be used to remove the majority of graffiti spray paint, crayon, etc. Additionally, if patch repair is ever needed, the Canyon Tone solvents blend into existing coated surfaces leaving little, if any, noticeable evidence of repair.

Over the years, our inspection of Canyon Tone projects has shown a consistent high quality of both aesthetic finish and weathering performance on all projects where it has been applied. Specifically the 16 year old Wenatchee Bridge Project has changed very little, if at all, over those years of exposure. We do not plan to recoat or perform any maintenance, except for graffiti removal, on any surface that has received the pigmented sealer.

Sincerely,

R. RAFAL MAYS
Principal Architect
ALABAMA
A.T. Medical Clinic / Leeds / 1982
Brekenridge Hospital / Leeds / 1987
Dora Bank / Dora / 1982
Mobile Infirmary / Mobile
Owens – Corning Fiberglass / Huntsville
Southern Bank / Montgomery
Spring Hill Memorial Hospital / Mobile
St. Dominick's Hospital / Leeds / 1989

ALASKA
Central Peninsula High School / Kenai / 1986
Glacier View School / Glenallen
Juneau School District / Juneau
Southwest Region Schools / Dillingham
Wasilla High School / Wasilla
Western Air Lines / Anchorage
Willow Multi-Purpose Facility / Willow

ARIZONA
100th Street Elem. School / Scottsdale / 13,700 sq. ft. / 1993
91st Ave. Waste/Water Plant / Phoenix / 1995
Arizona Bank – Tan Verde Branch / Tucson
Arizona DOT / Phoenix / 1989-1992
Arizona DOT – Payson Highway SR 87 / Mesa / 1991
Arizona DOT – Payson-Showlow Hwy. / 1991
Arizona DOT – Payson Hwy. SR87 / Payson / 1991
Arizona Public Service Co. Administration Building / Four Corners
Arizona Public Service Company Office/Warehouse / Phoenix
Arizona Public Service Co. / Customer Svc. Bldg. / Sun City West
Army Aviation Support Facility #3 / Marana / 1993
Baker Brothers / Phoenix
Baltimore Shopping Center / Phoenix
Biltmore Hotel / Phoenix / 1994
Biltmore Villas Phase 2 / Phoenix / 1996
Biltmore Villas Phase 4 / Phoenix / 1999
Buttercup Precast / Phoenix / 1992
Catalina Village / Tucson
Central Bank / Chandler
Central High School / Phoenix
Chris-Town Village Shopping Center / Phoenix
Citizens Utilities / Bullhead City
City of Phoenix – Squaw Peak / Phoenix / 1989
Coconino County Correctional Facility / Flagstaff
Desert Vista High School / Phoenix / 108,400 sq. ft. / 1996
Douglas High School / Tucson / 1995
Fair Lane Bowling / Phoenix
Fierra Adobe Post Office / Phoenix / 1993
First Western Bank / Phoenix
Foothills Village Apartments / Phoenix
Glendale Municipal Airport Terminal / Glendale / 1986
Goodyear Service Store / Phoenix
Harvey Valley Elementary / Phoenix
Hohokan Industrial Park 1 / Tempe
Hunt Chemical Company / Tempe
Intel Buildings / Chandler / 1985
Intel Corporation / Phoenix
Keno Sports Park / Tucson / 1996
Koll Business Complex / Tempe
Long Drug Store / Chandler / 1984
Maricopa Community Colleges / Scottsdale / 1992
Maricopa County Parking Complex / Phoenix
McDowell Mountain High School / Fountain Hills / 1995
Mesa Fire Station #6 / Mesa
Mountain Bell T.S.P.S. Building / Phoenix
Mountain Bell Telephone / Scottsdale
National Guard Warehouse / Phoenix / 1992
North High School IMC / Phoenix
Oro Estrada Shopping Center / Tucson
Payson Safeway / Payson
Peoria High School / Peoria / 1984
Phoenix Bus Maintenance Facility / Phoenix
Phoenix Bus Terminal / Phoenix / 1993
Pima Company Sign & Painting Company / Tucson
Prescott Fire Station / Prescott
Princess Resort / Scottsdale / 1992
Rolling Hills Shopping Center / Tucson
Roosevelt National Forest Service / Phoenix / 1991
Royce Asset Management Corporation / Phoenix / 1992
Safford Middle School / Tucson / 1999
Saguaro Vista Shopping Center / Tucson
Santa Cruz School / Elloy
Scottsdale Administration Bldg. & Warehouse / Scottsdale
Scottsdale Girls Club / Scottsdale
Scottsdale Water & Sewer Warehouse / Scottsdale
Scottsdale School District / Phoenix
Show Low Elementary School / Show Low
Show Low High School Auditorium / Show Low
Sierra Vista Shopping Center / Tucson / 1985
Skaggs Drugs / Phoenix
Sky Harbor Airport – Terminal 4 / Phoenix / 1990
Smith's Warehouse / Phoenix / 1991
Smith's Warehouse / Tempe / 1991
Smitty's Restaurant / Phoenix
South Division Expansion / Phoenix / 25,000 sq. ft. / 1994
South Mountain High School IMC / Phoenix
South Phoenix Adult Center / Phoenix
Sun Pontiac GMC / Scottsdale / 1999
Sunnyside Junior High School / Phoenix
SW Airlines Maintenance Facility / Phoenix / 1992
Tempe Elementary School District Library / Tempe
Tempe Police Station / Tempe
TRW Central Laboratory / Queen Creek / 16,650 sq. ft. / 1993
TRW Central Warehouse / Queen Creek / 13,985 sq. ft. / 1993
TRW Maintenance Building & Bldg. #10 / Queen Creek / 1993
Tucson High School / Tucson / 1994
Tucson International Airport / Tucson / 1984
U S Post Office / Phoenix / 1986
Valley Bank / Nogales / 1991
Valley Chamber of Commerce / Phoenix / 1993
Valley National Bank / Avondale
Valley National Bank / Phoenix
Village Plaza North / Phoenix
West Core Shops / Phoenix
Western Savings & Loan Association / Sun City
Wildlife Headquarters Complex / Ajo
William Field Business Park / Chandler
CALIFORNIA
123 Mission Building / San Francisco / 1986
Alesia Parkway Fazios Center / Mission Viejo
American Savings / Oakland
Anaheim Mall / Anaheim
Aquarius Pools / Sacramento
Armory Building / Marysville / 1985
Bagabond Hill House / Bakersfield
Bechtel Building / San Francisco / 1986
Beckman Instrument / Brea
Brea Post Office / Brea
CA Dept. of Corrections – Blythe Prison / Blythe / 1993
CA Dept. of Corrections – LA County Jail / Los Angeles / 1994
California DOT Sound Wall Barriers / San Diego / 1988
California Highway Patrol Office / Ventura
Calleguas Municipal Water District / Thousand Oaks / 1995
Camarillo Civic Center / Camarillo
Chambers Square Shopping Center / Aurora
Chico State University / Chico
Claremont Hotel / Richmond
Control Tower – Ontario Intl. Airport / Ontario / 1987
Cutter Building / Emeryville / 1986
Dental Clinic – North Weapons Center / China Lake
Depotech / San Diego / 1995
Disneyland Hotel / Anaheim
Diversified Development Company / Newport Beach
Dreyers Ice Cream Corporate Office / Los Angeles / 1993El
Segundo Golf / Valley Crest / El Segundo / 1993
Fazio Skaggs Artesia
Fidelity Savings Parking Garage / Oakland
Fidelity Tower / Oakland
First International Bank / Emeryville / 1985
Fremont Professional Building / Fremont
Fullerton City College / Fullerton / 1987
Gannett – Outdoor Building / Los Angeles / 1987
Gayway Plaza / Newport Beach
General Motors Truck Service Center / Oakland
Glendale Financial Square / Glendale
Gold Circle Store / San Jose
Hill Canyon Waste/Water Treatment Facility / Hill Canyon
Honda Motor Company / Stockton
Honda Motor Plant / Madera / 1987
Independence High School / San Jose
Jereb Elementary / San Diego
Joy Bright Mandock School / La Mesa
Junipero Sierra Junior High School / La Mesa
Kimmer Construction / Sacramento
L.D.S. Church / Mountain View
L.D.S. Church / Palo Alto
La Jolla High School / La Jolla
Lockheed Building #157 / Santa Clara / 1986
Long Beach Water Treatment Plant / Long Beach / 1996
Los Angeles County Jail / Los Angeles / 1993
Luckys Store Plus Shops / California
Macy's Westwood / West Los Angeles / 1996
Marine Corps Naval Exchange Addition / Camp Pendleton
Marriott Hotel Parking Garage / Santa Clara
Mesa Shopping Center / San Diego
Moronigo Indian Community Center / San Bernardino
Moscone Convention Center / San Francisco
Neighborhood Facilities Building / Hoopa
Newport Plaza Fashion Island / Newport Beach
Normandy Tower / Los Angeles
Olympus Hotel / Palm Springs / 1995
Pacifican / Santa Monica
Pasadena City Hall / Pasadena / 1987
Plaza Camino Building / Carlsbad
Portland Cement Company / Mojave / 1995
Robinson's Store / Thousand Oaks
Sacramento County Prison / Sacramento / 1986
Saddleback College / Mission Viejo
San Diego Gas and Electric – Mission Control Center / San Diego
San Diego State University / San Diego / 1994
Santa Clara County / State Highway Medians / Santa Clara
Save-On Drugs Store / Simi Valley
Second Street Square / San Francisco / 1986
Shilo Inn Entryway / Pomona / 1994
Thousand Oaks Post Office / Thousand Oaks
TRW Bldg. D-1 / Covina / 1984
Vista Way Village / Oceanside / 1995
Waltbrens Drugs / San Francisco
Watkins-Johnson Company / Santa Clara
Westminster Shopping Mall / Westminster
Westmont Plaza / Rolling Hills Estates

COLORADO
Arapaho East Shopping Center / Denver
Arapaho Indian Center / Boulder
Blessed Sacrament Church / Denver
Broomfield Plaza / Broomfield
Complex Tooling – Twin Lakes Development / Boulder
Craddock Development – Union Plaza / Boulder
El Dorado Savings / Denver
Federal Department of Wildlife / Durango
Flat Irons Warehouse / Boulder
Hi Performance Car Wash / Craig
King Soopers / Denver
McDay Distributing Company / Greeley
Mesa Verde Pottery / Cortez
Miller Beer Distribution Center / Denver
Pavillion Towers / Denver
Premysis Real Estate / Golden / 1994
Pride Structure – Arapahoe East Phase II / Denver
SAE Building / Boulder
Sakura Square / Denver
Sitronix / Broomfield
St. Elizabeth's Church / Denver
Steel Park Office Building / Denver
University of Colorado Credit Union / Englewood
Valley Plaza / Parker / 1987
West High School / Denver

CONNECTICUT
Jacks Chevy & Olds Mobile / Colchester / 1987
McKesson Drug Distribution Center / Rocky Hill / 1986
Pequonnock Apartments / Bridgeport / 1987
Stamford Towers / Stamford
Yale Arts & Arch Building / New Haven / 4,125 sq. ft. / 1994

FLORIDA
Bank Building Corporation / Stuart
Brickel Bay Project / Miami / 1984
Colonial Sales Company Building / Orlando
Cypress Creek Country Club / Boynton Beach / 1991
East Pasco Courthouse / Dade City
Gulf Power Company – Smith Plant / Panama City / 1987
J.C. Penney Store / Plantation
K-Mart Store / Melbourne
Reservvo Project / Belle Glade / 1987
Seventh Day Adventist Church / Naples / 1987

GEORGIA
AT & T Equipment Building / Marietta
Caterpillar Parts Depot / Atlanta
Central Telephone Company / Baldwin
Federal Employee Credit Union / Atlanta
First National Bank / Albany
Hall County Stadium / Gainesville
Hartford Insurance Building / Atlanta
Medical Center of Middle Georgia / Macon
Oakwood Elementary School / Oakwood
Proctor & Gamble / Augusta
Proctor & Gamble / Oglethorpe
Target Store / Atlanta

HAWAI'I
Bank of Hawaii – Downtown Office Tower / Oahu
City Bank Financial Center / Honolulu / 1989
Hana Oli Oli Waste/Water Plant / Oahu
Kailua Multi-Purpose Gym / Kailua
Kailua Waste/Water Treatment Plant / Kailua / 1995
Kalaeo High School / Kalaeo
Kihei Beach Resort / Maui
Maui Market Place Mall / Kahului / 1996
Queens Medical Center – Physicians Office Building / Honolulu / 1990
Waste/Water Treatment Plant / Oahu / 1992

IOWA
Hy-Vee Food Store / Des Moines
Hy-Vee Food Store / Urbandale
Hy-Vee Food Store / Centerville / 1981
Hy-Vee Food Store / Coralville / 1982
Hy-Vee Food Store / Altoona
Hy-Vee Food Store / Keokuk / 1982
Hy-Vee Food Store #1 / Iowa City
Hy-Vee Food Store #2 / Ottumna
Hy-Vee Food Store #2 / Cedar Rapids / 1982
Hy-Vee Food Store #3 / Des Moines / 1982
Iowa DOT / Mason City / 1991
Martin Brothers Company / Waterloo
Medical Supply Warehouse / Altoona / 1981
Norwest Bank / Davenport / 1994
Rolscreen Company Plant / Carrol / 1981
Troxel Enterprises / Des Moines
West Property Partnership Building / West Des Moines

IDAHO
Albertson’s Store / Boise
Atlas Building Supply / Coeur d'Alene
Clearwater Valley Medical Center / Lewiston
Kootenai Electric Company / Hayden Lake
McCall Fish Hatchery / McCall
Sherwin-Williams Paint Company / Twin Falls
Ware Mart Foods / Moscow / 1996

ILLINOIS
1224-28 N. Dearborne / Chicago / 1982
1350 Shore Rd. / Naperville / 1987
1418 N. Lake Shore Drive / Chicago / 1983
1510 Frontenac Rd. / Naperville / 1986
1st AYD Corp / Elgin / 1998
300 W. 23rd Chinatown / Chicago
3200 Highland Parking Garage / Downers Grove / 1986
3777 E. Exchange / Aurora / 1987
3M / Aurora / 1997
445 E. Ohio Building & Parking Garage / Chicago / 1986
528 Walker Rd. / Hinsdale / 1985
A.E. Staley Credit Union / Decatur / 1985
Accurate Transmission / Chicagoland / 1993
Ace Hardware / Crystal Lake / 1982
Advance Lift / Chicagoland / 1993
Aldi’s / Batavia
American Fluorescent / Chicagoland / 1993
American Hotel Register / Vernon Hills / 1997
Amhurst Industrial Park / Waukegan / 1996
AMLI Parkway Industrial Center / Crystal Lake / 1996
Area 5 Police Headquarters / Chicago
Atkins Warehouse / Champaign / 1998
Avanti / Chicagoland / 1992
Bang & Olafsen / Mt. Prospect / 1982
Bank of Chicago / Chicagoland / 1992
Barber College / Aurora
Batavia Industrial Center, Batavia / 1998
Baxter Health Care / Chicagoland / 1992
Belmont & Central Parking Garage / Chicago
Belvidere Chrysler / Belvidere / 1992
Bensenville Distribution Center / Bensenville / 1986
Big Botl Company / Bloomingdale / 1996
Bi-Link / Bloomingdale / 1997
Bohler Brothers / Wood Dale / 1985
Bolingbrook Building #2 / Bolingbrook / 1998
Bolingbrook Town Center / Bolingbrook
Bridgestone/Firestone Tire Store / Woodridge / 1997
Buckley's Grocery / Aurora
Builders Square / Chicagoland / 1992
Butler-McDonald / Naperville / 1987
Cablenet / Mt. Prospect / 1982
Cadillac Plastics / Naperville / 1997
Calhan and Associates, Inc. / Geneva
Candles / Batavia / 1995
Canon / Chicagoland / 1993
Cantera K-3 / Warrenville / 1996
Cap-Snap / Chicagoland / 1993
Car Quest Distributors / Romeoville / 1995
Carlow / Bolingbrook / 1997
Carol Point Phase 1 & 2 / Carol Stream / 1991
Catellus-Gillette / Romeoville / 1998
Caterpillar Tractor Building / East Peoria
Cellular One / Springfield / 1994
Center Street Square / Grayslake / 12,750 sq. ft. / 1993
CEPI / Bolingbrook / 1997
Champaign Transportation / Northlake / 1997
Chem-Tool Building / Crystal Lake
Chevy Chase Industrial Park – Lots 3 & 4 / Buffalo / 1987
Chicago Health Club – Interior Ceilings / Matteson
Chicago Specialty / Wheeling / 1987
Chicago Tribune / Chicago / 1994
Chrysler Dealership / Chicagoland / 1994
Ciba-Geigy / Buffalo Grove / 1986
Circuit City / Chicagoland / 1993
Clifford Jacobs Industrial Complex / Champaign
Cobe Laboratories / Burr Ridge
College Hills Mall / Bloomington
Colonial Hospital Supply / Lake Zurich / 1987
Comark / Chicagoland / 1992
Commarco Apartments / Chicago / 1990
Commonwealth Edison / Chicagoland / 1991 & 1993
Computer Discount Center / Chicagoland / 1993
Computer Service Software / Addison / 1987
Continental Tire / Naperville / 1997
Corporate Crossing #1 & #2 / Bolingbrook / 1995
Corporate Crossing #3 / Bolingbrook / 80,000 sq. ft. / 1995
Corproetum / Lisle / 1986
Courtesy Corp / Buffalo Grove / 1995
Courtesy Corporation III / Buffalo Grove / 1997
Crossroads #6 / Bolingbrook / 1996
Danielson Foods / Chicagoland / 1993
Dart Prairie Point Corporation / Naperville / 1997
Dean Foods Company / Belvedere
Deltak / Naperville / 1983
Depaul University / Chicago / 1994
Design Automotive Group / Lincolnshire / 1997
Dopaco / St. Charles / 1996
Doral Plaza / Chicago
MARYLAND
Harbor Tunnel Freeway Bridge Parapet / Baltimore
Maryland DOT – Interstate 495 / Silver Springs / 1995
MD Dept. of Toll Facilities – Bridge Piers / Baltimore
Montrose Office Building / Rockville

MASSACHUSETTS
Digital Marine / Astor
Waste/Water Treatment Plant / Medway

MICHIGAN
1000 Town Center Parking Garage / Detroit / 1989
5000 Town Center / Southfield / 75,000 sq. ft. / 1996
Aerospace Ground Support Building / Sefrige A.F.B.
American Pizza Café / Rochester / 1994
Blissfield Community School / Blissfield
Board of Power and Light Building / Lansing
Camp Ojibway / Ontanagan / 1987
Caro Municipal Building / Caro
City Airport Extension / Lansing
City of South Lyon / South Lyon
Clark Equipment / Battlecreek
Commercial Design Associates / Roseville
denniston Cinema / French Township / 1987
Detroit Edison / Detroit / 1987
Detroit Waste/Water Plant / Detroit / 1984
First National Bank / Marquette
Ford Motor Company / Utica / 1987
Forth Street Presbyterian Church / Detroit / 1985
Fox Theatre Parking Garage / Detroit / 1996
Grand Rapids Flood Wall / Grand Rapids / 1998
Hercules Machine Tool & Dye Building / Warren / 1986
Housing for Elderly / New Baltimore
Hudson Distributors / Warren / 1998
Huntington Woods Parks & Rec. Dept. / Huntington Woods / 1985
Huron Cement Silos / Detroit / 1987
Interstate Alarm Building / Pontiac
J.C. Penney Store / Novi
K-Mart / Troy / 1986
Lear Seigler Building / Flint / 1985
Little Caesar’s Italian Kitchen / Roseville / 1994
Little Caesar’s Italian Kitchen / Sylvan Lake / 1994
Michelin Tire Company / New Bedford Township
Midland Hospital / Midland / 1986
Moore Park Pool / Lansing
Mt. Clemens Air National Guard / Mt. Clemens
Niles Sewage Treatment Plant / Niles
Nissan Motors Plant / Mansfield / 1986
O.C.C. Parking Structure / Royal Oak
Oakland C.C. Southfield Campus / Detroit
Perry Drug Store / Utica
Prudential Insurance Building & Garage / Pontiac / 1984
Prudential Town Center / Detroit / 1992
Psychiatric Center of Michigan / New Baltimore / 1988
R & R Building / Southfield / 1984
R.L. Polk Building / Detroit
Rex Environmental / Detroit / 1986
Saginaw Township Fire Station / Saginaw
Seneca Middle School / Clinton Township / 1994
Shop & Park / Detroit
St. George Syriases Church / Clinton Township
St. Joseph Mercy Hospital / Pontiac
SugarTree Shopping Center / Detroit / 1985
Summerset Mall / Dearborn / 1986
Taylor Racquet Time / Taylor
The Big "M" Building / Detroit
Thomas Township Fire Station #1 / Saginaw
Triangle Excavating Company / Pontiac
U.S. Post Office Building / Sterling Heights

MINNESOTA
3 M Corporate Buildings / Hutchinson / 1986
Anoka Public School / Blaine
Apple Valley Police Department / Apple Valley / 1993
Aurora State Bank / Aurora
Construction Specialties / Erskine
Deer River High Gymnasium / Deer River
Elk River Plaza Shopping Center / Elk River / 1985
Federal Express Building / Minneapolis / 1987
Fergus Falls Waste/Water Plant / Fergus Falls / 1985
General Warehouse / Rochester
Herbergers Store / Willmar
Hoffert Motor Company / East Grand Forks
Hy-Vee Food Store / Rochester
Iron Removal Plant / New Brighton
Jefferson Office Plaza / St. Paul
Life in Christ Lutheran Church / Albertville
Montgomery Ward Store / Alexandria
Northern States Power Co. – Rice Street Service Station / St. Paul / 1994
Sander & Company / Minneapolis
Scherer Brothers Lumber / Minneapolis / 1985
Scott County Maintenance Shop / Scott County / 1986
State of MN – Concrete Bridge & Pier / 1986
Swift Packing Company / Worthington
Target Store / Eagan
Third Northwestern Bank / Minneapolis
Valley Baptist Church / Golden Valley
Viking Plaza / Alexandria
Water Plant Pump House / Minnetrista
White Castle / (Various Locations)
Whitemeph Shopping Center / Alex

MISSISSIPPI
Snap-On Tools – Olive Branch Ind. Park / 1987

MISSOURI
AT&T – Tracor Base Building / Kansas City / 51,000 sq. ft. / 1995
Best Buy / Independence / 1994
Blue Ridge Mall / Kansas City
Citizens Electric / Perryville / 1993
Hy-Vee Food Store / Trenton
Jefferson College – Arts & Science Building / Farmington / 1987
Mark Twain Bank / Harvester
Princeton R5 School / Princeton / 1983
Proctor & Gamble / Cape Girardeau
Venture Store / Bridgeton / 1984
Venture Store / St. Joseph / 1985
Venture Store – North Park Mall / Joplin / 1986
White Castle Restaurants / (Various Locations)

MONTANA
Albertson's Store / Bozeman
Albertson's Store / Billings
Bruce Anderson Company / Bozeman
City of Glendale / Glendale
Dr. J.B. Schmitt / Bozeman
Kalispell City Hall / Kalispell
Lewistown Clay Incorporated / Lewistown
Sigma Chi / Bozeman
NEBRASKA
Cervantes Convention Center / Lincoln / 1991
Hinckey Dinke Store / Bellevue
National American Insurance / Omaha
Pappillion Creek Waste/Water Plant / Lincoln
Scottsbluff National Monument / Scottsbluff / 1990

NEVADA
Caesars Palace Parking Garage / Las Vegas / 1989
First National Bank / Reno
Overseas Mailing Corporation / Carson City
The Point Office Buildings / Reno / 1998

NEW JERSEY
Hertz Truck Rental / Parsippany
Holiday Inn Casino / Atlantic City
Inlet Towers Project / Atlantic City / 1985
J.C. Penney Addition / New Brunswick / 1987
Ledgerwood Mall / Ledgerwood / 1990
Middle School / Atlantic City
Municipal Building / Fairfield
New Jersey Bell Telephone / Englewood
New Jersey Turnpike Authority / Elizabeth
Nissan Motor Company Warehouse / Bridgewater / 1987
Ocean View Tower Apartments / Long Branch
Pathmark Warehouse / Edison
Princeton Medical Center / Princeton
Resorts International Parking Garage / Atlantic City
V.J. Pozio and Son, Inc. / Pleasantville
White Castle Restaurants / (Various Locations)

NEW MEXICO
Ampi Cheese Plant / Roswell / 1992
General Mills Plant / Albuquerque / 1992

NEW YORK
8080 Haven Ave. Bldg / New York City / 1985
American Airlines / La Guardia Airport
Flushing Meadows Tennis Center / Flushing Meadows
General Mills / Buffalo / 1982
IBM Building / New York City / 1985
New Rochelle Manufacturing / Pettersson
Tops Distribution Center / Lancaster / 1996
Villa Scalabrin / Syracuse
Wheatfield Housing for the Elderly / Wheatfield

NORTH CAROLINA
1st Union National Bank Building / Charlotte
Proctor & Gamble / Greensboro
Tobacco Barn Mill Complex / Winston Salem
Wayne Community College – Vocational Building / Goldsboro

NORTH DAKOTA
Butles Machine Company / Minot
Columbia Park Towers / Grand Forks
Construction Specialties / Grand Forks
Twin Tower Condominiums / Fargo

OHIO
A.E. Staley Manufacturing Company / Fostoria
Acacia on the Green / Lynnhurst / 1985
Blanchard Valley Hospital / Blanchard
Bleile Supply Company / Norwalk
Buckeye State Park / Columbus / 1991
Center City Building / Dayton
Chrysler – Mopar District Facility / Hudson / 1996
Cincinnati Airport Control Tower / Cincinnati / 1992
Citizens Savings & Loan / Monroe
Citizens Savings Parking Garage / Middleton
City of Canton – Cornerstone Garage / Canton / 1994
City of Wooster / Wooster / 1994
Cleveland Clinic – Gateway Garages I & II / Cleveland / 1995
Cleveland Metroparks / Cleveland / 1994
Columbus Convention Center / Columbus
Columbus Police Academy / Columbus / 1984
Coventry Theater / Cleveland Heights / 1991
Cuyahoga Falls Parking Garage / Cuyahoga Falls / 1992
Dave Wilson Ohio Center / Columbus
Dayton Psychiatric Forensic Hospital / Dayton
Dennison University / Ravinville
East 55th Pier / Cleveland / 1987
East Muskingum School / New Concord
East Ohio Gas / Cleveland / 1992
Edgewater Yacht Club / Cleveland / 1987
Edgewater Yacht Club / Cleveland / 1992
Edgewater Yacht Club / Cleveland / 1995
Fairview Lanes / Fairview Park
First Educators Investment Corporation / Youngstown / 1994
Flower Hospital / Sylvania
Fraft Foods / Cincinnati
Gareway Garage / Cleveland / 1993
Good Samaritan Hospital / Dayton / 1991
Hamilton House Apartments / Mayfield Heights / 1994
Hillcrest Hospital / Cleveland / 1992
Hopkins International Airport – Control Tower / Cleveland / 1986
Kaufman's Department Store / Copley / 1994
Kaufman's Department Store / Akron-Brick / 1992
Kitchler Lighting / Cleveland / 1992
Lake Loramie Campground / Minster / 1991
Lorain County C.C. – Fieldhouse / Cleveland
Louisville Middle School / Louisville / 1992
Marathon Oil Company / Findlay
Marriott, Inc. / Cincinnati
Maumee State Park / Toledo / 1992
McKinley Monument / Cleveland / 1992
McKennley Memorial / Canton / 1993
Mentor Library / Madison / 1992
Metro Health Hospital / Cleveland / 1994
Middletown Hospital Parking Garage / Middletown
Mohican State Park Shrine / West Lafayette / 1991
North Point Church / Toledo
Ohio Building / Akron
Ohio Power / Canton / 1993
Ohio State University Stadium / Columbus / 1988
Ohio Turnpike Commission / Ravenna / 1984
Ohio Turnpike Commission / Elmore / 1991
Osborn, Inc. / Mentor
Oxford Oil Company / Zanesville / 1984
Playhouse Square Parking Garage / Cleveland / 1988
Proctor & Gamble – Winton Hill Technical Center / Cincinnati
Ravina Police Station / Ravenna
Renaissance Parking Garage / Cleveland / 1990
Rising Star Baptist Church / Youngstown / 1995
Salvation Army / Cuyahoga Falls / 1992
Scioto Valve and Fitting / Westville
Sea World / Aurora / 1984
Six Industries / Springfield
Standard Federal / Cincinnati
Stevenson High School / Prairie View / 1992
Thompson Newspaper / Cincinnati / 1992
Tower Plaza / Lyndhurst / 1993
University Cedar Medical Building / Madison / 1987
University of Cincinnati Stadium / Cincinnati / 1992
Video Music Mart / Mentor / 1993
Walsh Jesuit High School / Stow / 1987 & 1993
Waterwood Estates / Vermillion / 1993
Wellnit – Windsor Recreational Center / Columbus / 1993
White Castle Restaurants / (Various Locations)
York Square / Parma Heights / 1990
WASHINGTON
AGC Building / Seattle / 1997
Anne Fisher Design / Seattle
BEQBQQ Quarters – U.S. Coast Guard / Seattle
Boeing Computer Service Building / Seattle
Brown Bear Car Wash / Tacoma
Cascade High School / Vancouver
Cashmere High School / Cashmere
Children's Orthopedic Hospital / Seattle
Civics Field / Port Angeles
Clallum County Courthouse / Port Angeles
Clark County Multi-Service Center / Vancouver
Creston Nelson Receiving Substation / Seattle
Eatonton Elementary School / Eatonton
Elma School / Elma
Everett Waste/Water Department / Everett / 1998

RHODE ISLAND
Maine's Shopping Center / Wakefield / 1987
Midas Muffler / Warwick / 1987
Midas Muffler / Wakefield / 1987
Midland MDA / Warwick / 1987
The Maples Condominiums / Westerly / 1987
Vacho RV Country / Smithfield / 1987
Wakefield Auto Parts / Wakefield / 1987

SOUTH CAROLINA
Cincinnati Milacon Building / Greenwood
Greenwood Mills / Greenwood
K-Mart / Greer
Montgomery Ward / Myrtle Beach / 1994
St. Andrew's Baptist Church / Columbia
Water Treatment Systems – Phase IB / Charleston / 1985

SOUTH DAKOTA
Tel Drug Building / Sioux Falls / 1995

TENNESSEE
Famco Engineering / Knoxville
Madison Campus Elementary / Madison
Mental Health Center / McMinnville
Oskosh-By-Gosh, Inc. / Celina / 1992
Proctor & Gamble / Jackson
State Technical Institute / Knoxville / 1986
State Technical Institute – Pellissippi / Knoxville / 1985
Tennessee Valley Authority / Chattanooga / 1991
Tennessee Valley Authority / Nashville / 1984
Tulip Wood Apartments / Centerville
U.S. Tobacco Company / Nashville
University of TN – Art & Architecture Building / Knoxville
White Castle Restaurants / (Various Locations)
Wheatua Container / Cleveland

UTAH
Albertson's Store / Salt Lake City
APartment Building, C Street / Salt Lake City
BYU Missionary Training Center / Provo / 1993
Conformiing Storage Facility / Ogden / 1994
CRS Specialties / Bountiful
D.O.T. Building / Ogden
Deseret Dairy / Salt Lake City / 1998
L.D.S. Church / Lindon
Miller High Life Distribution Center / Salt Lake City
Mountain Bell Switching Station / Kimball Junction
Physicians Building – LDS Hospital / Salt Lake City / 1990
Police Athletic Gymnasium / Salt Lake City
Wheeler Machinery Building / Salt Lake City
Witt Cleaners / Brigham City
Zion National Park / Springdale / 1996

VIRGINIA
American Press / Gordensville
University of VA Medical Center / Charlottesville
Upper Ocaquian Waste/Water Plant / Manassas
VA Dept. of Highways – Noise Abatement Wall / Colonial Heights
Welch City Building / Christianburg / 1983
Williamsburg Packing Corporation / Williamsburg

TEXAS
Booker T. Washington Terrace / Austin
Champion Forest Center / Houston
Change House (3) / Port of Houston
City Library / Beaumont
Crossroads Center / Conroe
Cypress Bank / Houston
Dallas-Ft. Worth Airport Control Towers / DFW Airport / 1992
Eaton Auto Center / Carrollton
Exxon Car Care / Houston
Exxon Office Building / Baytown
Firestone Store / Conroe
Gulf Gate Mall / Houston
Hagerman National Game & Wildlife Research / Pottsboro
Houston Wire & Cable / Houston
Houston-Galveston Project / Waller
Jack-in-the-Box / Conroe
M.D. Anderson Outpatient Clinic / Houston
Moody Ramblin Building / Houston
Parks & Wildlife Building / Austin
Restoration House Project / Austin
SafeWay Division Office / Houston
Spring Branch Hospital / Houston
Texas Department of Corrections / Dayton / 1989
Texas Department of Corrections / Marlin / 1989
Texas Department of Corrections / Otay
Wilson Stationary / Houston
Wyatts Cafeteria / Conroe

OKLAHOMA
Bricktown Parking Garage / Oklahoma City / 40,000 sq. ft. / 1999
Maps Ballpark / Oklahoma City / 1997
McKesson Drug Store / Oklahoma City / 1988
Mercury Marine / Stillwater
Venture Store / Oklahoma City / 1983

OREGON
Medford City Hall / Medford / 1997
Tillamook General Hospital / Tillamook
U.S. Employees Credit Union / Milwaukee

PENNSYLVANIA
Braton Building / Wilkes-Barre
Cabrini College / Media / 1998
Evangelical Community Hospital / Lewisburg / 1986
Giant Foods / Harrisburg
Giant Foods / Hummelstown
Giant Foods / Lancaster
Giant Foods Office Building / Carlisle
Hilton Hotel / Northeast Philadelphia
Housing for the Elderly / Sharpsburg
K-Mart / Pottstown
LeBannon Valley National Bank / Palmyra
PA Bell Telephone / Philadelphia
Rodale Press / Emmaus
Septa Heavy Maintenance Facility / Philadelphia / 1984
South Street Seaport Museum / Philadelphia
St. Marks Church / Redding
Thornhill Distribution Center / Pittsburgh / 1997
Valley Forge Hilton / King of Prussia / 1983
W.R. Rooney Company / Pittsburgh
West Park II / Leesport / 1998
Westchester Bell Telephone

RHODE ISLAND
Maine's Shopping Center / Wakefield / 1987
Midas Muffler / Warwick / 1987
Midas Muffler / Wakefield / 1987
Midland MDA / Warwick / 1987
The Maples Condominiums / Westerly / 1987
Vacho RV Country / Smithfield / 1987
Wakefield Auto Parts / Wakefield / 1987

SOUTH CAROLINA
Cincinnati Milacon Building / Greenwood
Greenwood Mills / Greenwood
K-Mart / Greer
Montgomery Ward / Myrtle Beach / 1994
St. Andrew's Baptist Church / Columbia
Water Treatment Systems – Phase IB / Charleston / 1985

SOUTH DAKOTA
Tel Drug Building / Sioux Falls / 1995

TENNESSEE
Famco Engineering / Knoxville
Madison Campus Elementary / Madison
Mental Health Center / McMinnville
Oskosh-By-Gosh, Inc. / Celina / 1992
Proctor & Gamble / Jackson
State Technical Institute / Knoxville / 1986
State Technical Institute – Pellissippi / Knoxville / 1985
Tennessee Valley Authority / Chattanooga / 1991
Tennessee Valley Authority / Nashville / 1984
Tulip Wood Apartments / Centerville
U.S. Tobacco Company / Nashville
University of TN – Art & Architecture Building / Knoxville
White Castle Restaurants / (Various Locations)
Westuaco Container / Cleveland

TEXAS
Booker T. Washington Terrace / Austin
Champion Forest Center / Houston
Change House (3) / Port of Houston
City Library / Beaumont
Crossroads Center / Conroe
Cypress Bank / Houston
Dallas-Ft. Worth Airport Control Towers / DFW Airport / 1992
Eaton Auto Center / Carrollton
Exxon Car Care / Houston
Exxon Office Building / Baytown
Firestone Store / Conroe
Gulf Gate Mall / Houston
Hagerman National Game & Wildlife Research / Pottsboro
Houston Wire & Cable / Houston
Houston-Galveston Project / Waller
Jack-in-the-Box / Conroe
M.D. Anderson Outpatient Clinic / Houston
Moody Ramblin Building / Houston
Parks & Wildlife Building / Austin
Restoration House Project / Austin
SafeWay Division Office / Houston
Spring Branch Hospital / Houston
Texas Department of Corrections / Dayton / 1989
Texas Department of Corrections / Marlin / 1989
Texas Department of Corrections / Otay
Wilson Stationary / Houston
Wyatts Cafeteria / Conroe

UTAH
Albertson's Store / Salt Lake City
Apartment Building, C Street / Salt Lake City
BYU Missionary Training Center / Provo / 1993
Conformioing Storage Facility / Ogden / 1994
CRS Specialties / Bountiful
D.O.T. Building / Ogden
Deseret Dairy / Salt Lake City / 1998
L.D.S. Church / Lindon
Miller High Life Distribution Center / Salt Lake City
Mountain Bell Switching Station / Kimball Junction
Physicians Building – LDS Hospital / Salt Lake City / 1990
Police Athletic Gymnasium / Salt Lake City
Wheeler Machinery Building / Salt Lake City
Witt Cleaners / Brigham City
Zion National Park / Springdale / 1996

VIRGINIA
American Press / Gordensville
University of VA Medical Center / Charlottesville
Upper Ocaquian Waste/Water Plant / Manassas
VA Dept. of Highways – Noise Abatement Wall / Colonial Heights
Welch City Building / Christianburg / 1983
Williamsburg Packing Corporation / Williamsburg

WASHINGTON
AGC Building / Seattle / 1997
Anne Fisher Design / Seattle
BEQBQQ Quarters – U.S. Coast Guard / Seattle
Boeing Computer Service Building / Seattle
Brown Bear Car Wash / Tacoma
Cascade High School / Vancouver
Cashmere High School / Cashmere
Children's Orthopedic Hospital / Seattle
Civics Field / Port Angeles
Clallum County Courthouse / Port Angeles
Clallum County Courthouse / Port Angeles
Clark County Multi-Service Center / Vancouver
Creston Nelson Receiving Substation / Seattle
Eatonton Elementary School / Eatonton
Elma School / Elma
Everett Waste/Water Department / Everett / 1998
Everett Waste/Water Treatment / Marysville / 1990
Gateway Hotel / Spokane
Gateway Tower Parking Garage / Seattle / 1990
General Telephone Buildings / Woodinville
General Telephone Building / Pullman
Grand Coulee Dam – Third Power House / Grand Coulee
Grand Coulee High School / Grand Coulee
Greenacres School / Greenacres
Harborview Medical Center Addition / Seattle
Inchelium School / Inchelium
Interstate 90 Pedestrian Overpass / Spokane
Interstate 90 Snow Shed / Snoqualmie Pass
Jackson Park School / Bremerton
Jafco Corporation Headquarters / Bellevue
Keytronics Corporation Building / Newport
Lewis County Youth Service Center / Chehalis
Lincoln Savings Bank / Cheney
Montgomery Ward Store – Franklin Park Mall / Spokane
Multi-Service Center Building / Aberdeen
Neal Bay High School / Neal Bay
Neighborhood Facility / Marietta
Northwest Medical Center / Seattle
Northtown Mall / Spokane
Number 1223 Spring St. Condominiums / Seattle
Pacific Northwest Bell Building / Tacoma
Port Orchard School / Port Orchard
Radio Shack / Spokane
Seattle First National Building / Sequim
Spanaway High School / Spanaway
Speidel Building / East Wenatchee
Squads OPS #1 / Spokane / 16,250 sq. ft. / 1998
St. Vincent DePaul Society / Seattle
Stadium High School Science Building / Tacoma
Stevenson High School / Stevenson
Subcrew Mess Hall – U.S. Navy / Bangor
Tacoma General Hospital Parking Garage / Tacoma
Tiberline High School / Lacey / 1994
Trans Atlas Professional Building / Spokane
Trident Naval Base / Bangor
Union Station / Tacoma / 1996
Virginia Mason Hospital / Seattle
Visitors Information Center / Olympia
W.W. Granger Warehouse / Spokane
WA State Traffic Management Building / Seattle
Wahlucke High School / Mattawa
WA DOT – Broadway Overpass / Spokane / 1987
WA DOT – Snake River Bridge & Approaches / Clarkston
WA DOT – South Wenatchee Bridge Exchange / Wenatchee
Western Airlines – Sea-Tac Airport / Seattle
Winthrop National Fish Hatchery / Winthrop

WASHINGTON DC
Delta Towers

WEST VIRGINIA
Agsten Manor / Charleston
Architectural Interior Products / Vienna
C & P Telephone / Sisterville
Green Valley Bridge / St. Albans / 1993
Lincoln County School District / Hamlin
Mingo Logan Coal Company / Wharncliffe / 1993
New Manchester Center / New Manchester / 1986
Operating Engineers / Huntington
Sissonville Telephone Company / Sissonville
West Virginia State Penetentiary / Moundsville / 1986
Williamson Towers / Williamson

WISCONSIN
Antigo Waste/Water Treatment Plant / Antigo
Appleton Electric Building / Racine
Blood Center of SE Wisconsin / Milwaukee / 1984
Debyc's Incorporated / Rhinelander
First Federal Savings & Loan / Viroqua
Frito Lay Company / Rhinelander / 1991
Holiday Inn Southwest / Green Bay
Housing for the Elderly / Berlin
Iris USA Inc. / Pleasant Prairie / 1996
Kohler Company / Kohler
Kohl's Corporate Headquarters / Menomonee Falls / 1996
Lakeview Business Park / Kenosha / 1990
Madison Metro Sewage District / Madison / 1993
Manitowac Mausoleum / East DePere
Marathon County Nursing Home / Wausau / 1986
Marc's Big Boy Restaurant / Milwaukee
Milwaukee Area Tech College / Milwaukee
Paco Corporate Building / Appleton
Seton Power Professional Building / Milwaukee
Sheboygan County Highway Department / Sheboygan / 1987
Snap-On Tools Building / Kenosha / 1987
Sturgeon Bay Waste/Water Plant / Sturgeon Bay
The Inside Story / Rhinelander / 1983
Walworth County Waste/Water Plant / Delavan
Wausau Parking Ramp #2 / Wausau / 1982
Wausau Tile / Wausau / 1988 -1999
W/F Phone Company – Vehicle Storage Garage / Sturgeon Bay

WYOMING
Jim Bridger Construction / Point of Rocks / 1991
McCormick Junior High School / Cheyenne

CANADA

ALBERTA
Zellers-At-Shawnessy / Calgary / 1996

BRITISH COLUMBIA
Terrace Court House / Terrace
Turf Club Building / Vancouver

NEW BRUNSWICK
Barnhill School / St. John
United Sports Shop / Fredrickton

ONTARIO
Apartment Complex – Ontatio Housing Corporation / Islington
Bell Canada / Sudbury
Dustbane Enterprises Limited / Ottawa
Fairway Towers Apartments / Sarnia
Holstein-Friesian Association of Canada / Brantford
Jamco Limited / Ottawa
Lawrence & Orton Street Apartments / Oakville
Ont. Housing Corp.-Swimming Pool Bldg. / Toronto
Ontario Housing Corporation / Scarborough
Ontario Housing Corporation / Newmarket
Ottawa Country Club / Ottawa
Proctor & Gable / Belleville
Senior Citizens Apartments – Ontario Housing Corporation / Hamilton
Tiger Brandknitting Building / Cambridge

OVER SEAS
Ozan AFB – Runway Camoflauge / Korea / 1984
Town House Shopping Center / Chalan Kanoa, Saipan / 1983
Eastern Fleet Headquarters / Jubail, Saudi Arabia / 1985
R-4 Sports Club / Riyadh, Saudi Arabia / 1985
CANYON TONE STAIN
TEN (10)-YEAR LIMITED PRODUCT
WARRANTY EXPLANATION

The enclosed properly completed Warranty Request Form is required by UNITED COATINGS in order for the Ten (10)-Year CANYON TONE STAIN Product Warranty to be issued:

1. The Warranty:
   UNITED COATINGS warrants to the Building Owner that for a period of 10 years from date of completion, CANYON TONE STAIN applied to any area of sound, above grade concrete, sandblasted fiberglass reinforced concrete, brick, stone or stucco will perform as follows:

   1. CANYON TONE STAIN will act as a water-repellent for the warranty period.
   2. CANYON TONE STAIN will not peel or flake for the full warranty period.
   3. CANYON TONE STAIN will have excellent color retention and uniformity for the full warranty period.

This warranty is not to be used for any other purpose unless specifically approved in writing by an officer of UNITED COATINGS.

2. Warranty Request Form:

   A. When the job is complete, the coating applicator must submit the Warranty Request Form to UNITED Headquarters for issuance of the Warranty.

   B. The properly complete Warranty Request Form by the Applicator certifies the application to be in accordance with UNITED'S current published application instructions.
WARRANTY REQUEST FORM FOR 
TEN (10)-YEAR CANYON TONE STAIN 
LIMITED PRODUCT WARRANTY PROGRAM

1. Name of Project: 
   Address: 
   City: State: Zip: 

2. Name of Applicator: 
   Address: 
   City: State: Zip: Phone: 

3. Name of Architect: 
   Address: 
   City: State: Zip: Phone: 

4. Owner of Building: 
   Address: 
   City: State: Zip: Phone: 

5. Type of Substrate: 

6. Surface Preparation: 

7. Primary Color Used: Gallons Used: Area Coated: No. of Coats 

8. Secondary Color Used: Gallons Used: Area Coated: No. of Coats 

9. Additional Color(s) Used: Gallons Used: Area Coated: No. of Coats 

10. Method of Application: Type of Equipment: 

11. Date Application Commenced: Date Completed: 

12. Date Printed on CANYON TONE STAIN Application Instructions: 

I hereby certify that the above information is correct and that this coating application is in accordance with UNITED'S current published Technical Data/Application Instructions as stated. I agree to the terms and conditions of UNITED COATINGS’ CANYON TONE STAIN 10-Year Limited Product Warranty which may be issued pursuant to this Warranty Request Form.

Applicator 
(Signature) 

Printed Name
UNITED COATINGS
CANYON TONE STAIN
10-Year Limited Product Warranty

Name of Project

Address	City	State	Zip

Approved Contractor

Address	City	State	Zip

A. UNITED COATINGS warrants to the Building Owner that, for a period of 10 years from date of completion, CANYON TONE STAIN applied to any area of sound, above grade masonry, concrete, sandblasted fiberglass reinforced concrete, brick, stone, or stucco will perform as follows:
1. CANYON TONE STAIN will act as a water-repellent for the full Warranty period.
2. CANYON TONE STAIN will not peel or flake for the full Warranty period.
3. CANYON TONE STAIN will have excellent color retention and uniformity for the full Warranty period.

B. If during the warranty period, any such failure occurs resulting from ordinary weather conditions in any area to which CANYON TONE STAIN has been properly applied, UNITED COATINGS agrees to supply at no charge all UNITED material needed to repair such affected areas.

C. This Warranty is expressly conditioned upon:
1. Applicator's obligation to apply CANYON TONE STAIN in a good and workmanlike manner and in strict accordance with UNITED's current published instructions covering surface preparation, application and precautions.
2. UNITED COATINGS liability to the Owner for any defect, failure, or deficiency which is covered by this Warranty shall be expressly conditioned upon the Owner's obligation to notify UNITED COATINGS within 5 working days of the date that Owner discovers defect. UNITED COATINGS shall then have the right to immediately inspect the defect, and if not given this right, the Warranty shall be terminated.
3. UNITED COATINGS shall not be responsible for repairs made by others who are not authorized to make such repairs.

D. This Warranty does not cover failure due to:
1. Damage to the CANYON TONE STAIN caused by fire, settlement, structural cracks or defects, faulty construction, movement, misuse of structure, or other failure of the structure.
2. Damage to the CANYON TONE STAIN due to natural causes, including but not limited to floods, lightning, hail, windstorms, cyclones, hurricanes, tornadoes, earthquakes, or other extraordinary or unusual events.
3. Improper preparation of the surface.
4. Vandalism, penetration or damage caused by third parties or foreign objects or agents, including plant or animal life.
5. Leaks caused by the effects of wind-driven rain or other severe conditions over a porous substrate.

E. If Coating Applicator fails to make payment to UNITED COATINGS and/or its Distributor, this Warranty shall be void.

F. This Warranty is for the benefit of the initial purchaser, and shall not be transferable or assignable to any other persons, firms or corporations except with the prior express written consent signed by a duly authorized officer of UNITED COATINGS.

G. UNITED COATINGS will not be liable for any direct, indirect, consequential, incidental, special, or general damages of any kind from whatever cause which may arise as the result of deterioration of said coating, except to supply all UNITED COATINGS material in accordance with the Warranty, except to supply all UNITED COATINGS material in accordance with the Warranty. It is expressly understood and agreed that UNITED COATINGS shall in no way be deemed or held to be obligated, liable or accountable upon or under any guarantees or warranties, expressed or implied, including any implied Warranty of merchantability or fitness for a particular use, or otherwise beyond this express Warranty.

H. This Warranty is effective upon receipt of fully executed copy at UNITED COATINGS, E. 19011 Cataldo, Spokane Valley, Washington, 99016, including issue number, and execution by an authorized officer of UNITED COATINGS, the Applicator, and the Owner.

UNITED COATINGS
Spokane Valley, Washington

Approved Contractor

Owner or Owner's Representative

Signature
Title

Signature
Title

Signature
Title

Valid when copy of this warranty, executed by all parties, is on file at UNITED COATINGS’ Warranty Department, Spokane Valley, WA.
CANYON TONE CLEAR
5% Transparent Water-Based Sealer

Technical Data & Application Instructions

PRODUCT DESCRIPTION
CANYON TONE CLEAR, a silicone emulsion with reactive silane, is a deep penetrating concrete/masonry sealer and water-repellent treatment. By chemically locking into the substrate, CANYON TONE CLEAR provides a long term, UV stable protective barrier against the intrusion of moisture and chloride salts. Its microscopic penetration qualities allow a single coat application that imparts a clear, non-yellowing water repellent treatment to concrete and masonry substrates without any noticeable change in color or surface sheen.

CANYON TONE CLEAR incorporates reactive silane and a silicone emulsion into a single product. The silane penetrates deeply into the substrate, chemically linking into the concrete or masonry matrix for permanent moisture, chemical and salt protection. The silicone emulsion bonds tightly to the surface for added water-repellency. This combination is superior to pure silicone, silane or siloxane sealers alone.

CANYON TONE CLEAR is also supplied as a concentrate, which is reduced with water at the jobsite to achieve the desired dilution. Consult separate literature entitled CANYON TONE CLEAR Concentrate Technical Data & Application Instructions for additional information on the concentrated version.

BASIC USES
CANYON TONE CLEAR protects exterior, above-grade vertical and horizontal concrete, masonry, aggregate, brick and stucco surfaces against the effects of water, de-icing chemicals, chloride-ion intrusion, freeze/thaw exposure, spalling, airborne pollution and acid rain. It is used on building exteriors, parking garage floors and ramps, walkways and decks, and other areas where a clear, non-yellowing protective sealer is required. Because CANYON TONE CLEAR is water-based, it can be used safely on interior applications without toxic or solvent odors.

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Content</td>
<td>5% (±.5)</td>
<td>ASTM D5095</td>
</tr>
<tr>
<td>Viscosity</td>
<td>5-15 cps @ 70°F</td>
<td>ASTM D2196</td>
</tr>
<tr>
<td>Weight per Gallon</td>
<td>8.3 lbs (3.8 kg) (±.2)</td>
<td>ASTM D1475</td>
</tr>
<tr>
<td>Dry Time</td>
<td>15 Minutes</td>
<td>ASTM D1640</td>
</tr>
<tr>
<td>Cure Time</td>
<td>1 Hour</td>
<td>ASTM D1640</td>
</tr>
<tr>
<td>Accelerated Weathering</td>
<td>4,400 Hours No Effect</td>
<td>ASTM G53</td>
</tr>
</tbody>
</table>

ADVANTAGES
• Single Coat Application – CANYON TONE CLEAR is applied in a one-coat, surface flooding treatment.
• Single Package – No catalyzation required. Easy application by brush, roller or spray.
• Water-Based – No solvents or solvent odors. Easy cleanup with soap and water. Meets all VOC requirements.
• UV Stable – No discoloration or yellowing with age.
• Retains Natural Appearance – No glaze, gloss or visible sheen on treated surfaces.
• Protects from airborne pollution and acid rain.
• Prevents darkening and discoloration of treated surfaces during periods of rain.
• Protects against freeze/thaw and spalling.
• Protects against efflorescence or migrating salts.
• Can be applied by brush or roller, as well as by airless, conventional or pump sprayer.
• Breathing System – Allows moisture vapor to escape from the building interior.
SURFACE PREPARATION
All surfaces must be structurally sound, clean, dry, and fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. All previous coatings on the substrate must be completely removed, including coatings that are tightly adhered to the surface.

CANYON TONE CLEAR is a deep penetrating sealer. It must be able to penetrate the surface to which it is applied to be effective. Surfaces such as glazed brick, smooth dense brick, natural rock, glass reinforced concrete and smooth dense concrete must be sandblasted or etched prior to application of CANYON TONE CLEAR to allow for maximum penetration.

CANYON TONE CLEAR has a neutral pH, so it will not etch exposed metal or glass surfaces, nor will it harm most ground vegetation.

MIXING INSTRUCTIONS
CANYON TONE CLEAR is supplied in a 5% solids by volume concentration, which is the standard dilution for most applications. If a higher solids dilution is desired for increased water-repellency on porous substrates, consult separate literature entitled CANYON TONE CLEAR Concentrate, which can be diluted to a 14% to 21% active content. Blend 1 part concentrate with 4 parts water to achieve a 14% concentration or 3 parts water to achieve a 21% concentration. Due to the increased water repellency provided by higher active content concentrations, recoatability characteristics are diminished.

APPLICATION INSTRUCTIONS
CANYON TONE CLEAR can be applied by brush, roller, airless or conventional spray, and also by low pressure pump-style sprayers. The most effective application method is by low pressure airless spray (20 psi/137 kPa). The spray gun should have a fan-type nozzle with a maximum orifice size of .035” (.9 mm), and should be held no more than 18” (.5 m) from the surface during application.

On horizontal surface applications, CANYON TONE CLEAR should be uniformly applied to saturate or flood the surface. After approximately 20 minutes, any remaining puddles should be rolled out or mopped up. Vertical applications should be treated from the bottom of the wall upwards. CANYON TONE CLEAR should be uniformly sprayed on the wall to the point where excess solution runs 6” to 8” (15 to 20 cm) below the spray pattern on each pass. Any excessive runs or drips should immediately be rolled into the surface. Care should be taken to complete each wall section entirely before work stoppage. Application should be continuous, maintaining a wet edge to wall joints or corners. CANYON TONE CLEAR should be applied in a single coat application only.

LIMITATIONS & PRECAUTIONS
CANYON TONE CLEAR should not be applied over wet substrates. Proper penetration will not occur if standing water or excessive wetness blocks absorption. However, concrete and masonry wall surfaces can be coated while slightly damp. In locations that are typically hot and arid, it can be beneficial to pre-dampen the wall surface prior to application of CANYON TONE CLEAR. The added moisture will aid in proper penetration and cure of the sealer.

CANYON TONE CLEAR is a waterborne sealer. Care must be taken during storage and shipment to ensure that temperatures do not fall below 32°F (0°C). Do not apply CANYON TONE CLEAR below 50°F (10°C). Cool temperatures and high humidity will retard cure.

CANYON TONE CLEAR is a low viscosity material designed to provide water-repellency without disturbing the natural color or texture of the substrate. It is not designed to waterproof concrete block or other porous substrates under wind driven rain or other severe weather conditions.

CAUTION! Can cause irritation of nose, throat and lungs. Can cause nausea and headache. Prolonged or repeated breathing of vapor or spray mist may be harmful. Use a respirator for protection from vapor or spray mist. Avoid eye and skin contact. Do not take internally. Wash thoroughly after handling and before eating or smoking. Keep container closed when not in use.

For additional information on safety requirements, refer to OSHA guidelines and CANYON TONE CLEAR Material Safety Data Sheet.

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Square Feet/Gallon Estimated Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smooth Concrete</td>
<td>200 to 250 (4.9 to 6.1 m²/l)</td>
</tr>
<tr>
<td>Exposed Aggregate</td>
<td>150 to 200 (3.7 to 4.9 m²/l)</td>
</tr>
<tr>
<td>Masonry</td>
<td>100 to 150 (2.4 to 7.3 m²/l)</td>
</tr>
<tr>
<td>Horizontal Concrete Decks</td>
<td>100 to 150 (2.4 to 7.3 m²/l)</td>
</tr>
</tbody>
</table>

NOTE: The above coverage rates are provided for estimating purposes only. Absorption rates will depend upon the texture and porosity of the substrate. Allow for extra surface area when estimating coverage for fluted, raked, split-face or other textured surfaces.

Distributed by: BEST MATERIALS LLC
Ph: 800-474-7570, 602-272-8128
Email: sales@bestmaterials.com
www.bestmaterials.com

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
CANYON TONE CLEAR CONC.
Transparent Water-Based Sealer Concentrate

Technical Data & Application Instructions

PRODUCT DESCRIPTION
CANYON TONE CLEAR, a silicone emulsion with reactive silane, is a deep penetrating concrete/masonry sealer and water-repellent treatment. By chemically locking into the substrate, CANYON TONE CLEAR provides a long-term, UV stable protective barrier against the intrusion of moisture and chloride salts. Its microscopic penetration qualities allow a single coat application that imparts a clear, non-yellowing water repellent treatment to concrete and masonry substrates without any noticeable change in color or surface sheen.

CANYON TONE CLEAR incorporates reactive silane and a silicone emulsion into a single product. The silane penetrates deeply into the substrate, chemically linking into the concrete or masonry matrix for permanent moisture, chemical and salt protection. The silicone emulsion bonds tightly to the surface for added water-repellency and “beading” ability. This combination is superior to pure silicone, silane or siloxane sealers alone.

CANYON TONE CLEAR CONCENTRATE must be reduced with water at the jobsite to achieve the desired dilution. CANYON TONE CLEAR is also available in a pre-diluted version. Consult separate literature entitled CANYON TONE CLEAR Technical Data & Application Instructions for additional information on the pre-diluted version.

BASIC USES
CANYON TONE CLEAR protects exterior, above-grade vertical and horizontal concrete, masonry, aggregate, brick and stucco surfaces against the effects of water, de-icing chemicals, chloride-ion intrusion, freeze/thaw exposure and spalling, airborne pollution and acid rain. It is used on building exteriors, parking garage floors and ramps, walkways and decks, and other areas where a clear, non-yellowing protective sealer is required. Because CANYON TONE CLEAR is water-based, it can be used safely on interior applications without toxic or solvent odors.

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ADVANTAGES
- Single Coat Application – CANYON TONE CLEAR is applied in a one-coat, surface flooding treatment.
- Single Package – No catalyzation required. Easy application by brush, roller or spray.
- Water-Based – No solvents or solvent odors. Easy cleanup with soap and water. Meets all VOC requirements.
- UV Stable – No discoloration or yellowing with age.
- Retains Natural Appearance – No glaze, gloss or visible sheen on treated surfaces.
- Protects from airborne pollution and acid rain.
- Prevents darkening and discoloration of treated surfaces during periods of rain.
- Protects against freeze/thaw and spalling.
- Protects against efflorescence or migrating salts.
- Can be applied by brush or roller, as well as by airless, conventional or pump sprayer.
- Breathing System – Allows moisture vapor to escape from the building interior.
SURFACE PREPARATION

All surfaces must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. All previous coatings on the substrate must be completely removed, including coatings that are tightly adhered to the surface.

CANYON TONE CLEAR is a deep penetrating sealer. It must be able to penetrate the surface to which it is applied to be effective. Surfaces such as glazed brick, smooth dense brick, natural rock, glass reinforced concrete and smooth dense concrete must be sandblasted or etched prior to application of CANYON TONE CLEAR to allow for maximum penetration.

CANYON TONE CLEAR has a neutral pH, so it will not etch exposed metal or glass surfaces, nor will it harm most ground vegetation.

MIXING INSTRUCTIONS

CANYON TONE CLEAR CONCENTRATE is diluted with water at the jobsite to the desired concentration. The standard dilution for most applications is 1 part CANYON TONE CLEAR CONCENTRATE to 9 parts water. This will result in a 7% active content. One gallon (3.8 l) of CANYON TONE CLEAR CONCENTRATE will therefore yield 10 gallons (38 l) of diluted product, 5-gallons (19 l) will yield 50 gallons (189 l) and a 55-gallon (209 l) drum will yield 550 gallons (2,079 l). If a higher solids concentration is desired for increased water-repellency on porous substrates, CANYON TONE CLEAR CONCENTRATE can be diluted up to a 21% active content concentration. Blend 1 part concentrate with as little as 4 parts water to achieve the desired dilution. Due to the increased water repellency provided by higher active content concentrations, recoatability characteristics are diminished.

APPLICATION INSTRUCTIONS

Once diluted, CANYON TONE CLEAR can be applied by brush, roller, airless or conventional spray, and also by low pressure pump-style sprayers. The most effective application method is by low pressure airless spray (20 psi). The spray gun should have a fan-type nozzle with a maximum orifice size of .035" (.86 mm), and should be held no more than 18" (46 cm) from the surface during application.

On horizontal surface applications, CANYON TONE CLEAR should be uniformly applied to saturate or flood the surface. After approximately 20 minutes, any remaining puddles should be rolled out or mopped up. Vertical applications should be treated from the bottom of the wall upwards. CANYON TONE CLEAR should be uniformly sprayed on the wall to the point where excess solution runs 6 to 8 inches below the spray pattern on each pass. Any excessive runs or drips should immediately be rolled into the surface. Care should be taken to complete each wall section entirely before work stoppage. Application should be continuous, maintaining a wet edge to wall joints or corners. CANYON TONE CLEAR should be applied in a single coat application only.

LIMITATIONS & PRECAUTIONS

CANYON TONE CLEAR should not be applied over wet substrates. Proper penetration will not occur if standing water or excessive wetness blocks absorption. However, concrete and masonry wall surfaces can be coated while slightly damp. In locations that are typically hot and arid, it can be beneficial to pre-dampen the wall surface prior to application of CANYON TONE CLEAR. The added moisture will aid in proper penetration and cure of the sealer.

CANYON TONE CLEAR CONCENTRATE is a waterborne sealer. Care must be taken during storage and shipment to ensure that temperatures do not fall below 32°F (0°C). Do not apply CANYON TONE CLEAR below 50°F (10°C). Cool temperatures and high humidity will retard cure.

CANYON TONE CLEAR is a low viscosity material designed to provide water-repellency without disturbing the natural color or texture of the substrate. It is not designed to waterproof concrete block or other porous substrates under wind driven rain or other severe weather conditions.

CAUTION! Can cause irritation of nose, throat and lungs. Can cause nausea and headache. Prolonged or repeated breathing of vapor or spray mist may be harmful. Use a respirator for protection from vapor or spray mist. Avoid eye and skin contact. Do not take internally. Wash thoroughly after handling and before eating or smoking. Keep container closed when not in use.

For additional information on safety requirements, refer to OSHA guidelines and CANYON TONE CLEAR CONCENTRATE Material Safety Data Sheet.
Transparent, Water-Based Concrete/Masonry Sealer

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE
A. Precast Concrete: Section 03400
B. Membrane Waterproofing: Section 07110
C. Sealants: Section 07900
D. Special Coatings: Section 09800
E. Painting: Section 09900

1.02 QUALITY ASSURANCE
A. Qualifications of Applicator: Water-repellent sealer shall be applied by a Manufacturer-certified Applicator with basic knowledge of the material and application procedures.
B. Requirements of Regulatory Agencies: Solvents used in the formulation of the water-repellent stain shall conform to all local, state and federal VOC and air quality control standards.
C. Jobsite Mock-Up: After initial samples have been approved, apply one coat of water-repellent sealer to one side of the mock-up wall located at the jobsite. Sealer shall be of the type that will be used on the actual building. Application procedures and absorption rates shall be as hereinafter specified, unless otherwise recommended by the Manufacturer, in writing, to effectively repel moisture from the substrate.
   1. Approval by the Architect or Owner shall serve as a standard of comparison with respect to application rate and overall appearance.
   2. General application to actual surfaces on the structure shall not proceed until jobsite mock-up has been approved in writing by the Architect or Owner.

Delete paragraph C for projects not requiring a jobsite mock-up.

1.03 SUBMITTALS
A. Submit Manufacturer's literature, certificates, and samples to the Architect or Owner in accordance with requirements specified in General Conditions and Division 1, General Requirements.
B. Manufacturer's Literature: Manufacturer's literature shall be submitted for review before work is started. Literature shall show material specifications, physical properties (including ASTM test methods utilized), Manufacturer's estimated application rate for each surface to which the sealer is to be applied, current application instructions of the Manufacturer and Material Safety Data Sheets.
C. Samples: Submit two (2) precast concrete units to match those being used on the actual installation, with water-repellent sealer spray-applied over the entire surface in one (1) heavy application, as per Manufacturer’s printed instructions. The untreated precast units shall be furnished by the General Contractor. Water-repellent sealer shall be the same type that will be used on the actual structure. Samples shall be resubmitted until approved by the Architect or Owner. Approval by the Architect or Owner shall serve as a standard with respect to application rate and overall appearance.

Modify above paragraph to meet project substrate and submittal requirements.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING
A. Deliver materials in original sealed containers, clearly marked with the Manufacturer's name, brand name, type of material, batch number and date of manufacture.
B. Store materials in an area where temperatures will not be less than 50° F (10º C) or more than 100º F (38º C), and in accordance with OSHA & local code requirements.

1.05 JOB CONDITIONS
A. Temperature and relative humidity conditions during the time of application shall be within Manufacturer's application instructions. Do not apply material under rainy conditions or within two (2) days after surfaces become wet from rainfall or other moisture. Do not apply when weather is foggy or overcast.
B. Take precautions to ensure that workmen and work areas are adequately protected from health hazards resulting from handling, mixing and application of the material.
C. Furnish all scaffolding and the necessary equipment to complete the work. Scaffolding shall comply with all local, state and federal requirements as to safety.
D. Provide drop cloths and other forms of protection necessary to protect all adjoining surfaces, rendering them completely free of overspray and splashes. Any surfaces that have been damaged or splattered shall be cleaned, restored or replaced to the satisfaction of the Architect or Owner.
E. If sealant is applied prior to the sealer, a test must be conducted prior to installation to verify compatibility of the sealer and sealant.

Delete paragraph F for exterior applications only. Ventilation systems to meet OSHA requirements.

PART 2 – PRODUCTS

2.01 DESCRIPTION
A clear blend of reactive silane with a silicone emulsion, designed to provide invisible water-repellency and protection from the intrusion of chloride salts, airborne pollution and de-icing chemicals over vertical and horizontal concrete, masonry and brick surfaces. The product is supplied in either a pre-diluted 5% solids by volume concentration, or in concentrate form that is diluted at the jobsite to achieve the specified solids.

2.02 MATERIAL
Approved water-repellent sealer shall be UNITED COATINGS' "CANYON TONE CLEAR", or equal, meeting the following minimum requirements:
A. Active Content: Minimum of 7% [ASTM D5095]
B. Viscosity: 1,000 to 1,500 cps @ 75°F (24°C) [ASTM D2196]
C. Dry time: 15 to 20 minutes @ 75°F (24°C), 50% R.H. [ASTM D1640]
D. Cure time: 1 to 2 hours @ 75°F (24°C), 50% R.H. [ASTM D1640]
E. Temperature Limits for Service Conditions: -70° F to 200° F (-56°C to 93°C)
F. Materials shall meet the performance conditions as specified in Paragraph 2.02.
G. Sealer shall have a minimum 5-year history of successful performance under weather conditions similar to those encountered at the project site.
2.03 PERFORMANCE REQUIREMENTS

A. Resistance to Accelerated Weathering: Treated specimen shall show no deleterious effects, no surface checking, cracking or delamination after 3,000 hours of testing in accordance with ASTM G23 in a QUV cabinet.

B. Water Repellency under Wind Driven Rain Conditions: Precast concrete test panel, treated with a 10% solids concentration of clear sealer, shall show an 83% reduction in leakage rate. Tested in accordance with ASTM E514-86.

C. Resistance to Salt Spray: Treated sample shall show no deleterious effects, no surface checking, cracking or delamination following 500 hours of continuous exposure. Testing shall be in accordance with ASTM B117 in a Harshaw Salt Spray Cabinet. Test specimens shall be treated cement board or equal.

D. Resistance to Sulfide Staining: No discoloration after 15 minutes immersion in saturated hydrogen sulfide gas solution when tested under wind driven rain conditions in accordance with ASTM D1712. Compare with control specimen not exposed to hydrogen sulfide gas solution.

E. Resistance to Chemical Reagents: Specimen shall exhibit none or slight color change and no softening or deterioration after 7 days immersion in the following chemicals: Ammonium Hydroxide - 10%; Sodium Hydroxide - 10%; Mineral Spirits, KB value 38. Inspection is compared to specimen not exposed to chemical reagents.

F. Reduction in Water and Chloride Absorption: Precast concrete test panels, treated with a 15% solids concentration of clear sealer, shall show a 77% reduction in water absorption and an 87% reduction in chloride ion intrusion after 21 days. Water vapor transmission shall be maintained at 100%. Tested in accordance with NCHRP 244 Series II.

G. Resistance to UV Light/Reduction in Soluble Chloride: Precast concrete test panels, treated with a 15% solids concentration of clear sealer, shall show a minimum 90% reduction in soluble chloride, with no discoloration. Tested as per MCHRP 244 Series IV, Southern Exposure.

H. Water Repellency: Treated precast concrete test panels shall show the following water absorption characteristics when tested as per Federal Specification SS-W-110C:

<table>
<thead>
<tr>
<th>Solids Concentration</th>
<th>Water Absorption Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>9% Solids</td>
<td>0.2%</td>
</tr>
<tr>
<td>11% Solids</td>
<td>0.2%</td>
</tr>
<tr>
<td>15% Solids</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

I. Resistance to Chloride Ion Penetration: Precast concrete test panels, treated with a 15% solids concentration of clear sealer shall show a 75% reduction in chloride penetration at each depth. Tested in accordance with AASHTO T-259 & T-260.

J. Water Vapor Transmission (Perms): Water vapor transmission of the treated precast concrete test panel shall remain at 100% of the untreated control panel (average of 3.0 Perms). Tested in accordance with ASTM E96-95.

K. Verification of Minimum 5-Year Exposure to Appropriate Climate: Sealer shall have been in use in a similar climatic region 5 years or more and show no sign of fading, peeling or flaking. Supply project locations exceeding 5 years of service.

PART 3 – EXECUTION

3.01 PREPARATION OF SURFACES

Surfaces to receive the water-repellent sealer shall be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. Methods and materials used for cleaning of the substrate shall be as recommended by the Manufacturer of the water-repellent sealer.

3.02 MIXING

The clear, water-repellent sealer shall be thoroughly mixed in accordance with the Manufacturer's directions using a power mixer capable of mixing the entire container. Do not thin the material.

OR

The clear, water-repellent sealer is supplied as a concentrate and shall be diluted at the jobsite to achieve a concentration of ___% by volume. Mix clean, fresh water with the sealer concentrate in a separate container using a power mixer capable of thoroughly mixing the entire container. To achieve a 5% by volume concentration, dilute at the rate of 1 part concentrate to 9 parts water. To achieve a 10% solids by volume concentration, dilute at the rate of 1 part concentrate to 4 parts water.

Select the appropriate paragraph above, depending upon whether the sealer is supplied in pre-diluted or concentrate form. If concentrate is specified, select the appropriate solids and dilution rate.
3.03 APPLICATION
A. The water-repellent sealer may be applied using conventional or airless spray equipment, as well as low pressure, pump-style spray. Apply in one (1) heavy application, in strict accordance with the Manufacturer's printed application instructions and precautions, copies of which shall be at the jobsite. The most effective method is by low pressure airless spray (20 psi).
B. The spray gun should have a fan-type nozzle with a maximum orifice size of .027" (.7 mm), and shall be held perpendicular to and not more than 18" (46 cm) from the surface.
C. Should jobsite or environmental conditions prohibit the use of spray application, the sealer may be applied by brush or roller, taking care so as to thoroughly saturate the substrate.
D. The Applicator shall apply a field test on a small inconspicuous area of the actual building surface to determine the best absorption rate, as well as to determine suitability of the application technique chosen.
E. The material shall be applied at the rate of approximately ________ sq. ft./gal. Absorption rates will vary depending on the surface texture and porosity of the substrate in order to achieve total water-repellency.

Fill in the number of square feet per gallon for proper coverage rate in the above paragraph.
Actual coverage rates are determined by the jobsite sample.

Approximate total coverage rates are as follows:
1. Smooth Concrete  - - - - - - - - - - - - - - - - - - - - - - 150 Sq. Ft./Gallon (3.7 m²/l)
2. Exposed Aggregate  - - - - - - - - - - - - - - - - - - - - - 125 Sq. Ft./Gallon (3.2 m²/l)
3. Masonry  - - - - - - - - - - - - - - - - - - - - - - - - - - - 100 to 125 Sq. Ft./Gallon (2.4 to 3.2 m²/l)
4. Horizontal Concrete  - - - - - - - - - - - - - - - - - - - 75 to 100 Sq. Ft./Gallon (1.9 to 2.4 m²/l)

Allow for extra surface area when estimating coverage for fluted, split-face or other textured surfaces.

F. Water-repellent sealer should be uniformly spray-applied on the wall to the point, where excess solution runs 6" to 8" (15 to 20 cm) below the spray pattern on each pass. Any excessive runs or drips should immediately be rolled into the substrate.

G. Take care to maintain a wet edge to a natural termination point, such as a wall joint or corner. Water-repellent sealer is a single coat material and should be applied in one application only.

H. On horizontal surfaces, apply water-repellent sealer uniformly to saturate or flood the surface. After approximately 20 minutes, any remaining puddles should be rolled out or mopped up.

I. Brush or roller-apply sealer only at locations where overspray would affect adjacent materials and where not practical for spray application, taking care so as to apply the sealer at a rate that thoroughly saturates the substrate.

3.04 CLEANUP
A. Maintain work and work areas in a clean, safe condition at all times during sealer installation. Remove excess materials, trash and debris from the jobsite daily.

B. At the completion of the project, clean area of any spills and containers, and clean up all debris, leaving jobsite in a clean and orderly condition.

3.05 WARRANTY
A. Upon completion of the sealer application, the Contractor shall submit to the Manufacturer a warranty request form, certifying substrate, square footage and application rate.

B. As a condition of the project's completion and acceptance, deliver to the Owner a copy of the fully executed Warranty from the Coating Manufacturer, as per project specifications.
CANYON TONE CLEAR HPC
Transparent HIGH PENETRATION CREAM Sealer

Technical Data & Application Instructions

PRODUCT DESCRIPTION
CANYON TONE CLEAR HPC is a solventless, silane-based water repellent formulated in a rich, creamy consistency. Through its unique deep penetration and ability to chemically react with the concrete matrix, CANYON TONE CLEAR HPC provides an effective, UV stable protective barrier against freeze/thaw cycles as well as the intrusion of moisture, pollutants and salts. It effectively waterproofs concrete and masonry surfaces, while reducing chloride ion penetration by an average of 95%.

CANYON TONE CLEAR HPC is an ultra-high volume solids formulation of reactive silane blended with methylsiloxane, in a heavy, thixotropic consistency. This allows for a single coat application over horizontal, vertical and overhead surfaces. CANYON TONE STAIN HPC imparts a transparent, non-yellowing waterproof treatment to concrete and concrete masonry substrates without any noticeable change in color or surface sheen. It has an outstanding ability to impregnate high-quality concrete and reinforced concrete surfaces.

BASIC USES
CANYON TONE CLEAR HPC protects exterior, above-grade vertical and horizontal concrete, concrete masonry, exposed aggregate and stucco surfaces against the effects of water, de-icing chemicals, chloride-ion intrusion, freeze/thaw exposure and spalling, airborne pollution and acid rain. It is particularly effective for impregnating and sealing concrete used in bridge construction, roadways and high-rise structures. It can also be used on parking garage floors and ramps, walkways and decks, and other areas where a clear, non-yellowing, protective sealer is required. Because CANYON TONE CLEAR HPC is water-based, it can be used safely on interior applications as well without toxic or solvent odors.

PACKAGING & MIXING
CANYON TONE CLEAR HPC is a single component material, available in 1-gallon (3.8-liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Thoroughly mix the contents of each container prior to use, using an upward motion from the bottom of the can, to achieve an even consistency.

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
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<tr>
<td>Solids by Volume</td>
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<tr>
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<td>ASTM D2196</td>
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<tr>
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<tr>
<td>VOC lbs/gal (g/l)</td>
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<td>Flash Point</td>
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<td>ASTM D93</td>
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ADVANTAGES
- Chloride Ion Penetration – Reduced by 95%
- Waterproof – Effectively waterproofs concrete block against wind-driven rain as per ASTM E514
- Single Coat Application – CANYON TONE CLEAR HPC is applied in a one-coat, surface flooding treatment
- Ultra-High Solids – 80% reactive silane solids is 10 to 20 times higher than other sealers
- Non-Sag Formula – The highly thixotropic formula will not slump or drip at the recommended coverage rate, even on vertical and overhead applications
- Single Package – No catalyzation required. Easy application by brush, roller or spray
- Water-Based – No solvents or solvent odors. Easy clean-up with soap and water. Meets all VOC requirements
- UV Stable – No discoloration or yellowing with age
- Retains Natural Appearance – No glaze, gloss or visible sheen on treated surfaces
- Protects from airborne pollution and acid rain
- Prevents darkening and discoloration of treated surfaces during periods of rain
- Protects against freeze/thaw and spalling
- Protects against efflorescence or migrating salts
- Can be applied by brush, roller or airless sprayer
- Breathing System – Allows moisture vapor to escape from the building interior
- Deep Penetration – Impregnates capillaries of the concrete, preventing carbonation
- Recoatable – Treated substrates can be topcoated using water or solvent-based paints or coatings.
CANYON TONE CLEAR HPC contains 80% reactive silane solids, as compared to 5% found in typical low viscosity formulations. The cream provides maximum exposure of the high solids silane to the concrete surface. This allows for optimum penetration of the silane into the concrete matrix, where it reacts with the silica component to form a polymeric silicone resin. CANYON TONE CLEAR HPC can also be used on any alkaline substrate that has previously been treated with concentrated or undiluted agents, such as alkoxysilanes. It can also be topcoated with paints or stains where desired.

The ability of a product to bead water on concrete is only a surface effect, which plays a secondary role in protecting the substrate. CANYON TONE CLEAR HPC contains a silane molecular structure that is one one-hundredth (1/100) the capillary size of the concrete matrix, providing long-term protection from within. This ultra-small molecular size allows penetration of up to ½" (12 mm) (using 3,000 psi/20 MPa concrete) at a coverage rate of 200 sq. ft. per gallon (4.9 m²/l).

Although effective within a few hours of application, it typically requires several days for the chemical reaction to conclude between the CANYON TONE CLEAR HPC and the silica within the concrete. Therefore, a moderate beading effect is initially produced, which will increase after the surface has been wetted.

SURFACE PREPARATION

All surfaces must be structurally sound, clean, dry and fully cured, and free from dust, dirt, oils, grease, curing agents or form release agents, efflorescence, scale or other foreign materials. All previous coatings on the substrate must be completely removed, including coatings that are tightly adhered to the surface. Clean by any method compatible with the application, including; abrasive blasting, acid etching, chemical cleaning, high pressure washing or vacuum.

If strongly acidic or caustic cleaning agents are used, the surface must be neutralized and thoroughly rinsed with water to remove any trace of residue. Prior to selecting a surface preparation method, a test section should be performed to determine its effectiveness. New concrete should be cured a minimum of 28 days prior to application.

Although effective within a few hours of application, it typically requires several days for the chemical reaction to conclude between the CANYON TONE CLEAR HPC and the silica within the concrete. Therefore, a moderate beading effect is initially produced, which will increase after the surface has been wetted.

CANYON TONE CLEAR HPC is a deep penetrating sealer designed to react with the silica component within concrete and concrete masonry substrates. It is not effective over substrates with low silica content such as terracotta tile, glazed brick, smooth dense brick, natural stone, etc. These substrates should be treated with UNITED’S Canyon Tone Clear or Acrysheen. CANYON TONE CLEAR HPC has a neutral pH, so it will not etch exposed metal or glass surfaces, or harm most ground vegetation.

**SURFACE PREPARATION**

All surfaces must be structurally sound, clean, dry and fully cured, and free from dust, dirt, oils, grease, curing agents or form release agents, efflorescence, scale or other foreign materials. All previous coatings on the substrate must be completely removed, including coatings that are tightly adhered to the surface. Clean by any method compatible with the application, including; abrasive blasting, acid etching, chemical cleaning, high pressure washing or vacuum.

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**APPLICATION INSTRUCTIONS**

CANYON TONE CLEAR HPC should be applied in a single coat using airless spray. A brush, roller or spatula can be used for smaller areas. The spray tip should have a fan-type nozzle with a minimum orifice size of .035" (.89 mm). The spray gun should be held no more than 18" from the surface during application.

On horizontal surface applications, CANYON TONE CLEAR HPC should be uniformly applied to saturate or flood the surface. Vertical applications should be treated from the bottom of the wall upwards. CANYON TONE CLEAR HPC should be uniformly sprayed on the wall at the recommended application rate. Care should be taken to complete each wall section entirely before work stoppage. Application should be continuous, maintaining a wet edge to wall joints or corners.

Unlike conventional silane impregnants, CANYON TONE CLEAR HPC already contains the required amount of water for the cross-linking reaction. This prevents significant quantities of silane from evaporating when the product is applied to dry concrete surfaces. CANYON TONE CLEAR HPC can be readily applied to surfaces fully exposed to sun and wind.

**LIMITATIONS & PRECAUTIONS**

CANYON TONE CLEAR HPC should not be applied over wet substrates. Proper penetration is prevented if standing water or excessive wetness blocks absorption. Concrete and masonry wall surfaces can, however, be coated while slightly damp. CANYON TONE CLEAR HPC is a waterborne sealer. Care must be taken during storage and shipment to ensure that temperatures do not fall below 32°F (0°C). Do not apply CANYON TONE CLEAR HPC below 50°F (10°C), as cool temperatures and high humidity will retard cure.

**CAUTION!** Can cause irritation of nose, throat and lungs. Can cause nausea and headache. Prolonged or repeated breathing of vapor or spray mist may be harmful. Use a respirator for protection from vapor or spray mist. Avoid eye and skin contact. Do not take internally. Wash thoroughly after handling, and before eating or smoking. Keep container closed when not in use.

For additional information on safety requirements, refer to OSHA guidelines and CANYON TONE CLEAR HPC Material Safety Data Sheet.
APPLICATION

1. Surface must be sound and free of dirt, grease and efflorescence.

2. Stir IN-STONE thoroughly using an upward motion from the bottom of the pail.

NOTE: Turn off or disable automatic sprinkler systems near any surface to be treated with IN-STONE at least 24 hours before and after application.

3. Apply IN-STONE in a uniform manner using a brush, roller or garden sprayer so that it saturates and penetrates the surface. Avoid run-downs, drips and puddling. Brush or roll out any excess while coating is still wet.

IMPORTANT: Remix frequently. DO NOT THIN OR DILUTE

4. Apply two coats of IN-STONE with a minimum of 2 hours dry time between coats. Provide additional dry time in cooler temperatures or high humidity conditions. Allow a minimum of 24 hours for complete cure. Do not apply if there is a chance of rain, dew or freezing temperatures within 2 hours of application. Clean sprayer, brushes and rollers with warm, soapy water.

COLORS: IN-STONE is supplied as a clear base, which is tinted by the local distributor or supplier using standard exterior colorant. IN-STONE is semi-transparent, therefore the finish color will be affected by the color of the masonry being treated.

IN-STONE is a low viscosity material designed to provide color toning without disturbing the natural texture of the substrate. It is not designed to provide waterproofing over concrete or masonry substrates. Application of IN-STONE will not repair or correct cracked, chipped or otherwise damaged surfaces.

Frequently Asked Questions:

Q. Is acid etching required prior to application of IN-STONE?
   A. Test the surface to be stained by wetting it. Non-porous or smooth-textured concrete surfaces that do not readily absorb water pose potential problems and must be sandblasted or acid-etched prior to application of IN-STONE.

Q. Can IN-STONE be applied to stucco?
   A. IN-STONE is not intended for use on stucco surfaces.

Q. Can IN-STONE be used on garage floors, driveways, sidewalks or concrete walkways?
   A. If used on a concrete floor in a garage, a clear epoxy top coat must be applied to protect IN-STONE from vehicular traffic. IN-STONE is ideally suited, however, for walking surfaces such as stepping stones and paver blocks that form a patio or footpath.

Q. Does IN-STONE provide a surface sheen?
   A. No, IN-STONE by itself provides very little surface sheen as it is intended to provide a flat finish. If a shiny, water resistant surface is desired, use IN-STONE in combination with a topcoat of ACRYSHIELD to provide a durable, moisture resistant Finish.
Customize With Designer Colors

PRODUCT DESCRIPTION
INSTONE is a water-based, modified acrylic designed to penetrate porous vertical concrete and masonry surfaces. This penetrating, semi-transparent stain adds color to substrates such as standard or split-faced concrete block, pavers, cast-in-place concrete, or other concrete and masonry surfaces. It possesses excellent color stability, ultraviolet resistance, alkaline and pollution resistance. INSTONE is integrally locked into the substrate as a result of its low viscosity and microscopic penetration properties, thus preserving the existing detail on decorative textures. INSTONE will not crack or peel when properly applied.

OVERVIEW
• Penetrating semi-transparent concrete stain
• Provides a decorative color finish to vertical surfaces
• Clear base — tinted with standard accent colors by the local distributor or supplier
• Ultraviolet, alkaline and pollution resistant
• Preserves the texture and quality of concrete or masonry surfaces
• Will not crack or peel
• Clean up tools with soap and water

SURFACE PREPARATION
Surfaces must be sound, clean and free of all dirt, oil, grease and efflorescence. Test the surface to be stained by wetting it. Non-porous or smooth-troweled concrete surfaces that do not readily absorb water pose potential problems and must be sandblasted or acid-etched prior to application of INSTONE.

BASIC USES
INSTONE provides a decorative color finish to vertical surfaces such as standard or split-faced concrete block, pavers, cast concrete, brick, or other porous concrete and masonry substrates. Since it does not interfere with the natural water migration qualities of these surfaces, INSTONE is also effective for use on retaining walls. It will not allow hydrostatic pressure buildup to occur, which can result in peeling and surface spalling with film-forming materials.

PACKAGING & MIXING
INSTONE is packaged in 1-gallon (3.8 liter) cans and 5-gallon (19 liter) pails. Upon extended storage, some settling may occur. Stir as necessary using an upward motion from the bottom of the can to thoroughly blend the contents.

Low-Cost Color Alternative

COLORS
INSTONE is supplied as a clear base, which can be easily tinted to produce a variety of colors. INSTONE provides a semi-transparent finish, allowing decorative surface textures, as well as certain background aggregate colors, to remain visible while uniformly toning the substrate.

TYPICAL PROPERTIES
1. Solids By Weight: 10% (±1) [ASTM D2369]
2. Solids By Volume: 10% (±1) [ASTM D2697]
3. Weight Per Gallon: 8.4 lbs. (3.8 kg) (±.2) [ASTM D1475]
4. Dry Time Between Coats: 2 hours @ 75°F (24°C) [ASTM D1640]
5. Cure Time: 7 days [ASTM D1640]
6. Low and High Service Limits: -70°F to 200°F (21°C to 93°C)

The above color samples are approximations only. Jobsite applied colors will vary from these examples due to the surface texture and porosity of the substrate. A test application on an inconspicuous area is recommended prior to full application.
Every day thousands of travelers pass over the Cook's Chasm Bridge, located on a scenic stretch of Highway 101 along the rocky Oregon coastline. In designing the recent bridge replacement, which included a rest area and scenic overlook, environmental issues and aesthetics played an important role. The Oregon DOT and the U.S.D.A. Forestry Department worked together with the contractor to combine cast-in-place and precast concrete elements in creating a design that would blend with the natural surroundings.

A stone-patterned form liner was used, which closely resembled the basalt rock found in the area. To achieve the natural color, UNITED COATINGS’ IN-STONE was tinted to match two stones submitted by a U.S.D.A representative. IN-STONE, a water-based, semi-transparent stain, was applied in multiple colors using low pressure spray and brushes to create the “basaltic” appearance. The final touch was a natural stone cap, which in combination with the stained precast, provides the look of a natural stone wall.

The end result is a durable structure that beautifully complements the surrounding environment. The use of IN-STONE was a key element in the design team’s ability to achieve the desired appearance while meeting their budget.
IN-STONE is a water-based, modified acrylic designed to penetrate porous vertical concrete and masonry surfaces. This semi-transparent stain adds color to substrates such as standard or split-faced concrete block, pavers, cast-in-place concrete, or other concrete and masonry surfaces. It possesses excellent color stability, ultraviolet resistance, alkali and pollution resistance. IN-STONE is integrally locked into the substrate as a result of its low viscosity and microscopic penetration properties, thus preserving the existing detail on decorative textures. IN-STONE will not crack or peel when properly applied.

- Penetrating semi-transparent concrete stain
- Provides a decorative color finish to vertical surfaces
- Clear base — tinted with standard accent colors by the local distributor or supplier
- Ultraviolet, alkali and pollution resistant
- Preserves the texture and quality of concrete or masonry surfaces
- Will not crack, peel or flake
- Used by numerous state DOT’s and commercial contractors
- Easy application with brush or low-pressure sprayer
- Clean tools and equipment with soap and water

IN-STONE is a product of UNITED COATINGS Manufacturing Co.. For more information visit us on the web at www.unitedcoatings.com or www.canyontonestain.com

Since when is concrete gray a designer color?
IN-STONE
SEMI-TRANSPARENT STAIN

Technical Data & Application Instructions

PRODUCT DESCRIPTION
IN-STONE is a water-based, modified acrylic designed to penetrate porous concrete and masonry surfaces. This penetrating, semi-transparent stain adds color to substrates such as standard or split-faced concrete block, pavers, cast-in-place and precast concrete, concrete floors or other concrete and masonry surfaces. It possesses excellent color stability, ultraviolet resistance, alkaline and pollution resistance.

IN-STONE is integrally locked into the substrate as a result of its low viscosity and microscopic penetration properties, thus preserving the existing detail on decorative textures. IN-STONE will not crack or peel when properly applied.

BASIC USES
IN-STONE provides a decorative color finish to surfaces such as standard or split-faced concrete block, pavers, cast concrete or other porous concrete or masonry substrates. When used on smooth concrete surfaces such as pre-cast panels or concrete floors, IN-STONE will provide a color finish similar to “Acid Based Stain” materials without the use of hazardous materials. Since it does not interfere with the natural water migration qualities of these surfaces, IN-STONE is also effective for use on retaining walls. It will not allow hydrostatic pressure build-up to occur, which results in peeling and surface spalling of film-forming materials. IN-STONE is not recommended for floors exposed to vehicular traffic.

COLORS
IN-STONE is supplied as a Clear Base, which can be easily tinted to produce a variety of colors. IN-STONE provides a semi-transparent finish, allowing decorative surface textures as well as certain background aggregate colors to remain visible, while uniformly toning the substrate.

CLEAN UP
Clean equipment with warm soapy water.

TYPICAL PROPERTIES
1. Solids By Weight: 10% (±1) [ASTM D2369]
2. Solids By Volume: 10% (±1) [ASTM D2697]
3. Weight Per Gallon: 8.4 lbs. (3.8 kg) (±.2) [ASTM D1475]
4. Dry Time Between Coats: 2 hours @ 75°F (24°C) [ASTM D1640]
5. Cure Time: 7 days [ASTM D1640]
6. Low and High Service Limits: -7°F to 200°F (-21°C to 93°C)

SURFACE PREPARATION
Surfaces must be sound, clean and free of all dirt, oil, grease and efflorescence. Test the surface to be stained by wetting it. Non-porous or smooth-trowelled concrete surfaces that do not readily absorb water pose potential problems and must be sandblasted or acid-etched prior to application of IN-STONE.

APPLICATION
IN-STONE is designed to be applied using a Hudson-type garden sprayer, and may also be applied using a brush or roller. Mix container thoroughly prior to application. Thinning or reducing is not recommended. IN-STONE should be applied in a uniform manner that saturates and penetrates the surface, yet avoids excessive rundown or puddling. Brush or roll out excess material while the coating is still wet. Apply in two separate coats, allowing a minimum of two hours between coats. Provide additional dry time in cooler temperatures or high humidity conditions. Application rate is approximately 150 to 200 sq. ft. per gallon depending on porosity of substrate (3.7 to 4.9 m²/l). Due to the low viscosity of IN-STONE, some pigments will tend to settle to the bottom. Therefore, remix frequently during application to assure uniform color consistency. Do not apply if the temperature is below 45°F (7°C) or if there is a chance of rain, dew or freezing temperatures before IN-STONE has dried. Do not apply during extremely high temperatures or under direct sunlight. Allow a minimum of 7 days for complete cure.

PACKAGING & MIXING
IN-STONE is packaged in 1-gallon (3.8 liter) cans and 5-gallon (19 liter) pails. Upon extended storage, some settling may occur. Stir as necessary using an upward motion from the bottom of the can to thoroughly blend the contents.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
ACRYSHEEN
NON-SACRIFICIAL GRAFFITI RESISTANT
ACRYLIC SEALER

**Technical Data & Application Instructions**

**PRODUCT DESCRIPTION**

ACRYSHEEN is a water-based, penetrating sealer designed to produce a clear, semi-gloss surface sheen. It is manufactured from non-yellowing, advanced acrylic resins to form a durable finish that provides long term water-repellency, dirt and graffiti resistance, and weather protection.

ACRYSHEEN’S low viscosity allows it to “wet in” and lock into the substrate. It will allow moisture vapor to escape from the building interior, yet provides excellent damp-proofing characteristics on the exterior. The appearance will remain uniform, eliminating any blotchiness from water staining, even after years of service.

**BASIC USES**

ACRYSHEEN was specifically developed as a penetrating sealer for use over properly prepared smooth or textured concrete, exposed aggregate concrete, brick, stone or stucco surfaces where a semi-gloss sheen is desired. It also has the durability required for use over exposed aggregate and other surfaces on vertical or horizontal applications.

ACRYSHEEN imparts a slick, semi-gloss film over a variety of substrates, providing for increased dirt pick-up and graffiti resistance. It can be used as a topcoat over numerous types of new or existing finishes on roofs, walls and decks to provide sheen, graffiti resistance and/or ease of cleanability. It is also effective in rejuvenating aged and/or oxidized skylights. Its non-sacrificial characteristics allow removal of graffiti without the need to reseal the cleaned surfaces.

**ADVANTAGES**

* Facilitates graffiti removal
* Protects against industrial airborne chemicals
* Reduces soil and fume absorption
* Minimizes run-down discoloration
* Non-yellowing
* Prevents moisture staining of surfaces
* Minimizes efflorescence
* Excellent ultraviolet resistance
* Conforms to all VOC regulations
* Reduces spalling and deterioration
* Single package – No shelf or pot life problems
* Water-Based – No flammable solvents
* Long term durability

![image]

**TYPICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
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<td>Solids by Volume</td>
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<td>Cure Time*</td>
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* Dry and Cure Times at 75°F (24°C), 50% R.H.

**GRAFFITI RESISTANCE**

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<th>Cleaning Solution</th>
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<th>Finish Condition</th>
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<td>Finish was retained</td>
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<td>Lacquer Thinner</td>
<td>Stain was removed</td>
<td>Finish was retained</td>
</tr>
<tr>
<td>Ink Marker (Blue)</td>
<td>M.E.K. Solvent</td>
<td>Stain was removed</td>
<td>Finish was retained</td>
</tr>
<tr>
<td>Ink Marker (Blue)</td>
<td>Lacquer Thinner</td>
<td>Stain was removed</td>
<td>Finish was retained</td>
</tr>
</tbody>
</table>

When tested in accordance with ASTM D6578-00 Section 9, both spray paint and ink marker were easy removed from ACRYSHEEN. No noticeable change in sheen or appearance was observed using ketone based cleaning solvents (M.E.K., Lacquer Thinner and most commercially available graffiti cleaning materials).

Successful removal of graffiti stains will vary greatly depending on type of graffiti material used, time that passes prior to cleaning and number of times graffiti is removed.

ACRYSHEEN will protect the substrate against atmospheric deterioration with a clear, semi-gloss film that provides water-repellency and surface sheen without significantly altering the natural color or texture of the substrate.

UNITED recommends that a sample test area be applied, and approval be obtained, prior to any general application of the material. ACRYSHEEN may bring out the natural color of the particular concrete or masonry surface being sealed, resulting in a darkened appearance, as if wetted. Apply the test area on an inconspicuous area of the actual building to determine the optimum coverage rate to achieve uniformity of sheen, as well as to determine the suitability of the application technique.
SURFACE PREPARATION

All surfaces must be structurally sound, clean, dry, fully cured, and free of dirt, dust, oil, curing or form release agents, efflorescence, scale, or other contaminants that could inhibit optimum adhesion. Existing coatings that are loose, cracked or peeling must be completely removed.

ACRYSHEEN is a natural penetrating sealer designed to wet into the surface to which it is applied. Surfaces such as glazed brick, smooth dense brick, glass fiber reinforced concrete, and dense, steel-trowelled concrete must be etched or abraded prior to application of ACRYSHEEN to allow for maximum penetration. An adhesion enhancing additive is also available for application over tile and other slick surfaces. For application in high humidity areas, ACRYSHEEN AR will provide increased resistance to algae, mold and mildew growth.

ACRYSHEEN can be applied over most existing paints or coatings where additional sheen and/or cleanability is desired. As it will be unable to penetrate into the substrate on these applications, the existing finish must be sound and well adhered, as well as clean and dry.

ESTIMATED COVERAGE RATES

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Square Feet/Gallon</th>
<th>Estimated Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>125 to 150 (3.0 to 3.9 m²/l)</td>
<td></td>
</tr>
<tr>
<td>Exposed Aggregate</td>
<td>75 to 100 (1.8 to 2.4 m²/l)</td>
<td></td>
</tr>
<tr>
<td>Brick, Stone</td>
<td>125 to 150 (3.0 to 3.9 m²/l)</td>
<td></td>
</tr>
<tr>
<td>Stucco</td>
<td>60 to 75 (1.4 to 1.8 m²/l)</td>
<td></td>
</tr>
<tr>
<td>Existing Coating</td>
<td>150 to 175 (3.9 to 4.2 m²/l)</td>
<td></td>
</tr>
</tbody>
</table>

* These estimates are totals for two separate applications. Apply approximately half the total number of gallons in each of the two coats. The above absorption (coverage) rates are provided for estimating purposes only. Coverage rates will vary with texture and porosity of the substrate. Allow for additional material when estimating coverage over highly textured or porous surfaces.

PACKAGING & MIXING

ACRYSHEEN is a single component, ready-to-use material available in 1 gallon (3.8 liter) cans, 5 gallon (19 liter) pails and 55 gallon (208 liter) drums. Thoroughly mix the containers to achieve a uniform consistency. Thin with clean water as necessary to achieve adequate viscosity for penetration into substrate being sealed.

Shelf life in unopened containers is 1 year from storage, handling or use of our products. Do not open containers until ready to use the material.

APPLICATION INSTRUCTIONS

ACRYSHEEN shall be applied by airless spray equipment. Any airless spray equipment capable of 1,000 psi (6,980 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used for applying ACRYSHEEN.

For maximum production on large projects, airless spray equipment capable of 2,000 psi (13,780 kPa) and 1 gallon per minute (3.8 l/minute) delivery should be used.

A reversible self-cleaning spray tip with orifice size of .013" to .017" (.330 to .425 mm) and minimum 40 degree fan angle is recommended.

Brush or roller application is recommended only for edging work and for confined areas that would require extensive masking or protection from spray application.

ACRYSHEEN shall be applied in two separate applications except where a single application gives the desired surface finish characteristics. When spraying, each application shall be first in a uniform horizontal direction, followed by a uniform overlapping vertical direction. Gun shall be held not more than 18" (45 cm) from wall. Care should be taken during application to prevent runs or sags.

Thinning should not be necessary when applying ACRYSHEEN over exposed aggregate or other similar surfaces. Over dense substrates it may be reduced with clean water to achieve the desired consistency for adequate penetration.

Other restoration work and caulking should be completed prior to application of the ACRYSHEEN. Most standard caulking compounds are compatible with surfaces previously treated with ACRYSHEEN, however, field testing should be performed for confirmation.

Clean pump, tools and other equipment with fresh water. Flush water from the pump and hoses with Mineral Spirits for storage.

LIMITATIONS & PRECAUTIONS

ACRYSHEEN should not be applied over wet surfaces or wood substrates, however, concrete and masonry surfaces can be coated while slightly damp. In locations that are typically hot and arid, it can be beneficial to pre-dampen the surface prior to the application of ACRYSHEEN.

ACRYSHEEN is a water-based sealer. Care must be taken during storage and shipment to ensure that temperatures do not fall below 32°F (0°C). Do not apply ACRYSHEEN at temperatures below 50°F (10°C). Cool temperatures and high humidity will retard cure.

Avoid breathing of vapor or spray mist. Approved (MSHA/NICOS) chemical cartridge respirator should be worn by applicator. For additional information on safety requirements, refer to OSHA guidelines and ACRYSHEEN Material Safety Data Sheet.
NON-SACRIFICIAL, GRAFFITI RESISTANT ACRYLIC SEALER

ACRYSHEEN is a water-based, penetrating sealer designed to produce a clear, semi-gloss surface sheen. It is manufactured from non-yellowing, advanced acrylic resins to form a durable finish that provides long-term water-repellency, dirt and graffiti resistance, and weather protection.

ACRYSHEEN’S low viscosity allows it to “wet” into the surface pores and lock into the substrate. The appearance will remain uniform, eliminating any blotchiness from water staining, even after years of service on vertical or horizontal surfaces.

ACRYSHEEN was specifically developed as a penetrating sealer for use over properly prepared smooth or textured concrete, exposed aggregate concrete, brick, stone or stucco surfaces where a semi-gloss sheen is desired. It can also be used as a topcoat over painted or coated surfaces to improve their durability, dirt repellency and sheen. ACRYSHEEN is ideal for providing improved graffiti resistance to exterior walls as well as ease of cleanability to walkways, patios, paver stones, etc.

Apply ACRYSHEEN to:
• Brick
• Stucco
• Stone
• Exposed Aggregate
• Concrete blocks
• Retaining Walls
• Precast Playground Equipment
• Pool Decks
• Precast Pavers
• Reseal Exterior Wall Tiles

GRAFFITI RESISTANCE*
When tested in accordance with ASTM D6578-00, Section 9, both spray paint and ink marker were easy removed from surfaces sealed with ACRYSHEEN. No noticeable change in sheen or appearance were observed when using ketone-based cleaning solvents, such as M.E.K., Lacquer Thinner and most commercially available graffiti cleaning materials.

*Successful removal of graffiti stains will vary greatly depending on type of graffiti material used, length of time prior to cleaning, and the number of times graffiti is removed.

UNITED COATINGS MANUFACTURING CO., INC.
Spokane Valley, WA & Tempe, AZ
800/541-4383 or 509/926-7143
www.unitedcoatings.com
ACRYSHEEN is quick and easy to apply! It pumps smoothly through a standard pump-up garden sprayer, and cleans up with soap and water. Once applied, brush out any puddles or drips and let it dry. If a higher gloss is desired, simply apply a second coat. ACRYSHEEN dries to a transparent finish, eliminating the danger of lap lines.

Use ACRYSHEEN on sidewalks and walkways to help protect against spalling. The deicing chemicals and salt commonly used to clear ice or snow from pedestrian walking surfaces can weaken the concrete and allow moisture to penetrate. When this moisture freezes it expands, causing the concrete to chip or spall. ACRYSHEEN helps prevent this from happening by sealing the substrate, protecting the concrete against chemical attack and water penetration.

A surface coated with ACRYSHEEN is easy to clean! In most cases, all that’s needed to remove dust, dirt or pollutants is a garden hose with a spray nozzle. In the event of a graffiti problem, simply use a mild solvent and a rag to wipe the graffiti away. This makes ACRYSHEEN ideal for use on exterior walls, bus stops and other areas where graffiti is a problem.

ADVANTAGES
- Facilitates graffiti removal
- Protects against industrial airborne chemicals
- Reduces soil and pollution absorption
- Minimizes run-down discoloration
- Non-yellowing
- Prevents moisture staining of surfaces
- Minimizes efflorescence
- Excellent ultraviolet resistance
- Conforms to all VOC regulations
- Reduces spalling and deterioration
- Single package - No shelf or pot life problems
- Water-Based - No flammable solvents
- Long term durability
- Clean up with soap and warm water
**AQUATHON®**

**EXTERIOR ELASTOMERIC WALL WATERPROOFING**

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**Technical Data & Application Instructions**

**PRODUCT DESCRIPTION**

AQUATHON is a fluid-applied, advanced acrylic elastomer designed to waterproof exterior vertical surfaces. It possesses outstanding adhesion to a wide variety of substrates. AQUATHON is a permanently flexible “breathing” membrane, allowing moisture vapor from the substrate or building interior to escape through the coating while remaining impervious to mass water penetration from the exterior.

AQUATHON cures in a two-stage mode. The exposed surface crosslinks under ultraviolet light, while the sub-surface of the coating is protected from further crosslinking and retains a permanent elastomeric bond to the substrate. This eliminates the need for a separate topcoat and allows the system to repel dirt, mildew and pollution without sacrificing flexibility. It contains no plasticizers, and will not harden or slump with age or changes in temperature.

**BASIC USES**

AQUATHON was specifically developed to waterproof vertical concrete and masonry building exteriors. It has the ability to uniformly cover the profile of textured substrates, forming a continuous membrane resistant to all forms of weather and airborne pollutants.

AQUATHON effectively covers existing hairline cracks and repaired areas, and bridges hairline cracking caused by further building movement. It provides long term, aesthetically pleasing waterproofing on all types of concrete and masonry surfaces. AQUATHON is also effective over wood and hardboard substrates. It is available in smooth or a wide range of textured finishes.

AQUATHON is also authorized by the USDA for use on surfaces where there is a possibility of incidental food contact.

**COLORS**

AQUATHON is available in 36 standard natural toned colors. All other colors are custom matched for the specific application. UNITED has the color tinting facilities to match virtually any color. Color chips or samples must be furnished to UNITED for all custom colors.

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**TYPICAL PROPERTIES**

**TABLE I**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solids by Weight</td>
<td>68% (±2)</td>
<td>ASTM D2369</td>
</tr>
<tr>
<td>Solids by Volume</td>
<td>55%* (±2)</td>
<td>ASTM D2697</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>150 psi (1.0 kPa) (±25) @ 75°F</td>
<td>ASTM D412</td>
</tr>
<tr>
<td></td>
<td>400 psi (2.8 kPa) (±25) @ 0°F</td>
<td></td>
</tr>
<tr>
<td>Elongation</td>
<td>300 (±50) @ 75°F</td>
<td>ASTM D412</td>
</tr>
<tr>
<td></td>
<td>400 (±50) @ 0°F</td>
<td></td>
</tr>
<tr>
<td>Hardness</td>
<td>60-70 Shore A</td>
<td>ASTM D2420</td>
</tr>
<tr>
<td>Permeance</td>
<td>7.7 perms at 15 mils (381 microns)</td>
<td>ASTM E96</td>
</tr>
<tr>
<td>Dry Time @ 75°F, 50% R.H.</td>
<td>1½ hrs @ 20 wet mils (508 microns)</td>
<td>ASTM D1640</td>
</tr>
<tr>
<td>Low &amp; High Service Temperature Limits</td>
<td>-30°F to 200°F (-34°C to 93°C)</td>
<td></td>
</tr>
</tbody>
</table>

**ADVANTAGES**

- **Single Component:** AQUATHON is a ready-to-use material requiring no catalyization. It has no pot life problems.
- **No Solvents:** AQUATHON is a water-based elastomeric emulsion conforming to all VOC and air pollution standards.
- **High Resin Content:** AQUATHON contains a higher ratio of acrylic resin to filler pigments than other coatings.
- **Uniform High Film Build:** AQUATHON’s thixotropic consistency gives it excellent vertical hold, allowing full application in one or two coats.
- **Self Cleaning:** AQUATHON seals and protects, releasing dirt, dust and pollution from its tight surface skin.
- **Elastomeric:** Permanent and non-aging, AQUATHON moves with the building to bridge hairline cracks that may develop.
- **Low Temperature Performance:** AQUATHON is unique in that its elongation properties are maintained at cooler temperatures, contributing to its ability to bridge hairline cracks and withstand freeze/thaw cycling.
- **Abrasive Weather Conditions:** AQUATHON will withstand all normal weather conditions.
- **USDA Standards:** AQUATHON is authorized by the U.S.D.A. for use in Federally inspected meat and poultry processing plants.
**NEW OR UNPAINTED:** Bare concrete, brick, stucco or masonry must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. On new poured-in-place concrete, use a non-staining form release agent that is either easily removed or is designed to be compatible with surface coatings. **AQUATHON** may be applied directly to clean, sound surfaces of concrete, brick or stucco, as well as wood, siding and exterior wallboard. Concrete surfaces exhibiting high alkalinity should first be primed using UNITED’s Primer 708. Prior to application over masonry block, UNITED’s **Block Filler 704** or other approved block filler should be utilized to fill the pores and achieve a pinhole-free surface. **Block Filler 704** is a water-based, high solids acrylic that enables it to uniformly fill and seal porous substrates. Application of a block filler will maximize the effectiveness of the **AQUATHON** topcoat. The amount of block filler required to uniformly fill or surface a masonry block or other porous substrate will depend upon the texture and porosity of the surface. The average application rate for **Block Filler 704**, or other high quality acrylic block filler will be 2 to 2½ gallons per 100 sq. ft. (.8 to 1.0 l/m²). For additional information, refer to separate **Block Filler 704** Technical Data & Application Instructions.

**PREVIOUSLY PAINTED:** All dust, dirt, efflorescence and loosely adhering paint or coating shall be removed. Paints which show failure due to alkalies and moisture, which is recognizable by flaking, peeling and white deposits, must be completely removed. Chalky or oxidized surfaces must be washed with United Cleaning Concentrate (UCC) or equal, and thoroughly power rinsed with clean, fresh water prior to application of **AQUATHON**. **UCC** is a 100% biodegradable cleaner formulated with penetrants from wetting agents and surfactants. It is non-toxic, non-polluting and will not harm ground vegetation, septic tanks or sewer systems. **UCC** should be diluted at a 10 to 1 ratio with water. The diluted cleaning solution is then applied to the substrate at 150 to 200 sq. ft. per gallon and allowed to stand for a minimum of 15 minutes. The cleaning solution is then rinsed from the surface with water under high pressure utilizing either airless spray or pressure washing equipment. A sample application of **AQUATHON** should then be applied to test for adhesion. If test indicates poor or marginal adhesion, surfaces shall be primed with UNITED’s **Primer 708** at 300 to 400 sq. ft. per gallon (7.3 to 9.7 m²/l). **Primer 708** is a resinous acrylic designed to lock down residual chalkiness on sound, previously painted surfaces. Any existing painted surfaces that are not tightly adhered must be removed by sandblasting, water blasting or other mechanical means.
CONCRETE REPAIRS

SPALLED OR DELAMINATED CONCRETE: All delaminated and/or spalled areas in the concrete shall be repaired prior to the application of AQUATHON. Locations of delaminated concrete shall be determined in the field by tapping the concrete with a sounding rod or hammer.

Remove all unsound concrete with electric or pneumatic chipping hammers or with hand tools as required. Size of hammers shall be such as not to damage sound concrete adjacent to repair area. Care shall be taken to avoid damage to embedded steel reinforcement. Sandblast all exposed embedded reinforcement to remove corrosion and old concrete, replacing reinforcement as required. Sandblast the cavity and the immediate surrounding concrete area to remove laitance, dirt, grease, chalk, curing compounds, paint and other contaminants. Blow the cavity clean with compressed air to ensure that all loose particles have been removed. Thoroughly coat all areas of exposed steel reinforcement with a two-component epoxy resin.

Fill cavities using UNITED’S Uni-Crete or other high quality polymer-modified cement mix. After predampening cavity surface with clean water, latex-modified portland cement mortar shall be scrubbed into the surface. Immediately following, latex-modified portland cement concrete patching mix shall be worked into the cavity and compacted adequately to ensure that no voids remain in the patch.

Patch thickness shall be a maximum of 1½" (3.8 cm) and a minimum of ½" (3 mm). Finished surface of patches shall be flush with and shall match texture of existing surface. For major repairs involving deterioration greater than 2” (5 cm) in depth, and/or severe corrosion of the reinforcement, consult a structural engineer for repair procedure.

CONCRETE CRACK REPAIRS: All cracks larger than hairline shall be considered as “moving”, and shall be routed and sealed. Mark all cracks with chalk to provide visibility of the crack during routing. Rout out full length of crack to form a ⅛” (6 mm) wide by ¼” (6 mm) deep joint centered on the crack. Thoroughly blow out the joint with compressed air or flush the joint with clean water to remove all grinding dust. Routed surface must be clean, sound and square.

Remove all failed caulking material previously applied over cracks and clean thoroughly. Remove any existing paint as required to provide a clean, sound concrete surface prior to repairing cracks. Apply bondbreaker along entire length at the bottom of the joint, taking care to avoid applying bondbreaker to the sides of the joint. Fill the full length and depth of the joint with a high quality acrylic or single package urethane sealant. Tool the sealant as recommended by the Manufacturer to ensure bonding, consolidation and uniform appearance. The sealant must be completely cured prior to application of the AQUATHON.

APPLICATION

AQUATHON may be applied by roller as well as conventional or airless spray equipment. A brush or pad may also be used for touch-up and edging work, or for small areas unsuitable for spray application. Airless spray and rolling are the most effective methods for obtaining uniform film build.

AQUATHON is a single component material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Upon extended storage, the product will settle into a two-stage suspension. It is necessary to thoroughly mix all AQUATHON containers prior to application. Use a slow speed mixer capable of mixing the entire contents.

AQUATHON has a rich thixotropic consistency. The addition of water reduces this thixotropic nature and decreases the ability to achieve heavy film builds with good vertical hold. The material is easily pumped and sprayed without thinning, provided equipment is in good working condition, and coating is properly mixed and maintained at a minimum temperature of 60°F (16°C).

All surfaces should be sprayed with multi-directional spray passes to assure positive coverage. On applications requiring two or more coats, subsequent coats shall be applied in a direction perpendicular to the previous coat after it has dried. All surfaces must be uniformly coated and free from voids, pinholes or blisters.

The theoretical thickness given for coverage is based on smooth, non-porous surfaces. Actual gallons required to achieve the minimum dry film thickness will depend upon the surface texture, method of application and weather conditions. It is the responsibility of the Applicator to apply sufficient material to achieve the minimum dry thickness required. AQUATHON applied at the rate of one gallon per 100 sq. ft. (.4 l/m²) will theoretical yield 8.8 dry mils (224 dry microns). For issuance of a 5-year waterproofing warranty, UNITED requires one or two coats of AQUATHON applied at a nominal thickness of 13 dry mils (330 dry microns), with a minimum thickness of 10 mils (254 dry microns) at any location. For issuance of a 10-year waterproofing warranty, UNITED requires a minimum of two coats of AQUATHON applied at a nominal thickness of 19 dry mils (483 dry microns), with a minimum thickness of 15 dry mils (381 dry microns) at any location. The following estimated coverage rates can be used as a guide in figuring material requirements for 5 and 10 year warranties:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Gallons/100 sq. ft. for 5-yr.</th>
<th>Gallons/100 sq. ft. for 10-yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete (smooth)</td>
<td>1.5 (.6 l/m²)</td>
<td>2.25 (.9 l/m²)</td>
</tr>
<tr>
<td>Concrete Block, Brick</td>
<td>2 (.8 l/m²)</td>
<td>2.75 (1.1 l/m²)</td>
</tr>
<tr>
<td>Lightweight Pumice Block</td>
<td>2.5 (1.0 l/m²)</td>
<td>3.25 (1.3 l/m²)</td>
</tr>
<tr>
<td>Split Face, Stucco or Coarse Textured Surfaces</td>
<td>3 (1.2 l/m²)</td>
<td>3.75 (1.5 l/m²)</td>
</tr>
</tbody>
</table>

TABLE III
As work proceeds, the Applicator must periodically check the number of gallons used and compare to square feet coated. If adequate gallonage has not been used, adjust accordingly and apply additional material to previously coated areas. Allow 15 to 30% more material for structures with grooved design or recessed mortar joints.

AQUATHON shall not be applied when one or more of the following conditions exist:
1. If ambient and/or surface temperatures are below 45°F (7°C).
2. If relative humidity is in excess of 95%.
3. Threat of rain or freezing temperatures within 4 hours of application.
4. The dew point is less than 5°F (3°C) above the surface temperature.

In addition, caution must be exercised when applying AQUATHON in dark colors under high heat conditions. Surfaces exposed to direct sunlight should be coated with thin passes during the morning or late afternoon hours. Application of dark colors under extreme direct sunlight can cause blistering and/or excessive cellular structure within the cured coating film.

AQUATHON has been applied over a wide variety of substrates, utilizing many different brands, types and sizes of conventional and airless spray equipment. Airless equipment is best for field application, with a minimum of ¾ GPM (2.8 l/minute) and reversible .021” to .031” (.5 to .8 mm) tip.

Larger equipment will always increase production capabilities.

UNITED recommends that a sample area be applied by the Contractor using the desired AQUATHON color and texture, and approval be obtained prior to any general application of the material. This will help determine proper coverage rate and application technique. Final appearance will be affected by surface texture and porosity, as well as application technique.

AQUATHON is also available in a light texture finish. UNITED also has the ability to match a wide variety of custom textures. When utilizing a textured finish, it is recommended that a minimum of two coats be applied, with the first being non-textured, or smooth AQUATHON. This will provide a monolithic, waterproof membrane underneath the textured topcoat(s).

Use water and United Cleaning Concentrate or equal to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines and equipment until next use.

AQUATHON BASECOAT

AQUATHON is also available in a lower cost, Basecoat formulation, which can be used for up to ½ of the required total dry film thickness requirement on applications requiring a more economical system. AQUATHON Basecoat exhibits excellent adhesion and elongation qualities over concrete, masonry and wood substrates. It does not, however, possess the UV and weather resistance of standard AQUATHON, which must be used as the final coat on any applications utilizing AQUATHON Basecoat.

APPLICATION TIPS

Whenever AQUATHON is ordered, every effort is made to supply the coating from a single batch. However, due to fluctuations in inventory levels, there are occasions when different batch numbers of the same color are sent to complete an order. Whenever this occurs, it is the sole responsibility of the Applicator to make certain that only one batch number is used on any one side of the building. Different batch numbers cannot be used on the same wall unless they are “boxed” or mixed together to ensure total color uniformity.

Partially full containers of AQUATHON may surface skin under hot conditions. Examine before mixing and remove skin (if present). To prevent skinning during application in hot weather or in partially full containers, pour a thin layer of water on surface after mixing.

While AQUATHON has excellent vertical hold, it is virtually impossible to apply more than ½ gallon per 100 sq. ft. (.2 l/m²) per coat unless utilizing airless or conventional spray equipment. Therefore, additional coats must be factored in to achieve the required dry film thickness when utilizing roller or brush application.

LIMITATIONS & PRECAUTIONS

AQUATHON should generally not be used over cold storage tanks or buildings where a vapor barrier coating is required. AQUATHON shall not be used for interior applications in place of a thermal barrier.

AQUATHON will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store unless protection from freezing is available.

AQUATHON requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply in the late afternoon if heavy moisture condensation can appear during the night.

Do not apply AQUATHON at temperatures below 45°F (7°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 4 hour period after application.

For additional information, refer to OSHA guidelines and AQUATHON Material Safety Data Sheet.
Advanced Acrylic Exterior Elastomeric Wall Waterproofing

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE
A. Cast-In-Place Concrete: Section 03300
B. Precast Concrete: Section 03400
C. Brick Masonry: Section 04210
D. Concrete Unit Masonry: Section 04220
E. Masonry Restoration & Cleaning: Section 04500
F. Membrane Waterproofing: Section 07110
G. Sealants: Section 07900
H. Cement Plaster (Stucco): Section 09180
I. Special Coatings: Section 09800
J. Painting: Section 09900

1.02 QUALITY ASSURANCE.
A. Qualifications of Applicator: Fluid-applied waterproofing shall be applied by a Manufacturer-certified Applicator with basic knowledge of the material and application procedures.
B. Requirements of Regulatory Agencies: Formulation of the fluid-applied waterproofing shall conform to all local, State and Federal air quality control standards.
C. Jobsite Mock-Up: After initial samples have been approved, apply primer (as required), block filler (as required) and one or two separate coats (per project requirements) of fluid-applied waterproofing to one side of the mock-up, located on the jobsite. Waterproofing coverage rates shall be as hereinafter specified, unless otherwise recommended by the Manufacturer in writing, to effectively waterproof the surface.
   1. Approval by the Architect shall serve as a standard of comparison with respect to color and overall appearance.
   2. General application to actual surfaces on the building shall not proceed until jobsite mock-up has been approved in writing by the Architect.

Delete paragraph C for projects not requiring jobsite mock-up.

1.03 SUBMITTALS
A. Submit Manufacturer's literature, approved Contractor certificate, and samples to the Architect in accordance with requirements specified in General Conditions and Division 1, General Requirements.
B. Manufacturer's Literature: Manufacturer's literature shall be submitted for review before work is started. Literature shall show material specifications, physical properties (including ASTM test methods utilized), Manufacturer's estimated application rate for each surface to which the waterproofing is to be applied, current application instructions of the Manufacturer, and Material Safety Data Sheets.
C. Samples: After the initial color selection has been approved, submit two (2) full size concrete masonry units identical to those being used in the work, with block filler and fluid-applied waterproofing applied over entire surface (face side) in two (2) separate applications. The untreated concrete masonry units shall be furnished by the General Contractor. Fluid-applied waterproofing shall be of the type and color that will be used on the actual building. Samples shall be resubmitted as required until approved by the Architect. Approval by the Architect shall serve as a standard of comparison with respect to color and overall appearance.

Modify above paragraph to meet project requirements with regard to substrate, primer and block filler.
If fluid-applied waterproofing is to be applied over precast concrete, samples shall be a minimum of 12 inches by 12 inches in size.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING
A. Type of material, batch number, and date of manufacture shall be clearly stated on the labels of each container.
B. Store materials in an area where temperatures will not be less than 50ºF (10ºC) or more than 100ºF (38°C) and in accordance with OSHA requirements.

1.05 JOB CONDITIONS
A. Temperatures and relative humidity conditions during time of application shall be per Manufacturer's application instructions. Do not apply material under rainy conditions or within three (3) days after surfaces become wet from rainfall or other moisture. Do not apply when weather is foggy or overcast.
B. Take precautions to ensure that workmen and work areas are adequately protected from any health hazards resulting from handling, mixing and application of material.
C. Furnish all scaffolding and the necessary equipment to complete the work. Scaffolding shall comply with all State, Federal and local requirements as to safety.
D. Provide drop cloths and other forms of protection necessary to protect all adjoining work and surfaces to render them completely free of overspray and splashes. Any surfaces that have been damaged or splattered shall be cleaned, restored, or replaced to the satisfaction of the Architect.

PART 2 - PRODUCTS

2.01 DESCRIPTION
A seamless, fluid-applied acrylic membrane waterproofing system designed for application over concrete, masonry, stucco and other appropriate building exteriors. Approved system shall be UNITED COATINGS' AQUATHON Exterior Elastic Wall Waterproofing consisting of AQUATHON advanced acrylic single-component elastomeric coating, ACRYLEX 400 PRIMER, UNITED CLEANING CONCENTRATE (UCC) and a quality block filler (as necessary).

2.02 MATERIALS
A. Biodegradable Cleaner: UNITED CLEANING CONCENTRATE (UCC), water-reducible non-phosphate cleaner as supplied by Coating Manufacturer for use in cleaning wall surfaces prior to coating.
B. Block Filler: As necessary and/or specified, use a high quality, water-based, sprayable latex filler as supplied by the Certified Applicator for use in filling and sealing porous or textured substrates prior to coating.
C. Fluid-Applied Waterproofing Membrane: AQUATHON, advanced acrylic coating as supplied by the Coatings Manufacturer to provide an elastomeric waterproof membrane over the substrate.
1. Solids by weight shall be a minimum of 68% [ASTM D2369]
2. Solids by volume shall be a minimum of 55% [ASTM D2697]
3. Dry time: 1½ hours at 20 wet mils, 75°F, 50% R.H. [ASTM D1640]
4. Tensile strength: Minimum of 150 psi (±25) @ 75°F [ASTM D412]. Minimum of 400 psi (±25) @ 0°F [ASTM D412]
5. Elongation: Minimum of 300% (±50) @ 75°F [ASTM D412]. Minimum of 400% (±50) @ 0°F [ASTM D412]
6. Hardness: Minimum of 60 to 70 Shore A [ASTM D2240]
7. Permeance: 7.7 perms at 15 mils [ASTM E96]
8. Flexibility: 180° flex over 1/8" mandrel @ -30°F [Federal Test method #141a-6221]
9. Temperature limits for service conditions: -30°F to 200°F (-34°C to 93°C)
10. Materials shall meet performance requirements as specified in paragraph 2.04
2.03 COLORS
Color of the fluid-applied elastomeric waterproofing shall be ______________________, as selected by the Architect or Owner from Coating Manufacturer's standard colors.  
Use above paragraph for standard colors

Color of the fluid-applied elastomeric waterproofing shall be a custom color as selected by the Architect or Owner. Color shall match color chip(s): ________________________________________.  
Use above paragraph for custom colors

2.04 PERFORMANCE REQUIREMENTS
A. Resistance to Accelerated Weathering: Treated specimen shall show no deleterious effects, no surface checking, cracking or delamination after 3,000 hours of testing in accordance with ASTM G23 in a QUV weathering cabinet.
B. Resistance to Natural Sunlight: Test panels shall show no deleterious effects, no surface checking, cracking or delamination after 1 year exposure to concentrated natural sunlight as per ASTM G90.
C. Resistance to Wind Driven Rain: After 40 hours of continuous testing, treated specimen shall show no apparent moisture penetration through the membrane. Test conducted in a pressurized test chamber producing 5" (12.7 cm) of water pressure, equivalent to 100 mph wind pressure (161 km/hr) as per Federal Specification RRC-555B.
D. Resistance to Salt Spray: Treated sample shall show no deleterious effects, no surface checking, cracking or delamination following 500 hours of continuous exposure. Testing shall be in accordance with ASTM B117 in a Harshaw Salt Spray Cabinet. Test specimens shall be treated cement asbestos board or equal.
E. Resistance to Mildew. After 14 days dry samples shall exhibit no fungus growth when tested in accordance with ASTM G21.
F. Film Breathing Ability: At 15 dry mils coating shall have a perm rating of 7.7 perms, allowing moisture vapor within the building to pass through the coating while preventing penetration of mass water from the exterior.

PART 3 - EXECUTION

3.01 PREPARATION OF SURFACES
A. All delaminated and/or spalled areas in the concrete, masonry or stucco shall be repaired prior to application of the primer, block filler or elastomeric membrane. Locations of delaminated concrete shall be determined in the field by tapping the concrete with a sounding rod or hammer.
B. Bare concrete, brick, stucco or masonry shall be structurally sound, clean, dry, fully cured, and free from dust, efflorescence, curing agents or form release agents, scale or other foreign materials.
C. On new precast or poured-in-place concrete, use a non-staining form release agent that is either easily removed or designed to be compatible with surface coatings.
D. All cracks larger than hairline shall be considered as "moving" and shall be routed and caulked. Mark all cracks with chalk to provide visibility of the crack during routing. Rout out full length of crack to form a ¼" wide by ¼" deep (6 mm x 6 mm) joint centered on the crack. Thoroughly blow out the joint with compressed air or flush the joint with clean water to remove all grinding dust. Routed surface must be clean, sound and square.
E. Remove all failed caulking material previously applied over cracks and clean thoroughly.
F. Apply bondbreaker along entire length at the bottom of all routed joints, taking care to avoid applying bondbreaker to the sides of the joint. Fill the full length and depth of the joint with a high quality acrylic or urethane sealant. Tool the sealant as recommended by the Manufacturer to ensure bonding, consolidation and uniform appearance. The sealant must be completely cured prior to application of the block filler, primer or elastomeric membrane.
G. On previously painted surfaces, all loosely adhering paint or coating shall be completely removed by scraping, pressure washing, blasting or other mechanical means. Paints that show failure due to alkalies and moisture, which is recognizable by flaking, peeling and white deposits, must be completely removed.
H. Chalky, oxidized or other contaminated surfaces must be washed with UNITED CLEANING CONCENTRATE (UCC) or equal biodegradable cleaner. Apply UCC under low pressure, allow to sit for a minimum of 15 minutes, and thoroughly rinse from the surface with fresh water under high pressure using either airless spray or pressure washing equipment.
I. Apply a sample application of AQUATHON to test for adhesion. If test indicates poor or marginal adhesion, surfaces shall be primed with Acrylex 400 at the rate of 300 to 400 sq. ft. per gallon (7.3 to 9.7 m²/l), to lock down residual chalkiness.
J. Prior to application over masonry block or other porous and/or highly textured surfaces, approved acrylic block filler must be utilized to fill the pores and achieve a pinhole-free surface. The amount of block filler required to uniformly fill or surface a given substrate will depend upon the texture and porosity of the surface. Block filler should be applied at a rate sufficient to fill the porosity of the substrate. Typical application rate will be 2 to 2½ gallons per 100 sq. ft. (.8 to 1.0 l/m²). If spray applied, the block filler shall be back-rolled into the surface.

3.02 ELASTOMERIC COATING APPLICATION

A. All containers shall be thoroughly mixed prior to application in accordance with the Manufacturer's directions using a power mixer capable of mixing the entire container. **Do not thin the material.**

B. **AQUATHON** may be applied by roller as well as conventional or airless spray equipment. Airless spray and roller are the most effective methods for obtaining uniform film build.

C. All surfaces must be coated with multi-directional passes to assure positive coverage. Apply subsequent coats in a direction perpendicular to the previous coat after it has dried.

D. The entire wall surface shall receive **AQUATHON** advanced acrylic elastomer coating applied as follows:

For issuance of a 5-Year Waterproofing Warranty, one or two coats of fluid-applied waterproofing shall be applied at a nominal thickness of 13 dry mils (330 microns) with a minimum thickness of 10 dry mils (254 microns) at any location.

*or*

For issuance of a 10-year waterproofing warranty, two or three separate coats of fluid-applied waterproofing shall be applied at a nominal thickness of 19 dry mils (483 microns) with a minimum thickness of 15 dry mils (381 microns) at any location.

*Use either paragraph 1 or 2 to meet project requirements.*

The following estimated coverage rates should be used as a guide in figuring fluid-applied waterproofing material requirements for the appropriate 5 or 10 year warranty:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Gallons/100 sq. ft.</th>
<th>Gallons/100 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>5-Year Warranty</strong></td>
<td><strong>10-Year Warranty</strong></td>
</tr>
<tr>
<td>Concrete (smooth)</td>
<td>1.75 (.7 l/m²) in 1 or 2 coats</td>
<td>2.6 (1.4 l/m²) in 2 coats</td>
</tr>
<tr>
<td>Concrete Block, Brick</td>
<td>2.4 (1.0 l/m²) in 2 coats</td>
<td>3.2 (1.3 l/m²) in 2 coats</td>
</tr>
<tr>
<td>Lightweight Pumice Block</td>
<td>3.0 (1.2 l/m²) in 2 coats</td>
<td>3.8 (1.5 l/m²) in 2 or 3 coats</td>
</tr>
<tr>
<td>Split Face, Stucco or Coarse</td>
<td>3.5 (1.4 l/m²) in 2 or 3 coats</td>
<td>4.4 (1.8 l/m²) in 3 coats</td>
</tr>
<tr>
<td>Textured Surfaces</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Choose appropriate recommended coverage rate as per substrate and warranty requirements.*

Allow 15 to 30% more material for structures with grooved design or recessed mortar joints.

E. The applicator must periodically check the number of gallons (liters) used and compare to square feet (meters) coated. If adequate material has not been used, adjust and apply additional material to previously coated areas.

F. When applying dark colors under high heat conditions, avoid application in direct sunlight. Apply **AQUATHON** in thin passes in the morning or late afternoon.

G. **AQUATHON** shall not be applied; if ambient and/or surface temperatures are below 45°F (7°C); if the relative humidity is in excess of 95%; if there is a threat of rain or freezing temperatures within 4 hours of application; or if the dew point is less than 5°F (3°C) above the surface temperature.

3.04 CLEANUP

A. Maintain work and work areas in a clean, safe condition at all times during coating installation. Remove excess materials, trash and debris from the jobsite daily.

B. At the completion of the project, clean area of any spills and containers, and clean up all debris, leaving jobsite in a clean and orderly condition.

3.05 WARRANTY

A. Upon completion of the coating system, the Coating Manufacturer’s Representative, Owner’s Representative, Architect and Applicator shall make a final inspection to determine the dry film thickness of the fluid-applied acrylic membrane and to verify that the system meets the Manufacturer's requirements for warranty. The Contractor shall notify all interested parties in advance of said inspection.

B. As a condition of the project completion and acceptance, deliver to the Owner a copy of the fully executed Warranty from the Coating Manufacturer, as per project specifications.
1. Solids by Weight: 66% (±2) (Base & Top) [ASTM D1644]
2. Solids By Volume: 50% (±2) (Base & Top) [ASTM D2697]
3. Weight per Gallon: 12.4 lbs. (5.6 kg) [ASTM D1474]
4. Density: 1.5 g/ml [ASTM D1475]
5. Tensile Strength: 325 psi (±20) (1.66 MPa) [ASTM D2370]
6. Elongation: 150% (±20) @ 75°F (24°C) [ASTM D2370]
8. Low Temperature Flexibility: Passes 180° flex over 1/8” (3 mm) mandrel @ -6°F (-23°C) [Federal Test Method No. 141 a-6221]
9. Temp. Limits for Normal Service Conditions: 0°F to 180°F (-18°C to 82°C)

**ADVANTAGES**

- Single Component: AQUATHON 150 components are ready-to-use materials requiring no catalyzation. There are no pot life problems.
- No Solvents: AQUATHON 150 is a water-based elastomeric emulsion conforming to all VOC and air pollution standards.
- High Resin Content: AQUATHON 150 contains a high ratio of acrylic resin to fillers.
- Uniform High Film Build: AQUATHON 150’s thixotropic consistency gives it excellent vertical hold, allowing full application in two coats.
- Self Cleaning: AQUATHON 150 seals and protects, releasing dirt, dust and pollution from its tight surface skin.
- High Elongation: AQUATHON 150 moves with the building to bridge hairline cracks that may develop.
- Low Temperature Stability: AQUATHON 150 exhibits good elongation properties at cooler temperatures, contributing to its ability to bridge hairline cracks. It also withstands freeze/thaw cycling.
- Weather Resistance: AQUATHON 150 will withstand all normal weather conditions.
SURFACE PREPARATION

Bare concrete, brick, stucco or masonry must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. On new poured-in-place concrete, use a non-staining form release agent that is either easily removed or is designed to be compatible with surface coatings. **AQUATHON 150** may be applied directly to clean, sound surfaces of concrete, brick or stucco, as well as wood siding and exterior wallboard. Concrete surfaces exhibiting high alkalinity should first be primed using UNITED’S Primer 708.

All dust, dirt, efflorescence and loosely adhering paint or coating shall be removed. Chalky or oxidized surfaces must be washed with United Cleaning Concentrate (UCC) or equal, and thoroughly power rinsed with clean, fresh water prior to application of **AQUATHON 150**. A sample application of **AQUATHON 150 Basecoat** should then be applied to test for adhesion. If test indicates poor or marginal adhesion, surfaces shall be primed with UNITED’s Uniseal at 300 to 400 sq. ft. per gallon (7.3 to 9.8 m²/l). Any existing painted surfaces that are not tightly adhered must be removed by sandblasting, water blasting or other mechanical means.

All delaminated and/or spalled areas in the concrete shall be repaired prior to application of **AQUATHON 150 Basecoat**. Remove all unsound concrete as required. Fill cavities using UNITED’S Uni-Crete or other quality polymer-modified cement mix. Finished surface of patches shall be flush with and shall match texture of existing surface. For major repairs involving deterioration greater than 2” (5 cm) in depth, and/or severe corrosion of the reinforcement, consult a structural engineer for repair procedure.

All cracks larger than hairline shall be considered as “moving”, and shall be routed and sealed. Remove all failed caulking material previously applied over cracks and clean thoroughly. Remove any existing paint as required to provide a clean, sound concrete surface prior to repairing cracks. Fill the full length and depth of the joint with a high quality acrylic or single package urethane sealant. Tool the sealant to ensure bonding, consolidation and uniform appearance. The sealant must be completely cured prior to application of **AQUATHON 150**.

Prior to application over masonry block, UNITED’s **Block Filler 704** or other approved block filler should be utilized to fill the pores and achieve a pinhole-free surface. Application of a block filler will maximize the effectiveness of the **AQUATHON 150**. The average application rate for **Block Filler 704**, or other high quality acrylic block filler will be 2 to 2½ gallons per 100 sq. ft. (.8 to 1.0 m²/l).

APPLICATION

Airless spray and roller are the most effective methods for application of **AQUATHON 150** components, although a brush or pad may also be used for touch-up and edging work, or for small areas. While **AQUATHON 150** has excellent vertical hold, it is virtually impossible to apply more than ½ gallon per 100 sq. ft. (.2 l/m²) per coat unless utilizing airless or conventional spray equipment. Additional coats must be factored in to achieve the required dry film thickness when utilizing roller or brush application.

**AQUATHON 150 Basecoat** and **Topcoat** are single component materials available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Use a slow speed mixer capable of mixing the entire contents of all containers prior to use. Thinning or reducing the materials is not recommended.

**AQUATHON 150 Basecoat** can be used for up to ½ of the overall coating thickness, and must always be used in combination with **AQUATHON 150 Topcoat**. **AQUATHON 150 Topcoat** can be used on its own to achieve the desired total coating thickness requirement. Always apply subsequent coats in a direction perpendicular to the previous coat after it has dried. All surfaces must be uniformly coated and free from voids, pinholes or blisters.

**AQUATHON 150** applied at the rate of one gallon per 100 sq. ft. (.4 l/m²) will theoretical yield 8.0 dry mils (203 dry microns). For issuance of a 5-year water-proofing warranty, UNITED requires a minimum of two coats of **AQUATHON 150** applied at a minimum dry film thickness of 10 mils (254 microns) at any location. It is the responsibility of the applicator to ensure that adequate material is applied to achieve the minimum required coating thickness.

Exercise caution when applying **AQUATHON 150** in dark colors under high heat conditions. Surfaces exposed to direct sunlight should be coated with thin passes, and during the morning or late afternoon hours. Application of dark colors under direct sunlight can cause blistering and a cellular structure within the cured film.

Use water and UCC or equal to thoroughly flush equipment. Purge the water from the system using mineral spirits or cellosolve solvent. Leave the solvent in the lines and equipment until next use.

LIMITATIONS & PRECAUTIONS

**AQUATHON 150** should not be used over cold storage structures where a vapor barrier coating is required, or for interior applications in place of a thermal barrier. The components will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store without protection from freezing.

**AQUATHON 150** requires complete evaporation of water to cure. Do not apply if weather conditions will not permit cure before rain, dew or freezing temperatures occur, or in the late afternoon if heavy moisture condensation can appear during the night. Do not apply at temperatures below 45°F (7°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 4 hour period after application.

For additional information, refer to OSHA guidelines and **AQUATHON 150** Material Safety Data Sheet.
CANYON TONE TEXTURE
EXTERIOR TEXTURED ACRYLIC FINISH

Technical Data & Application Instructions

PRODUCT DESCRIPTION
CANYON TONE TEXTURE is a high-build, water-based, 100% acrylic textured coating for use over a wide variety of concrete and masonry surfaces. It also possesses good flexibility for bridging existing and future hairline cracks. CANYON TONE TEXTURE is designed for application in single or multiple coats, depending on the substrate porosity and texture, to produce a rich, uniform texture. The use of pure acrylic resins assures excellent long-term UV and color stability. CANYON TONE TEXTURE will resist all types of normal exterior weather conditions, including rain, snow, wind and intense ultraviolet exposure.

CANYON TONE TEXTURE is a single-package material designed for easy application with airless spray equipment designed for application of textured materials.

CANYON TONE TEXTURE is a “breathing” coating, allowing moisture vapor to pass through the film from the interior, while remaining impervious to mass water penetration from the exterior.

BASIC USES
CANYON TONE TEXTURE was especially developed to impart a rich, attractive textured finish to precast concrete, poured-in-place concrete, tilt-up concrete, block, brick, metal, and other approved surfaces. CANYON TONE TEXTURE protects the substrate from degradation caused by normal weathering, aging and ultraviolet exposure.

COLORS & TEXTURES
CANYON TONE TEXTURE is available in a wide range of popular architectural colors. An unlimited selection of custom colors is also available to meet specific project requirements. Color chips or samples must be furnished to UNITED for all custom colors. CANYON TONE TEXTURE is manufactured in 4 standard finishes: Pebble, Fine, Medium and Coarse. Dark or vibrant colors may require the use of Canyon Tone Stain as a separate color coat. Refer to Canyon Tone Stain Technical Data for additional information.

TYPICAL PROPERTIES
1. Solids by Weight: 69% ± 2 [ASTM D1644]
2. Solids By Volume: 54% ± 2 [ASTM D2697]
3. Weight Per Gallon: 10.75 lbs. (±.2) [ASTM D1475]
4. Dry Time:* 2 hours @ 70°F (21 C), 50% R.H. [ASTM D1640]
   *Dry times will increase with higher humidity &/or lower temperature
5. Cold Temperature Flexibility: Passes 180º mandrel bend at -5ºF (-21ºC) [ASTM D522]
6. Temperature Limits For Normal Service Conditions: -30ºF to 200ºF (-35ºC to 93ºC)

WARRANTY
UNITED’S 5-Year Standard Warranty, issued to the Building Owner, is a guarantee that the CANYON TONE TEXTURE coating, when properly applied, will maintain its color and will not peel or flake over a 5-year period. This Standard Warranty is provided by UNITED at no cost. Refer to section entitled “Application Instructions” for minimum dry film thickness requirements.

PACKAGING & MIXING
CANYON TONE TEXTURE components are single package, ready to use materials available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

Thoroughly mix all containers using a power mixer capable of uniformly blending the entire contents prior to use. It is not recommended to thin or reduce the material.
SURFACE PREPARATION
Spalled or delaminated areas in the concrete shall be identified and repaired using UNITED’S Uni-Crete or other polymer-modified cement mix. Patch thickness shall be a maximum of ½" (3.8 cm) and a minimum of ⅛" (3 cm). For major repairs involving deterioration greater than 2" (5 cm) in depth, and/or severe corrosion of the reinforcement, consult a structural engineer for repair procedure.

All surfaces must be structurally sound, clean and dry, and free of any dirt, dust, oil, surface chemicals, or other contaminants that may interfere with optimum adhesion. Materials such as curing agents, form release agents, bond-breakers and other concrete processing materials shall be completely removed in accordance with the Manufacturer’s printed instructions for removal prior to proceeding with the coating application.

Remove any laitance, fins or other projections from concrete surfaces. Bug-holes, voids and stress cracks in the masonry surface must be repaired with Uni-Crete or other polymer-modified cement patching material. Small voids and cracks can also be filled using an acrylic-based patch such as UNITED’S Roof Mate Butter Grade.

Prior to application over masonry block, UNITED’S Block Filler 704 or other approved block filler must be utilized to fill the pores and achieve a pinhole-free surface. Application of a block filler will maximize the effectiveness of the CANYON TONE TEXTURE finish.

Fill all hairline cracks with urethane caulk, and strike level with the adjacent surface. Moving cracks larger than hairline should be routed prior to filling with urethane caulk. Remove all failed caulking material and clean the crack thoroughly prior to recaulking.

Confirm that caulk is compatible with CANYON TONE TEXTURE, and that it is thoroughly cured prior to application. Remove any dirt or contaminants from the caulkings prior to coating. CANYON TONE TEXTURE is not designed for coating over sealed control joints.

Any dirt, dust, efflorescence and loosely adhering paint or coating shall be removed from previously painted surfaces. Paint that shows failure due to alkalies and moisture, which is recognizable by flaking, peeling and white deposits, must be completely removed. Chalky or oxidized surfaces shall be washed with United Cleaning Concentrate (UCC) or other biodegradable cleaner, and thoroughly power rinsed with clean water. A sample application of CANYON TONE TEXTURE shall then be applied to confirm adequate adhesion.

Wash new metal using a vinegar solution to remove all traces of the processing oils. Weathered galvanized metal requires a UCC wash followed by a thorough power rinse.

All surfaces shall be primed with UNITED’S Acrylex 400 universal acrylic primer at the rate of 200 to 250 sq. ft. per gallon (4.9 to 6.1 m²/l) prior to finish application.

APPLICATION INSTRUCTIONS
Apply CANYON TONE TEXTURE at the rate of 45 to 65 sq. ft. per gallon (.6 to .9 l/m²) depending on texture utilized, and the porosity and texture of the substrate. Spray application using commercial grade airless spray equipment, such as a Graco President 10:1 or Graco GM 1030, is recommended.

Roller application can be used for small areas only, and should not be used for large, continuous walls. CANYON TONE TEXTURE can be applied using short, medium or long-nap rollers, depending on the desired texture. When rolling, two coats are recommended, using a cross-hatch application technique.

Apply CANYON TONE TEXTURE in such a manner to produce a uniform, even texture over the entire surface. Application should result in a pinhole free, continuous film at a minimum thickness of 16 dry mils (406 microns) to quality for UNITED’S 5-Year Standard Warranty. Take care to maintain a “wet edge” at all times and avoid stopping or starting in the middle of a panel or wall.

Each additional coat of CANYON TONE TEXTURE shall be applied in a direction perpendicular to the previous coat. Each coat must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and be free from any voids, pinholes and blisters. A stipple finish can be achieved by spraying a second coat of Pebble finish over a cured basecoat, lowering the spray pressure on the second coat. The stipple can also be knocked down using a texturing trowel if desired.

If any form of dirt, dust, sand or pollution fallout is detected on the surface of CANYON TONE TEXTURE, it is necessary to remove this material prior to applying an additional coat. Initial dry time to achieve resistance to rain or heavy dew will require several hours. To achieve long-term resistance to heavy rain will require 24 to 72 hours, depending on ambient conditions.

For additional information, contact UNITED’S Technical Service Dept. Field Technicians are available, upon arrangement, to provide job site training and assistance.

Use water and UCC or similar biodegradable detergent to thoroughly flush equipment. Purge water from the system using Mineral Spirits or Glycol Ether prior to storage.

LIMITATIONS & PRECAUTIONS
CANYON TONE TEXTURE will freeze and become unusable at temperatures below 32°F (0°C). Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

CANYON TONE TEXTURE should not be used for below grade applications, nor should it come in contact with ground level dirt and contaminants. If used on the front side of planter boxes, retaining walls or other surfaces where there is a possibility of hydrostatic pressure, the back side of the wall must be waterproofed prior to backfilling.

For specific information on safety requirements, refer to OSHA guidelines and CANYON TONE TEXTURE Material Safety Data Sheet.
ALABAMA
Haverdy's Furniture / Tuscaloosa / 1995

ALASKA
Elmendorf Air Force Base / Anchorage / 1987

ARIZONA
Air National Guard Hangar / Phoenix / 1999
Arrowhead Condominium / Glendale / 80,000 sq. ft. / 1999
Carlsburg Sierra Capital / Phoenix / 1992
Carver Museum / Phoenix / 3,600 sq. ft. / 1998
Chandler Airport / Chandler / 1996
Charles A. Steidel Residence / Scottsdale / 6,500 sq. ft. / 1996
Emerik Properties Corporation / Phoenix / 2,400 sq. ft. / 1996
Glendale Community College / Glendale / 1,600 sq. ft. / 1993
Hochoam Commerce Center / Phoenix / 1995
Maricopa Community College / Scottsdale / 14,000 sq. ft. / 1997
Maricopa Community Colleges / Phoenix / 1992
McCormick Place Apartments / Scottsdale / 1993 & 1994
Merle Hinchel's International Business Center / Glendale / 1994
Paradise Valley Comm. College / Phoenix / 51,878 sq. ft. / 1996
Phoenix Community College / Phoenix / 36,600 sq. ft. / 1993
Public Storage – 19th Avenue / Phoenix / 1993 & 1995
Public Storage / Scottsdale / 1994
Realty Executives / Phoenix / 1993
Safari Inn / Phoenix / 1994
Scottsdale Community College / Scottsdale / 1997
Show Low Airport–New Terminal / Show Low / 1998
Shurgard Storage / McDowell / 1993
South Mountain Comm. College / Phoenix / 28,300 sq. ft. / 1993
Thunderbird American Graduate School / Glendale / 1992 & 1994
Union Hill Water Treatment Plant / Phoenix / 1998
University Place Apartments / Tempe / 1994
University Square / Tempe / 1993
V.A. Medical Center / Tucson / 33,000 sq. ft. / 1998
Windsor Gardens / Phoenix / 1995
Yuma Territorial Prison / Yuma / 1999

ARKANSAS
American Greetings / McCrory / 1994
Arkansas Services / Jonesboro / 1993
Police Sub-Station / Little Rock / 19970

CALIFORNIA
133 Market St. Office Building / San Francisco / 1989
Anaheim Hilton Towers / Anaheim / 1991
Armory Building / Marysvile / 1985
Bank of America Property Mgmt. / Pasadena / 1984
Base Theater / 29 Palms / 1995
Bolyard Building / Ventura / 1992
Caltrans – Signposts / Oakland / 1996
Clark Kerr Campus / Berkeley / 1997
Contel-Remote Switch Facility / Moon Ridge / 1985
Corona Hills Apartments / Corona / 1993
Del Norte County Prison / Crescent City / 1989
Diana Fruit Company / Santa Clara / 1986 & 1988
Edson Range / Camp Pendleton / 1995
Ford Wholesale / Oakland / 1992
Galileo High School / San Francisco
General Telephone / Santa Monica / 1987
Glendale Community College / Glendale / 1997
Hansel Phelps Construction / Rancho Cordova / 1995
Hoover House – Stanford University / Palo Alto / 1986
Huntington Hospital / Pasadena / 1984
Lakewood Community Hospital / Lakewood / 1985
Lawrence Radiation Lab. / Livermore
Long Beach Transit System / Long Beach / 1985 & 1987
Marysville Armony Building / Marysville / 1989
Nave Lanes / Novato / 6,200 sq. ft. / 1993
Pacific Bell / Concord / 1993
Pacific Bell / Richmond / 1993
Pacific Telephone & Telegraph Company / Merced / 1983
Pacific Telephone Building / Santa Cruz / 1987
Pacific Telephone-Melrose Building / West LA
Phase II HUD Project / Oakland / 1982
Prospect Green / Rancho Cordova / 1996
Public Storage / Laguna Hills / 1993
Public Storage / Huntington Beach / 1993
Public Storage / Chatsworth / 1994
Public Storage / Burbank / 1995
Public Storage / Glendale / 1994
Public Storage Warehouse / Cerritos / 1996
Shurgard Storage / Los Angeles / 1994
Silvercrest Retirement Home / San Francisco / 1991
St. Maries Hospital / Los Angeles
St. Maries Hospital-Outpatient Building / 1987
Stanford University - Braun Music Building / Palo Alto / 1997
State Capital Building / Sacramento
Village Racquet Club / Palm Springs / 1993
Vista Carpet / Sun Valley / 1996-1997
Wells Fargo Bank Building / Pasadena / 1988
Womak Residence / Los Gatos / 1985

COLORADO
Foxmyer / Denver / 1992
Rice Mortuary / Brighton / 1990

FLORIDA
Lucerne Medical Center / Orlando / 1993
Quayside Courtside Villa / Miami / 1992

GEORGIA
Lee County Middle School / Leesburg / 26,466 sq. ft. / 1997

HAWAII
250 Ohua St. Condominiums / Honolulu
Care-Phase II GTE Alakea / Honolulu / 10,064 sq. ft. / 1995
Esplinade Apartments / Oahu
Foy Residence / Kaiku / 6,300 sq. ft. / 1997
Heritage House Condominiums / Hawaii Kai / 1990
Island Sands / Wailuku / 7,800 sq. ft. / 1995
JC Penney / Honolulu / 1994
Kahala Condominium / Ewa Beach / 1989
Kahana Beach Resort / Lahaina / 22,000 sq. ft. / 1997
Kauai Coconut Beach Resort / Kapaa / 80,000 sq. ft. / 1995
Makahuaena Resort / Poipu Beach, Kauai / 1994
Oahu Surf Hotel / Honolulu / 1992
Puu Wai Nomi Housing Project / Honolulu / 1993
Regency Park Condominiums / Honolulu / 1992
Royal Vista Condominiums / Honolulu / 1981
The Whaler Condominiums / Kaanapalis, Maui / 1990
Toys "R" Us / Aiea / 25,500 / 1996
Waiau Gardens / Pearl City / 1994
Wailuku Church / Maui / 1994
Weyerhauser Paper / Honolulu / 1991
IDAHO
University of Idaho / Moscow
West One Bank / US Bank / Coeur d’Alene / 5,234 sq. ft. / 1996

ILLINOIS
2020 Lincoln Park West Apartments / Chicago / 1989
5601 N. Sheridan Building / Chicago / 1980
East Point Condominiums / Chicago / 1987
Illinois Institute of Technology / Chicago / 1976
JM Auto Body / West Chicago / 1993
National School Bus / Prairie View / 1992
Nestle Distribution Center / Chicagoland / 1993
Rand Hurst Shopping Mall / Mount Prospect / 28,000 sq. ft. / 1997
Salt Creek Park District / Palatine / 1995
Valley View Apartments / Rockford / 1984 & 1992
Wexler Meat / Chicagoland / 1991

INDIANA
429 Delaware Building & Prkg. Garage / Indianapolis / 1987
American National Bank / South Bend
Baxter YMCA Indianapolis / 1991 & 1993
Blue River W/W Treatment Plant / Shelbyville / 1992
Delta Faucet Building / Indianapolis / 1983
Edi Corporation / Elkhart / 1989
Globe Furniture Rental / Indianapolis / 1991
Mainscape / Fishers / 6300 sq. ft. / 1995
Meridian Plaza / Indianapolis / 1991
Park 100 Office Park / Indianapolis / 1989
Rainbird / Indianapolis / 1991
Shadeland Station / Indianapolis / 1990
Silk Concepts / Indianapolis / 1991
Stenz & Associates / Indianapolis / 1988
Wallgreens Store / Indianapolis / 1992
Washington Village / Indianapolis / 1993

MASSACHUSETTS
Thought Farms, Inc. / West Acton / 1988

LOUISIANA
J.H. Williams School / Abbeville / 10,000 sq. ft. / 1994 to 1996
Kaplan Elementary School / Kaplan / 9,576 sq. ft. / 1994
Kaplan Middle School / Kaplan / 9,468 sq. ft. / 1994
Louisiana National Guard / New Orleans / 4,800 sq. ft. / 1994
Riviana Foods - Silos / Abbeville / 6,800 sq. ft. / 1995

MINNESOTA
Bergwall Arena / Redwing

MISSOURI
J.C. Penney Distribution Center / Grandview / 1994

MONTANA
Forsyth High School Gym / Forsyth / 4,655 sq. ft. / 1998
Polson Golf Course Club House / Polson / 1,800 sq. ft. / 1993
St. Ignatius School / Ronan / 1990
Thompson Peak Lookout / Superior / 1985

NEVADA
El Dorado / Las Vegas / 14,000 sq. ft. / 1999
First National Bank of Nevada / Reno
Pecos Plaza / Las Vegas / 1994

NORTH DAKOTA
Amoco Oil Company / Mandan / 1984

OHIO
AT&T Generator Hut I / Cleveland / 1996
Data Center - Provident Bank / Cincinnati / 1991
Lakeview Office Towers / Cincinnati / 1992
Ramada Inn / Wadsworth / 1993
Stark County Courthouse / Canton / 1994
United Methodist Church / Millersburgh / 1992
Waterford Estates / Vermillion / 1993

OKLAHOMA
Grace Fellowship Church / Tulsa / 1988

OREGON
Tillamook County General Hospital / Tillamook / 1984

PENNSYLVANIA
AT&T Generator Hut II / Philadelphia / 1996

RHODE ISLAND
Belmonts Shoppers Park / Wakefield / 1987
Fred Smith Chrysler-Plymouth / Wakefield / 1987
New England Foundry / Providence / 1987
Pinguino’s Gelato / Wakefield / 1987

TENNESSEE
99 Tower Place Apartments / Memphis / 1994
Abundant Living Church / Kingsport / 1991
Business Mens Club / Memphis / 6,500 sq. ft. / 1998

TEXAS
Ennis School District / Ennis / 1993
Holiday Inn / Austin / 1995
Johnson & Johnson / Sherman / 1994

VERMONT
Eveready Battery Company / Bennington / 1994

WASHINGTON
Bellingham Towers Apartments / Bellingham / 1981
Bon Marche – Alderwood Mall / Lynnwood / 16,200 sq. ft. / 1998
Chukamut & Washington Square Condos / Bellingham / 1981
Crestview Apartments / Seattle
Eastside Community Center / Spokane / 1987
Lincoln First Federal Bank / Kent
Monroe State Reformatory-Exterior Wall / Monroe / 1981
Northaven Retirement Apartments / Seattle / 27,000 sq. ft. / 1994
Smith Tower Apartments / Vancouver / 1987

CANADA
Abramson Farm / Winnipeg, MB / 1988
Assef Court / Thunder Bay, ON / 1986
Avord Towers / Regina, SK / 35,000 sq. ft. / 1989
Catholic Convent / Winnipeg, MB / 1984
Elizabeth Court / Thunder Bay, ON / 1987
Harborview Terrace / Thunder Bay, ON
Larson Produce / Radville, SK / 2,500 sq. ft. / 1998
Manion Court / Thunder Bay, ON / 1986
Mathews Court / Thunder Bay, ON / 1985
Post Office / Jasper, AB / 1985
Regency Towers / Thunder Bay, ON / 1987
St. Joseph’s Heritage Convent / Thunder Bay, ON
Wardrobe Court / Thunder Bay, ON / 1985

UNITED COATINGS
LONGEVITY BY DESIGN
19011 E. Cataldo•Greenacres, WA 99016
(509) 926-7143 • Fax: (509) 928-1116
(800) 541-4383•www.unitedcoatings.com
Technical Data & Application Instructions

PRODUCT DESCRIPTION
ACRYCLAD is an advanced acrylic emulsion coating with excellent adhesion to a variety of surfaces, as well as extreme ultraviolet resistance for long term weather exposure applications. ACRYCLAD possesses a satin sheen that is aesthetically attractive as well as functional in releasing dirt and pollution from the coated surface. The flexibility inherent in ACRYCLAD allows for durable performance in all types of weather exposure situations.

BASIC USES
ACRYCLAD was developed as a protective finish for interior or exterior exposure on a variety of surfaces including wood, hardboard siding, concrete, masonry, plaster, galvanized metal, aluminum, steel and existing painted surfaces. ACRYCLAD can also be used on primed wood surfaces and primed metal surfaces.

ACRYCLAD exhibits excellent abrasion resistance and can also be used on properly prepared horizontal substrates. A fine silica aggregate is recommended for those applications requiring non-skid texture. This aggregate mixture also provides an aesthetically pleasing wall dressing that effectively even out texture variations on vertical substrates.

COLORS
ACRYCLAD is available in standard white and selected tint bases. UNITED has the color tinting facilities to custom match virtually any color, from pastels to accent colors. Color chips or samples must be furnished to UNITED for all custom colors.

PHYSICAL PROPERTIES
1. Solids by Weight: 60% (±2%) [ASTM D2369]
2. Solids by Volume: 45% (±2%) [ASTM D2697]
3. Weight per Gallon: 11.6 lbs (±.5) [ASTM D1475]
4. Pencil Hardness: 1 H pencil [ASTM D3363]
5. Flexibility: Passes ¼” mandrel bend to -5°F
6. Taber Abrasion Index: 210 mg. loss w/CS-17 wheels [ASTM D4060]
7. Dry Time to Touch: 30 minutes [ASTM D1640]
8. Dry Time to Recoat: 1 hour @ 70°F, 50% R.H. [ASTM D1640]
9. Cure Time: 24 hours @ 70°F, 50% R.H. [ASTM D1640]
10. Gloss: 5 (60° Gardner) [ASTM D523]

ADVANTAGES
• High performance protection for both interior and exterior exposure.
• Single-package, waterborne system for ease of application.
• Rich acrylic formulation designed for maximum ultraviolet and weather resistance.
• Bonds tenaciously to concrete, masonry, wood, galvanized metal and primed metal surfaces.
• No toxic odor or objectionable smell.
• Conforms to all Federal and State air pollution standards.
• Cleanup is easily accomplished with warm, soapy water.
• Color selection is virtually unlimited.
• Low temperature cure to 40°F (4°C)
• Ultra low VOC (<50 g/l)
• Superior crack bridging capability
Bare wood and metal surfaces must be clean and dry, with any rust or loose paint removed. Prime with 
**Primer 708** or **Acrylex 400** applied at the recommended coverage rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l). **Primer 708** will provide adhesion to bare wood and concrete surfaces, while **Acrylex 400** will provide stain blocking on bare wood and corrosion resistance over metal.

Weathered galvanized metal and previously painted surfaces require a thorough power washing to remove dust, dirt, debris and loose paint prior to the application of ACRYCLAD. Bare concrete, brick, stucco or masonry must be structurally sound, clean, dry, fully cured and free from dust, curing agents or form release agents, efflorescence, scale or other foreign materials. On newly poured-in-place concrete, use a non-staining form release agent that is either easily removed or is poured-in-place concrete, use a non-staining form release agent that is either easily removed or is designed to be compatible with surface coatings. ACRYCLAD may be applied directly to clean, sound surfaces of concrete, brick or stucco.

Prior to application over vertical masonry block, a quality acrylic block filler must be used to fill the pores and achieve a pinhole-free surface. Application of a block filler will maximize the effectiveness of the ACRYCLAD topcoat. The amount of block filler required to uniformly fill or surface a masonry block or other porous substrate will depend upon the texture and porosity of the surface.

**PREVIOUSLY PAINTED SURFACES:** All dust, dirt, efflorescence and loosely adhering paint or coating shall be removed. Paint that shows failure due to alkalies and moisture, which is recognizable by flaking, peeling and white deposits, should be completely removed. Chalky or oxidized surfaces must be washed with United Cleaning Concentrate (UCC) or equal, and thoroughly power rinsed with clean, fresh water prior to application of ACRYCLAD. UCC is a 100% biodegradable cleaner formulated with wetting agents and surfactants. It is non-toxic, non-polluting and will not harm ground vegetation, septic tanks or sewer systems. UCC should be diluted at a 10 to 1 ratio with water.

The diluted cleaning solution is then applied to the substrate at 150 to 200 sq. ft. per gallon and allowed to stand for a minimum of 15 minutes. The cleaning solution is then rinsed from the surface with water under high pressure, utilizing either conventional spray or pressure washing equipment. A sample application of ACRYCLAD should then be applied to confirm adequate adhesion. If test indicates poor or marginal adhesion, surfaces shall be primed with UNITED’S **Primer 708** at 300 to 400 sq. ft. per gallon (7.3 to 9.8 m²/l).

**APPLICATION**

ACRYCLAD may be applied by brush, roller or airless spray. Any airless spray equipment capable of 2000 psi (13,790 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used for applying ACRYCLAD. A reversible self-cleaning spray tip with orifice size of .013” to .019” (.33 to .48 mm) and a minimum 40 degree fan angle is recommended. For optimum long-term performance, ACRYCLAD should be back-rolled on applications using airless spray.

ACRYCLAD applied at the rate of one gallon per 100 sq. ft. will theoretically yield 7.2 dry mils (183 microns). ACRYCLAD should be applied in two separate coats at 250 to 350 sq. ft. per gallon (7.3 to 9.8 m²/l) per coat. Coverage rates will vary with surface texture, surface porosity and method of application. Darker colors may require additional coats for full color uniformity. Coats should be applied in alternating directions or by cross-hatch method to assure even coverage and texture. All tools and equipment can easily be cleaned with warm, soapy water.

**PACKAGING AND MIXING**

ACRYCLAD is a single package material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (209 liter) drums. ACRYCLAD should be thoroughly mixed prior to application. Use of a power mixer with a blade capable of uniformly mixing the entire container is recommended.

**LIMITATIONS & PRECAUTIONS**

ACRYCLAD requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply during or before weather conditions such as rain, fog or freezing temperatures.

Do not apply ACRYCLAD at temperatures below 50°F or when there is a possibility of temperatures falling below 32°F within a 24 hour period. ACRYCLAD will freeze and become unusable at temperatures below 32°F. Do not ship or store unless protection from freezing is available. For additional information, refer to OSHA guidelines and ACRYCLAD Material Safety Data Sheet.
AQUATHON
FIVE (5) YEAR LIMITED PRODUCT
WARRANTY EXPLANATION
For the Waterproofing of Exterior Walls

The enclosed properly completed Warranty Request Form is required by UNITED COATINGS in order for the AQUATHON Five (5) Year Waterproofing Warranty to be issued:

1. The Warranty:
This Warranty is a guarantee to the Building Owner that the AQUATHON coating system will not leak water over a 5-year period due to deterioration as the result of ordinary weather conditions. This Warranty is not to be used for any other purpose unless specifically approved in writing by an officer of UNITED COATINGS.

2. Warranty Request Form:
A. When the job is complete, the coating Contractor must submit the Warranty Request Form to UNITED Headquarters for issuance of the Warranty.

B. The properly completed Warranty Request Form by the Contractor certifies the application to be in accordance with UNITED'S current published application instructions.
WARRANTY REQUEST FORM FOR
AQUATHON FIVE (5) YEAR
LIMITED PRODUCT WARRANTY PROGRAM

1. Name of Project: 
   Address: 
   City: State: Zip: 

2. Name of Approved Contractor: 
   Address: 
   City: State: Zip: Phone: 

3. Name of Architect: 
   Address: 
   City: State: Zip: Phone: 

4. Owner of Building: 
   Address: 
   City: State: Zip: Phone: 

   Owner's Representative: 

5. Area: sq. ft. 6. Type of Substrate: 

7. Total Gallons Used: Color 
   First Coat: (Gallons) Second Coat: (Gallons) Third Coat: (Gallons) 

8. Total Dry Mils Required: Actual Dry Mils Achieved: 

9. Date Application a. Commenced b. Completed 

I hereby certify that the above information is correct and that this coating application is in accordance with UNITED'S current published AQUATHON Application Instructions as stated. I agree to the terms and conditions of UNITED COATINGS’ Five (5) Year Limited Product Warranty, which may be issued pursuant to receipt of this this Warranty Request Form.

Approved Contractor

(Signature) Date on AQUATHON Application Instructions on file: 

Printed Name
**UNITED COATINGS**  
**AQUATHON**  
**5-Year Limited Product Warranty**  
For The Waterproofing of Exterior Walls

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
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<tbody>
<tr>
<td>Approved Contractor</td>
<td>Address</td>
<td>City</td>
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<td>Zip</td>
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A. UNITED COATINGS warrants to the Building Owner that, for a period of 5-Years from date of completion, AQUATHON will not leak water due to deterioration as the result of ordinary weather conditions. If the coating leaks as a result of ordinary weather conditions, UNITED will supply at no charge sufficient AQUATHON System Components needed to repair said leaks. This Warranty is expressly conditioned upon Coatings Applicator's obligation to apply the coating material in strict accordance with UNITED'S current published instructions covering surface preparation, coating application and precautions.

B. This Warranty is expressly conditioned upon:

1. UNITED COATINGS' liability to the Building Owner for any defect, failure or deficiency that is covered by this Warranty shall be expressly conditioned upon the Building Owner's obligation to notify UNITED COATINGS in writing within seventy-two (72) hours of the date that defect or damage is discovered. UNITED COATINGS shall then have the right to immediately inspect the defect, and if not given this right, the Warranty shall be terminated.

2. UNITED COATINGS shall not be responsible for repairs made by others who are not authorized to make such repairs.

C. This Warranty does not cover failure of the coating due to:

1. Damage to the coating, property, building or contents caused by fire, settlement, faulty construction or design, defects in the substrate, movement, misuse of structure or other failure of the structure.

2. Damage to the coating due to natural causes, including but not limited to floods, lightning, hail, windstorms, cyclones, hurricanes, tornadoes, earthquakes or other extraordinary or unusual events.

3. Vandalism, penetration or damage caused by third parties or foreign objects or agents, including plant or animal life.

4. Failure of the substrate or materials used in the repair of the substrate, including caulk and/or patching compounds.

D. If Coatings Applicator or Building Owner fails to make payment to UNITED COATINGS and/or its Distributor, this Warranty shall be void.

E. This Warranty is for the benefit of the initial purchaser, and shall not be transferable or assignable to any other persons, firms or corporations except with the prior express written consent signed by a duly authorized officer of UNITED COATINGS.

F. UNITED COATINGS will not be liable for any direct, indirect, consequential, incidental, special or general damages of any kind from whatever cause which may arise as the result of deterioration of said coating, except to supply all UNITED COATING material in accordance with the Warranty. It is expressly understood and agreed that UNITED COATINGS shall in no way be deemed or held to be obligated, liable or accountable upon or under any guarantees or warranties, express or implied, including any implied Warranty of merchantability or fitness for a particular use, or otherwise beyond this express Warranty.

G. This Warranty is not effective unless executed by an authorized officer of UNITED COATINGS, the Approved Contractor and the Owner.

<table>
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<tr>
<th>UNITED COATINGS</th>
<th>Approved Contractor</th>
<th>Owner or Owner's Representative</th>
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<tr>
<td>Signature</td>
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Valid when copy of this warranty, executed by all parties, is on file at UNITED COATINGS' Warranty Department, Spokane Valley, WA.
The enclosed properly completed Warranty Request Form is required by UNITED COATINGS in order for the AQUATHON Ten (10) Year Waterproofing Warranty to be issued:

1. **The Warranty:**
   This Warranty is a guarantee to the Building Owner that the AQUATHON coating system will not leak water over a 10-Year period due to deterioration as the result of ordinary weather conditions. This Warranty is not to be used for any other purpose unless specifically approved in writing by an officer of UNITED COATINGS.

2. **Warranty Request Form:**

   A. When the job is complete, the coating Contractor must submit the Warranty Request Form to UNITED Headquarters for issuance of the Warranty.

   B. The properly completed Warranty Request Form by the Contractor certifies the application to be in accordance with UNITED'S current published application instructions.
Mail to: UNITED COATINGS  
19011 E. Cataldo  
Spokane Valley, WA 99016  
Warranty Number: ___________  
Date: ___________

ATTENTION WARRANTY DEPARTMENT

WARRANTY REQUEST FORM FOR  
AQUATHON TEN (10) YEAR  
LIMITED PRODUCT WARRANTY PROGRAM

1. Name of Project: ____________________________
   Address: __________________________________
   City: ___________________ State: ___________ Zip: ___________

2. Name of Approved Contractor: ___________________________________________________________________
   Address: ___________________________________________________________________________________________
   City: ___________________ State: ___________ Zip: ___________ Phone: ____________________

3. Name of Architect: __________________________________________________________
   Address: ___________________________________________________________________________________________
   City: ___________________ State: ___________ Zip: ___________ Phone: ____________________

4. Owner of Building: _______________________________________________________
   Address: ___________________________________________________________________________________________
   City: ___________________ State: ___________ Zip: ___________ Phone: ____________________
   Owner's Representative: ____________________________________________________________

5. Area: ______________ sq. ft.  
6. Type of Substrate: ____________________________________________________________

7. Total Gallons Used: ___________________ Color ____________________________
   First Coat: ___________________ Second Coat: ___________________ Third Coat: ________________
   (Gallons)  (Gallons)  (Gallons)

8. Total Dry Mils Required: ___________________ Actual Dry Mils Achieved: ________________

9. Date Application a. Commenced ___________________ b. Completed ____________________

I hereby certify that the above information is correct and that this coating application is in accordance with UNITED'S current published AQUATHON Application Instructions as stated. I agree to the terms and conditions of UNITED COATINGS' Ten (10) Year Limited Product Warranty, which may be issued pursuant to receipt of this Warranty Request Form.

Approved Contractor

______________________________  
(Signature)  
Date on AQUATHON Application  
Instructions on file: ________________

______________________________  
Printed Name
UNITED COATINGS
AQUATHON
10-Year Limited Product Warranty
For The Waterproofing of Exterior Walls

Name of Project
Address City State Zip

Approved Contractor
Address City State Zip

A. UNITED COATINGS warrants to the Building Owner that, for a period of 10-Years from date of completion, AQUATHON will not leak water due to deterioration as the result of ordinary weather conditions. If the coating leaks as a result of ordinary weather conditions, UNITED will supply at no charge sufficient AQUATHON System Components needed to repair said leaks. This Warranty is expressly conditioned upon Coatings Applicator's obligation to apply the coating material in strict accordance with UNITED'S current published instructions covering surface preparation, coating application and precautions.

B. This Warranty is expressly conditioned upon:

1. UNITED COATINGS' liability to the Building Owner for any defect, failure or deficiency that is covered by this Warranty shall be expressly conditioned upon the Building Owner's obligation to notify UNITED COATINGS in writing within seventy-two (72) hours of the date that defect or damage is discovered. UNITED COATINGS shall then have the right to immediately inspect the defect, and if not given this right, the Warranty shall be terminated.

2. UNITED COATINGS shall not be responsible for repairs made by others who are not authorized to make such repairs.

C. This Warranty does not cover failure of the coating due to:

1. Damage to the coating, property, building or contents caused by fire, settlement, faulty construction or design, defects in the substrate, movement, misuse of structure or other failure of the structure.

2. Damage to the coating due to natural causes, including but not limited to floods, lightning, hail, windstorms, cyclones, hurricanes, tornadoes, earthquakes or other extraordinary or unusual events.

3. Vandalism, penetration or damage caused by third parties or foreign objects or agents, including plant or animal life.

4. Failure of the substrate or materials used in the repair of the substrate, including caulk and/or patching compounds.

D. If Coatings Applicator or Building Owner fails to make payment to UNITED COATINGS and/or its Distributor, this Warranty shall be void.

E. This Warranty is for the benefit of the initial purchaser, and shall not be transferable or assignable to any other persons, firms or corporations except with the prior express written consent signed by a duly authorized officer of UNITED COATINGS.

F. UNITED COATINGS will not be liable for any direct, indirect, consequential, incidental, special or general damages of any kind from whatever cause which may arise as the result of deterioration of said coating, except to supply all UNITED COATING material in accordance with the Warranty. It is expressly understood and agreed that UNITED COATINGS shall in no way be deemed or held to be obligated, liable or accountable upon or under any guarantees or warranties, express or implied, including any implied Warranty of merchantability or fitness for a particular use, or otherwise beyond this express Warranty.

G. This Warranty is not effective unless executed by an authorized officer of UNITED COATINGS, the Approved Contractor and the Owner.

UNITED COATINGS
Spokane Valley, Washington

Approved Contractor
Owner or Owner's Representative

Signature
Signature
Signature

Title
Title
Title

Valid when copy of this warranty, executed by all parties, is on file at UNITED COATINGS' Warranty Department, Spokane Valley, WA.
ELASTUFF 210
100% SOLIDS, PURE ALIPHATIC POLYASPARTIC POLYUREA FINISH

Technical Data & Application Instructions

PRODUCT DESCRIPTION

ELASTUFF 210 is a high performance, 100% solids coating manufactured using pure aliphatic polyaspartic polyurea resins. It forms a highly cross-linked, durable membrane exhibiting excellent gloss and color retention. ELASTUFF 210 was formulated to achieve an ideal balance of physical properties, including exceptional tensile strength, tear strength and hardness, while maintaining excellent flexibility. Its high durometer finish also exhibits outstanding chemical, abrasion, impact and high heat resistance.

Although it is 100% solids, ELASTUFF 210 has an extended pot life, allowing application using standard airless spray equipment, notched trowel or squeegee, as well as brush or roller for small or confined areas. It can be used on its own, or as a topcoat over other polyurea, polyurethane or hybrid elastomers.

ELASTUFF 210 is a 2-component, highly cross-linked coating, providing a dense, tight film with good chemical resistance to a wide range of acids and bases. It also exhibits excellent hydrolytic stability to withstand a wide range of temperature extremes, in dry or aqueous environments.

BASIC USES

ELASTUFF 210 was especially developed as a superior UV and color stable finish for protecting a variety of horizontal substrates. It is an ideal choice for sealing and protecting concrete floors in factories and warehouses, as well as pedestrian and vehicular traffic decks, hangars, stadiums, decks, balconies and lanais. ELASTUFF 210 is also an ideal choice for protecting aromatic basecoats from extended exterior exposure, or for use on its own for protecting primed steel, concrete, masonry and fiberglass substrates.

While ELASTUFF 210 is self-leveling when used on horizontal applications, it can be used on vertical surfaces as well; wherever a tough, ultraviolet resistant coating is desired. For non-skid properties, silica sand, aluminum oxide or other light aggregate can be broadcast into the wet membrane.

TYPICAL PROPERTIES

1. Ratio: 1:1 By Volume
2. Solids By Weight: 100% [ASTM D1644].
3. Solids By Volume: 100% [ASTM D2697]
4. Weight Per Gallon: Part A = 9.3 lbs. (4.2 kg) Part B = 8.8 lbs. (4.0 kg)
5. Gel Time: 45 minutes @ 75°F (24°C), 50% R.H.
6. Dry Time: 2 Hours @ 75°F (24°C), 50% R.H.
7. Cure Time: 72 Hours
8. Ultimate Tensile Strength: 2,500 psi (± 500) (17.2 MPa) @ 75°F (24°C) [ASTM D412]
9. Elongation at Break: 20% (±2) @ 75°F (24°C) [ASTM D412]
10. Hardness: 75 to 80 Shore D [ASTM D2240]
11. Adhesion: Primed Concrete: 500 to 1,700 psi (±50) (3,448 to 11,724 kPa) Cohesive failure within concrete Primed Steel: 2,000 psi (±50) (13,793 kPa)
12. High Temperature Stability: No age hardening or slump
13. Cold Temperature Flexibility: Passes ¼" (6 mm) mandrel bend at -4°F (-20°C) (Federal Test Method No. 141a-6221)
14. Temperature Limits For Normal Service Conditions -30°F to 180°F (-35°C to 82°C)

COLORS

ELASTUFF 210 is available in standard White, Light Gray and Clear. An unlimited selection of custom colors is also available to meet specific project requirements. Color chips or samples must be furnished to UNITED for all custom colors.

SHELF LIFE

The shelf life of ELASTUFF 210 in unopened containers is 12 months from date of shipment from UNITED’s factory.
PACKAGING & MIXING

ELASTUFF 210 is a two-component, 1:1 ratio material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Blend equal volumes of Part A and Part B using a mixer with a blade capable of uniformly mixing the entire container. Do not mix more material than can be applied within 45 minutes. Thinning or reducing the material is not recommended.

SURFACE PREPARATION

All surfaces must be clean and dry, and free from dirt, grease, oils, curing or release agents, soapy films, pollution fallout, surface chemicals, unsound rust, scale, loose paint or coating, and other contaminants that may interfere with optimum adhesion.

Glossy surfaces must by dulled by abrading the surface using brush blasting, sanding or other mechanical means. Chalky, oxidized or other contaminated surfaces must be washed with United Cleaning Concentrate (UCC) or equivalent biodegradable cleaner. Heavy deposits of dirt or contamination may require agitation with a stiff-bristle broom or similar mechanical scrubber.

Metal surfaces must be free of rust scale, forming oils, metal slivers and weld slag, and chemically cleaned or blast abraded as per specific project requirements.

The cleaned or blasted surface shall be primed by the end of the same workday, but in any event before any visible rust occurs. Prime with UNITED'S Lock-Down or Primer 302 applied at approximately 300 sq. ft. per gallon (7.3 m²/l). If rusting occurs after cleaning, the surfaces must be re-cleaned prior to coating.

Concrete surfaces must be free from curing and form release agents, surface chemicals, sharp projections, ridges and loose aggregate. Restore any loose aggregate using Uni-Crete or similar polymer modified cement patching or resurfacing compound. Concrete surfaces having a smooth, steel trowelled finish should be acid etched or sandblasted. Prime concrete with UNITED’S Uni-Tile Sealer LV at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12.2 m²/liter), reducing as necessary depending on the porosity of the substrate. See separate Surface Preparation Technical Bulletin or individual product Technical Data Sheets for additional surface preparation and primer application instructions.

ELASTUFF 210 adheres directly to most clean fiber-glass and plastic surfaces. New or dense surfaces should be scuff-sanded prior to priming.

COATING APPLICATION

ELASTUFF 210 may be applied using standard airless spray, notched trowel or squeegee, and brush or roller. If using airless spray equipment, do not mix more than can be applied in 30 minutes. Do not leave catalyzed material in pump or hoses. A reversible, self-cleaning spray tip with an orifice size of .021” to .035” (.53 to .89 mm) and minimum 40 degree fan angle is recommended. Regardless of the application method, do not apply more than 10 wet mils (254 wet microns) per coat.

Coverage rate will vary depending upon the substrate, its surface profile and porosity, and the conditions of use. One or two coats, applied at the rate of 150 to 200 sq. ft. per gallon (3.7 to 4.9 m²/l), are usually sufficient for protecting most surfaces. As a topcoat over aromatic basecoats, or for light duty service, a single coat is normally adequate.

For flooring applications, and other medium duty service, 2 separate coats are required. To achieve a non-skid surface, broadcast 20 to 40 mesh, dust-free aggregate (silica sand, aluminum oxide, walnut shell, etc.) into the wet coating to the point of saturation. Once dry, sweep off the excess and apply an additional coat over the top to encapsulate the embedded aggregate. For high use or heavy service floors, 2 coats of aggregate should be applied prior to the final topcoat.

A second coat of ELASTUFF 210 can be applied as soon as the first has thoroughly dried (approximately 2 hours), and should normally be completed within 48 hours from application of the first coat. Surfaces that have become contaminated must be cleaned prior to topcoating.

Use M.E.K. or Methylene Chloride to flush equipment. Purge the cleaning solvent from the system using Mineral Spirits or Glycol Ether prior to extended storage.

LIMITATIONS & PRECAUTIONS

ELASTUFF 210 components are affected by moisture prior to catalyzation and must be protected from moisture contamination. After opening and if all components are not used, purge with nitrogen or dry air and tightly sealed to protect the components from moisture contamination. Keep all containers tightly closed during storage.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

For specific information on safety requirements. Refer to OSHA guidelines and ELASTUFF 210 Material Safety Data Sheet.
Available in smooth and textured finishes

Single package, water-based system for ease of application and cleanup

Bonds tenaciously to concrete, masonry, stucco and asphalt surfaces

Resists ultraviolet degradation for long term protection and color stability

Provides durable, non-skid texture on interior or exterior surfaces

Resists wear and abrasion through the incorporation of an epoxy additive

Protects against asphalt degradation by sealing in the vital oils of the asphalt mix

Helps prevent dusting and spalling of concrete surfaces

Surfaces resist penetration from general soils, motor oils and gasoline for ease in cleaning

No toxic fumes or objectionable odor. Meets all VOC requirements

RHINO TOP was specifically developed for use over concrete, masonry, stucco, plaster and asphalt surfaces where a durable colored coating is required.

Produced by UNITED COATINGS Manufacturing Inc. www.unitedcoatings.com
Spokane Valley, WA & Tempe, AZ ©2004 (rtfly3-10-04)
RHINO TOP is a high quality water-based acrylic finish incorporating an epoxy additive to increase the abrasion resistance properties of the film. A special spherical silica sand is suspended in the emulsion to provide a fine uniform texture. This silica can be eliminated for projects requiring a smooth finish.

RHINO TOP provides a durable colored topping for horizontal concrete and asphalt surfaces. In addition, its satin sheen makes RHINO TOP an aesthetically pleasing wall dressing that effectively evens out texture and color variations over various concrete substrates.

RHINO TOP is also specified as a fine texture, weather resistant colored finish on vertical surfaces such as building exteriors, highway bridge structures, median barriers, retaining walls and noise abatement walls. In addition, RHINO TOP is effective over ROOF MATE or other roof coatings to delineate walkways and/or service areas, as well as incorporate non-skid properties.
RHINO TOP
ACRYLIC/EPOXY EMULSION COATING

Technical Data & Application Instructions

PRODUCT DESCRIPTION

RHINO TOP is a high quality, water-based acrylic coating that incorporates an epoxy additive to increase its abrasion resistance. A special spherical silica sand is suspended in the textured version to provide a fine uniform non-skid finish.

RHINO TOP provides a durable colored topping for horizontal concrete and asphalt surfaces. Its satin sheen makes RHINO TOP an aesthetically pleasing wall dressing that effectively evens out texture and color variations on cast concrete substrates.

BASIC USES

RHINO TOP was specifically developed for use over concrete, masonry, stucco, plaster and asphalt. Its epoxy-modified acrylic finish is designed to resist abrasion, weathering and moisture degradation. RHINO TOP is recommended for use on recreational courts, walkways, pool decks, tennis courts, patio decks and floors. It provides a finely textured, weather-resistant colored finish on vertical surfaces such as building exteriors, highway bridge structures, median barriers, retaining walls and noise abatement walls. In addition, RHINO-TOP may be used over ROOF MATE or other roof coatings to delineate walkways and service areas, as well as to incorporate non-skid properties.

RHINO TOP can also be used in combination with Uniflex 101 Basecoat on applications requiring a waterproof membrane topcoated with a non-skid colored finish. This system is particularly effective on above grade tennis courts and recreational decks as well as balconies and lanais.

PACKAGING & MIXING

RHINO TOP is a single package material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. RHINO TOP should be thoroughly mixed prior to application utilizing a power mixer capable of uniformly mixing the entire container. When using the textured formulation, mix the container periodically to prevent settling of the non-skid texture aggregate.

PHYSICAL PROPERTIES

1. Solids by Weight: 52% [ASTM D2369]
2. Solids by Volume: 38% [ASTM D2697]
3. Weight per Gallon: 10.5 lbs. (4.8 kg) (+.5)
4. Flash Point: >200°F (93°C) [ASTM D3278]
5. Dry Time: 30 minutes to touch 1 to 2 hours for recoat @ 75°F (24°C), 50% R.H. [ASTM D1640]
6. Cure Time: 48 hours @ 75°F (24°C), 50% R.H. [ASTM D1640]
7. Gloss: 2.5 (60° Gardner) [ASTM D523]
8. Hardness: 3H pencil [ASTM D3363]
9. Temperature Limits for Normal Service Conditions: -30°F to 150°F (-34°C to 66°C)

ADVANTAGES

- Single package, water-based system for ease of application and cleanup.
- Bonds tenaciously to concrete, masonry and asphalt surfaces.
- Resists ultraviolet degradation for long-term protection and color stability.
- Provides durable, non-skid texture on interior or exterior surfaces.
- Resists wear and abrasion through the incorporation of an epoxy additive.
- Protects against asphalt degradation by sealing in the vital oils of the asphalt mix.
- Helps prevent dusting and spalling of concrete surfaces.
- Surfaces resist penetration from general soils, motor oils and gasoline for ease in cleaning.
- No toxic fumes or objectionable odor; meets all VOC requirements.
COLORS

RHINO TOP is available in ten standard colors: Flint Gray, Concrete Gray, Smoke Gray, Burlap, Sandstone, Brownstone, Tile Red, Turf Green, Black, and White. Custom color selection is virtually unlimited to meet specific project requirements. Color chips or samples must be submitted to UNITED for all custom colors.

SURFACE PREPARATION

All surfaces must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale or other foreign contaminants. Concrete and masonry surfaces shall be free of sharp projections, ridges and loose aggregate. Prior to application over vertical masonry block, a quality acrylic block filler must be used to fill the pores and achieve a pinhole-free surface.

Concrete or asphalt surfaces can be repaired, sloped or resurfaced utilizing UNITED’S Uni-Crete, a polymer modified concrete. Mix with water to the desired consistency and apply as per instructions on container.

New concrete must be allowed to cure a minimum of 28 days. It shall then be cleaned with United Cleaning Concentrate (UCC) before etching and rinsing with liberal amounts of fresh water to assure complete acid removal. Sandblasting of concrete will be required if the surfaces are contaminated to the point that alternate cleaning methods are ineffective. Concrete surfaces having a smooth, steel-trowelled finish must be acid etched or sandblasted.

All asphalt shall be allowed to age a minimum of 60 days prior to the application of RHINO TOP. A test application is recommended over new asphalt to assure there is no bleed-through of the asphaltic oils.

Prior to sealer application, all loose material, foreign objects, dirt and dust shall be removed by use of a power vacuum or compressed air. Immediately following final cleaning, concrete and asphalt surfaces shall be sealed with one coat of Uni-Tile Sealer LV or Uniseal respectively. After the sealer has completely dried, existing hairline cracks will be filled with an approved acrylic or single-component urethane sealant. All cracks larger than hairline should be considered as "moving" and shall be routed and cleaned prior to application of sealant. Sealant shall be trowelled flush with sufficient pressure to fill the cracks and joints completely. At the intersection of all vertical and horizontal surfaces, apply a ½" (1.3” cm) sealant bead, tooled slightly concave, and extended a minimum of 1½” (3.8” cm) vertically and horizontally. Brush backer-rod or other bond breaker on moving cracks.

APPLICATION

Prior to the application of RHINO TOP, concrete surfaces shall be primed with one coat of Uni-Tile Sealer LV applied at the rate of 400 to 500 sq. ft. per gallon (9.8 to 12.2 m²/l). Over asphalt surfaces, or over concrete when an all water-based system is required, prime with UNITED’S Uniseal. Reduce as necessary with water to achieve adequate penetration over dense surfaces. Apply the primer at the rate of 200 to 250 sq. ft. per gallon (4.9 to 6.1 m²/l) over asphalt, or 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l) over concrete.

For additional details on primer application, refer to separate literature entitled Uni-Tile Sealer LV or Uniseal Technical Data & Application Instructions.

RHINO TOP may be applied by brush, roller or airless spray. The textured finish must be roller applied utilizing a ¼” to ½” (6 to 13 mm) nap roller. Brush application can be used for edge work or confined areas inaccessible by roller. Airless spray may be utilized to apply the smooth finish over substrates that have a heavy surface texture already or do not require non-skid protection.

RHINO TOP shall be applied in two (2) separate coats to assure even coverage and proper film build. Apply at the rate of 200 to 250 sq. ft. per gallon (4.9 to 6.1 m²/l) per coat. All surfaces must be uniformly coated and free from voids, pinholes and blisters. Successive coats of RHINO TOP should be applied perpendicularly and as soon as the previous coat has dried sufficiently to allow the applicator to walk back on. This is normally accomplished within 2 hours, but in any event before contamination occurs. If contamination does occur on any coated surface, it must be broomed or if necessary, pressure washed before additional coats are applied. RHINO TOP should extend a minimum of 4” (10 cm) up vertical walls or projections to create a self-terminating flashing.

When RHINO TOP is applied over existing primed metal, apply coating to a small test area to ensure proper adhesion. All bare metal surfaces must be primed with Acrylex 400 applied at 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l).

RHINO TOP cures to an attractive flat finish. If a semi-gloss sheen is desired, or for ease of cleanability in high traffic or other areas subject to dirt pick-up, RHINO TOP may be topcoated with Acrysheen. Apply a single coat at the rate of approximately 200 sq. ft. per gallon (4.9 m²/l) over the final coat of RHINO TOP, once it has dried.

Brush or roller are easily cleaned with soapy water. Clean spray equipment with water and final flush with a mixture of water and Lacquer Thinner or water and Methyl Ethyl Ketone (MEK).

LIMITATIONS & PRECAUTIONS

RHINO TOP requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply during weather conditions such as rain, fog, or freezing temperatures, or if such conditions are imminent.

Do not apply RHINO TOP at temperatures below 50°F (10°C) or when there is a possibility of temperatures falling below 32°F (0°C). Do not ship or store unless protection from freezing is available.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
RHINO PRIME
PENETRATING WATER-BASED EPOXY PRIMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION
RHINO PRIME is a clear, single-component epoxy primer/sealer. It incorporates state of the art water-based technology to produce an extremely versatile product that penetrates and seals porous substrates. It is effective at increasing the bond of Rhino Top, as well as other acrylic, polyurethane, butyl and epoxy topcoats to a variety of surfaces. It will also help to "solidify" punky or chalky surfaces. RHINO PRIME is safe to use, has very little odor, and is easy to clean up.

BASIC USES
RHINO PRIME was specifically designed to penetrate and seal porous substrates and to improve the adhesion of Rhino Top topcoat. It develops a tenacious bond to concrete, asphalt, wood, fiberglass, steel, galvanized and aluminum surfaces. Although RHINO PRIME will greatly enhance the adhesion of various topcoats over metal surfaces, it is not designed to add to the corrosion resistance of the system, beyond what the topcoat provides.

RHINO PRIME will effectively solidify punky or chalky concrete, asphalt or masonry surfaces when used as a primer prior to topcoating. It is also designed to be used on its own as a transparent sealer over interior concrete floors to provide dustproofing and enhanced cleanability characteristics. RHINo PRIME will amber slightly when used on exterior surfaces without a topcoat.

COLOR
RHINO PRIME is manufactured in standard Clear. Black is also available when RHINO PRIME is applied beneath polyurethane foam. The black surface will absorb the sun's radiant heat, enhancing the ability of the polyurethane foam to achieve its maximum yield.

TYPICAL PROPERTIES
1. Solids By Weight: 15% (±1) [ASTM D2369]
2. Solids By Volume: 14% (±1) [ASTM D2697]
3. Weight Per Gallon: 8.4 lbs. (3.8 kg) (±.2) [ASTM D1475]
4. Dry Time To Touch: 30 minutes @ 75°F (24°C) [ASTM D1640]
5. Cure Time: 8+ hours @ 75°F (24°C). Cure and recoating time will vary from 2 to 48 hours depending upon ambient conditions and the type of topcoat being applied. *High humidity and/or low temperature will retard cure and recoat times.
6. Volatile Organic Content (VOC): 330 grams/liter
7. Low & High Temperature Limits: -30°F to 150°F (-34°C to 66°C)

ADVANTAGES
1. ADHESION: RHINO PRIME penetrates and "wets" into porous surfaces, imparting a tenacious chemical and physical bond between the substrate and subsequent topcoat. It is also effective over damp concrete or wood surfaces.
2. NON DUSTING: RHINO PRIME penetrates deeply to eliminate concrete dusting, providing for easy cleanup and minimum maintenance.
3. DEEP PENETRATION: Its low viscosity allows RHINO PRIME to penetrate into and preserve dense surfaces such as smooth-troweled concrete floors, oriented strandboard, fiberglass and various types of metal surfaces.
4. ANTI-SPALLING: Applied to concrete decks, walkways, industrial areas, etc., RHINO PRIME will effectively protect against the intrusion of destructive salts, oils, solvents and gasoline. It also prevents spalling and pitting caused by freeze/thaw cycling.
**PACKAGING & MIXING**

RHINO PRIME is a single-component material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

Stir material prior to application. RHINO PRIME may be reduced with water for increased penetration over dense substrates. Shelf life in unopened containers is one year from date of manufacture. Store at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.

**SURFACE PREPARATION**

All surfaces must be clean and free of any dirt, oil, grease, soapy films, surface chemicals or other foreign contaminants. Slightly damp surfaces will not affect the performance of RHINO PRIME, provided there is no standing water or frost. New concrete should be water-cured in lieu of using a curing compound. Any form of curing compound or release agent on any surface to be sealed with RHINO PRIME must be completely removed, along with any laitance.

Prior to applying RHINO PRIME, all loose material, dirt and dust must be removed by use of a power vacuum, stiff-bristled broom or compressed air. If concrete is badly spalled, restore surface to a reasonable condition using UNITED’S Uni-Crete or other cementitious patching or resurfacing compound. Fiberglass surfaces should be scuff-sanded prior to priming. Metal surfaces must be free of oily residue and loose rust. Previously painted surfaces should be brush blasted or mechanically abraded to remove the existing finish.

New concrete that has been previously cured with a curing compound, or concrete that has been smooth trowelled, shall be cleaned and etched with 10% Muratic Acid solution. Wash with United Cleaning Concentrate (UCC), and follow with a rinse of clean water.

Existing concrete must be cleaned using United Cleaning Concentrate or similar biodegradable chemical cleaner and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the chemical cleaner. If general cleaning is not adequate, then surfaces should be cleaned and etched as recommended for new concrete.

If surfaces are highly contaminated, or if surfaces are to be subjected to unusual service conditions, consult UNITED’S Technical Service Department for recommendations.

**APPLICATION**

RHINO PRIME may be applied by brush, roller or spray. Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6,980 kpa) and ½ gallon per minute (1.9 l/minute) can be used. A reversible, self-cleaning spray tip with an orifice size of .015” to .027” (.4 mm to .7 mm) and minimum 40 degree fan angle is recommended. Before spraying, flush equipment with clean water to prevent contamination.

Coverage rate will vary depending upon surface porosity. One coat is usually sufficient for sealing substrates when RHINO PRIME is used as a primer. When used as a sealer/finish, two coats are required to achieve a uniform sheen. Two coats may also be required when sealing lightweight concrete or other highly porous surfaces. The following are approximate application rates:

- **Concrete:** 250 to 300 sq. ft./gallon (6.1-7.3 m²/l)
- **Lightweight Concrete:** 100 to 150 sq.ft./gal. (2.4-3.7 m²/l)
- **Wood:** 300 sq. ft./gallon (7.3 m²/l)
- **Fiberglass:** 300 to 400 sq. ft./gal. (7.3-9.8 m²/l)
- **Metal:** 300 to 400 sq. ft./gal. (7.3 - 9.8 m²/l)

Thin as necessary with water to achieve adequate penetration of the surface being sealed. When used as a sealer/finish apply a second coat of RHINO PRIME at approximately 50% greater coverage rate than those listed above. When used as a primer on exterior applications, RHINO PRIME should be topcoated within 48 hours to ensure optimum bonding characteristics. Do not permit RHINO PRIME to puddle or “glaze” over on top of the substrate. Allow to dry thoroughly prior to topcoating. On interior applications, the dry time is dependant on the ability of the water to evaporate from the film. Use fans to generate maximum air movement. Covered tanks and vessels may require a dehumidification unit to accelerate the dry time.

Use water and United Cleaning Concentrate equal to thoroughly flush equipment. Purge the water from the system using solvent. Leave solvent in the lines and equipment until next use.

**LIMITATIONS & PRECAUTIONS**

RHINO PRIME is a thin penetrating sealer. It is not designed for use as a high-build surface coating. Do not use over metal under immersion conditions.

RHINO PRIME will freeze and become unusable below 32°F (0°C). Do not ship or store unless protection from freezing is available. Do not apply if conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply in the late afternoon if moisture condensation can appear during the night. Do not apply RHINO PRIME at temperatures below 50°F (10°C).

RHINO PRIME may be an irritant to skin. Avoid breathing of vapor or spray mist. Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and skin.

For additional information, refer to OSHA guidelines and RHINO PRIME Material Safety Data Sheet.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
UNIFLEX 255 Aliphatic

UV/COLOR STABLE POLYURETHANE FINISH

Technical Data & Application Instructions

PRODUCT DESCRIPTION

UNIFLEX 255 Aliphatic is a two-component elastomeric, abrasion resistant polyurethane finish coat. It is formulated from an all-aliphatic, light stable polymer, which allows for a wide range of UV stable colors. UNIFLEX 255 Aliphatic possesses high tensile strength as well as an excellent balance of elongation, hardness and abrasion resistance, resulting in long term wear and impact protection. The dense finish is also resistant to staining and dirt pickup, which aids in cleanability.

UNIFLEX 255 Aliphatic is an extended pot life system designed for use with standard airless spray equipment as well as brush, roller or squeegee.

BASIC USES

UNIFLEX 255 Aliphatic was developed as a topcoat for protecting aromatic polyurethane or polyurea basecoats from degradation caused by normal weathering and ultraviolet exposure. Its tough physical properties make it an ideal topcoat on many applications utilizing Uniflex 101, Uniflex 1500, Uniflex 3000 and other polyurethane/polyurea basecoats.

As a topcoat, UNIFLEX 255 Aliphatic provides a semi-gloss, wear resistant finish for pedestrian and vehicular traffic decks, recreational areas, walkways, patios and balconies. It is also used on its own to protect primed wood, steel, fiberglass, polyester and concrete.

COLORS

UNIFLEX 255 Aliphatic is available in standard Flint Gray, Concrete Gray, Smoke Gray, Burlap, Sandstone, Brownstone, Turf Green and Tile Red. Consult UNITED’S Deck Coating Systems color chart for examples of the above colors. A wide range of custom colors are also available to meet specific project requirements. Color chips or samples must be furnished to UNITED for all custom tint colors.

TYPICAL PROPERTIES (WET)

1. Mixing Ratio:
   7 Parts A to 1 Part B by volume (7A:1B)
2. Mixed Usable Pot Life:
   24 hours @ 70°F (21°C), 50% R.H.
3. Solids By Weight (mixed):
   70% (+3) [ASTM D2369]
4. Solids By Volume (mixed):
   55% (+2) [ASTM D2697]
5. Dry Time To Walk On:
   6 to 10 hours @ 70°F (21°C), 50% R.H. 
   (Higher temperatures & humidity will decrease dry time)

TYPICAL PROPERTIES (CURED)

1. Tensile Strength:
   3200 psi (+100) (22 MPa) [ASTM D412]
2. Elongation:
   200% (+25) [ASTM D412]
3. Tear Strength:
   350 pli (+25) [ASTM D1004]
4. Hardness:
   90 to 95 Shore A / 50 to 55 Shore D 
   [ASTM D2240]
5. Gloss:
   40 (60° Gardner) Semi-Gloss [ASTM D523]
6. Permeance:
   4.0 Perms at 12 dry mils [ASTM E398]
7. Low Temperature Flexibility:
   Passes 180° flex over ¼"(6 mm) mandrel @ 0°F (-18°C). 
   [Federal Test Method No. 141 a-6221]
8. Low Temperature Impact Resistance:
   No surface cracks or breaks over cement board or plywood surfaces. 130 gram, 1¼" 
   (3.1 cm) steel ball dropped from a height of 5' (1.5 m) at -21°F (-30°C). 
   [Test adapted from National Bureau of Standards.]
9. Abrasion Resistance:
   45 mgs. weight loss after 1000 cycles using 
   CS-17 wheels and 1000 gram weights on 
   Taber Abraser. [ASTM D4060]
PERFORMANCE & ADVANTAGES

1. Abrasion Resistance:
UNIFLEX 255 Aliphatic is more resistant to severe abrasion than most other rubber linings and coatings. The following is a comparison as tested on a Taber Abraser, using H-10 wheels with 1000 gm. weights at 1000 revolutions. Tested in accordance with ASTM D4060.

Weight Loss:
AR Plate Steel - - - - - - - - - - - - - - - - 487 mgs.
Boralloy Steel - - - - - - - - - - - - - - - - 430 mgs.
UNIFLEX 255 Aliphatic - - - - - - - - - - 91 mgs.

2. Resistance to accelerated Weathering:
UNIFLEX 255 Aliphatic test panels were placed in the QUV Accelerated Weathering Tester. Cycling is set at 4 hours of ultraviolet radiation, during which time temperatures reach approximately 135°F (57°C), and 4 hours with no radiation. A water bath at the bottom of the unit is maintained at 100°F (38°C) to create constant high humidity conditions. After 2,000 hours of continuous testing, UNIFLEX 255 Aliphatic had no surface checking or cracking, no delamination, and no loss of flexibility. Tested in accordance with ASTM G53.

3. Resistance to Salt Spray:
Test panels were placed in the Harshaw Salt Spray Cabinet and maintained at a temperature of 95°F (35°C), utilizing a sodium chloride fog solution of not less than 5% by weight. After 500 hours of continuous testing, UNIFLEX 255 Aliphatic had no loss of adhesion, no blistering or softening, and no loss of flexibility. Tested in accordance with ASTM B117.

4. Resistance to De-Icing Chemicals:
UNIFLEX 255 Aliphatic test panels were exposed to freeze-thaw cycles under complete immersion in a 4% calcium chloride solution. Cycles consisted of 16 hours @ 0°F (-18°C) and 8 hours at 75°F (24°C). After 10 complete cycles, UNIFLEX 255 Aliphatic remained unaffected, with no loss of adhesion, and no blistering or softening. Test method adapted from ASTM C672.

5. Resistance to Condensation:
Test panels were placed in the QCT Condensation Cabinet and maintained at a temperature of 120°F (49°C) and 100% relative humidity. After 500 hours of continuous testing, UNIFLEX 255 Aliphatic had no apparent physical damage. There was a slight loss of gloss. Tested in accordance with ASTM D2247.

6. Water Absorption:
After 30 days immersion in distilled water at 75°F (24°C) there were no visible effects. All elastomeric properties of UNIFLEX 255 Aliphatic were retained. Tested in accordance with ASTM D543, ASTM D412.

7. Chemical Resistance:
UNIFLEX 255 Aliphatic was applied at a total of 20 dry mils (508 dry microns) over cement board test panels. Test panels were cured at 75°F (24°C), 50% R.H. for 6 days plus 125°F (52°C) for 1 day before exposure to test solutions. Tests were conducted at 75°F (24°C) with the chemical placed on top of the test panels under watch glass covers. After 30 days of continuous testing the results were as follows:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Solution</td>
<td>No Effect</td>
</tr>
<tr>
<td>Gasoline</td>
<td>No Effect</td>
</tr>
<tr>
<td>Unleaded Gasoline</td>
<td>No Effect</td>
</tr>
<tr>
<td>Gasohol</td>
<td>No Effect</td>
</tr>
<tr>
<td>Diesel</td>
<td>No Effect</td>
</tr>
<tr>
<td>Motor Oil</td>
<td>No Effect</td>
</tr>
<tr>
<td>Suntan Oil</td>
<td>No Effect</td>
</tr>
<tr>
<td>Suntan Lotion</td>
<td>No Effect</td>
</tr>
</tbody>
</table>

8. Adhesive Strength:
UNIFLEX 255 Aliphatic was applied at a thickness of 10 dry mils (254 microns) over Uniflex 101 and Uniflex 1500 which had been applied over cement board test panels sealed with UNITED’S Uni-Tile Sealer LV at a thickness of 20 dry mils (508 dry microns). After test panels were allowed to fully cure, the bond strength was tested. The bond of UNIFLEX 255 Aliphatic to Uniflex 101 and Uniflex 1500, and the bond of the basecoats to the sealed substrate proved to be outstanding, exceeding to cohesive strength of the coating.

9. Low Temperature Flexibility:
UNIFLEX 255 Aliphatic retains its ability to withstand multiple ¼" (6 mm) mandrel bends without cracking at temperatures to 0°F (-18°C). Tested in accordance with Federal Test Method Standard No. 141 a-6221.

10. High Build Sprayability:
UNIFLEX 255 Aliphatic may be applied in thicknesses up to 20 wet mils (508 wet microns) in one application. UNIFLEX 255 Aliphatic applied at the coverage rate of 1 gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 8.8 dry mils (224 dry microns).
Polyurethane and polyurea basecoats that are to be topcoated with UNIFLEX 255 Aliphatic must be dry and clean, and free from any dirt, grease, oil, pollution fallout, or other foreign contaminants that could interfere with proper adhesion.

Ideally, aromatic basecoats should receive UNIFLEX 255 Aliphatic as soon as the basecoated surface has cured sufficiently to walk on. In any event it should be topcoated before achieving total cure, which can vary from 2 to 7 days depending upon the basecoat used and weather conditions at the time of application.

Should contamination in any form be detected on the basecoated surface, it must be removed prior to applying UNIFLEX 255 Aliphatic. Surfaces should be broomed, or if necessary pressure washed using United Cleaning Concentrate (UCC) or other biodegradable chemical cleaner, then rinsed thoroughly with clean fresh water and allowed to dry. Polyurethane basecoats that have been allowed to cure for an extended period of time must be thoroughly washed as instructed above. A test area of UNIFLEX 255 Aliphatic must then be applied to ensure proper adhesion. In some cases special surface preparation, such as solvent wiping and/or priming, may be required prior to topcoating. Contact UNITED’S Technical Service Department for specific recommendations.

For additional information on surface preparation prior to basecoat application refer to separate literature entitled Uniflex 101, Uniflex 1500 or Uniflex 3000 Application Instructions.

When UNIFLEX 255 Aliphatic is applied directly to concrete, steel, wood, or fiberglass substrates, the following surface preparation procedures should be followed:

**CONCRETE SURFACES:**

Concrete shall be dry and clean, free from any dirt, grease, oil, pollution fallout, smoke, wax, form release or curing agents, surface chemicals, or other foreign contaminants, which could interfere with proper adhesion. Surfaces shall be free of sharp projections, ridges and loose aggregate.

Sandblasting of concrete will be required if the surfaces are contaminated to the point that acid, chemical cleaning or power washing is not sufficient for removal. Concrete surfaces having a smooth, steel trowelled finish must be acid etched or sandblasted.

Prior to sealer application, all loose material, foreign objects, dirt and dust shall be removed by use of a power vacuum. Immediately after vacuuming is completed, concrete surfaces shall be sealed with one (1) coat of UNITED’S Uni-Tile Sealer LV. Sealer shall be applied by roller or airless spray at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12 m²/l). For details of application, refer to separate literature entitled Uni-Tile Sealer LV Technical Data and Application Instructions.

After sealer has completely dried, all cracks, control joints, cold joints and voids shall be filled with an approved, high quality urethane sealant. Cracks larger than hairline should be reinforced with UNITED’S UC-30 polyester fabric, embedded into a strip-coat of aromatic basecoat or UNIFLEX 255 Aliphatic. At the intersection of concrete walls and slabs, apply sealant in the same manner, extending a minimum of 1½" (3.75 cm) vertically and horizontally. UNIFLEX 255 Aliphatic is not designed to bridge cracks greater than 1/32" (.8 mm) in width. Sealant shall be allowed to cure a minimum of 24 hours prior to application of UNIFLEX 255 Aliphatic.

**STEEL SURFACES:**

Steel must be dry and clean, and free of excessive rust scale, pollution fallout, dirt, grease, surface chemicals or other foreign contaminants prior to blast cleaning. Steel surfaces must be cleaned to Near-White (SSPC-SP10) with a minimum anchor pattern of 2.0 mils (51 microns).

The blast-cleaned surface shall be primed by the end of the same workday, but in any event before any visible rusting occurs. If rusting occurs after blast cleaning, the surfaces shall be re-blasted before priming.

Steel surfaces shall be primed with UNITED’S Primer 302 or Lock-Down Primer at 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l) for a minimum thickness of 1.0 to 1.5 dry mils (25 to 38 microns), depending upon surface profile. UNIFLEX 255 Aliphatic should be applied to the primed surface within 24 hours of application. For further details, refer to literature entitled Primer 302 or Lock-Down Primer Technical Data and Application Instructions.

**WOOD SURFACES:**

Wood shall be dry and clean, and free from any dirt, grease, oil, pollution fallout, or other foreign contaminants, which could interfere with proper adhesion. Cleaned surfaces shall be primed with one (1) coat of United’s Uni-Tile Sealer LV at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12 m²/l).

All joints in the plywood must be backed and left with a ¼" (3 mm) gap between sheets. Approved, high quality urethane sealant shall be trowelled flush into the opening. After curing, the seams shall be treated with UNITED’S UC-30 reinforcing fabric embedded into a strip-coat of aromatic basecoat or UNIFLEX 255 Aliphatic.

**FIBERGLASS SURFACES:**

Fiberglass shall be dry and clean, and free from any dirt, grease, oil, pollution fallout, or other foreign contaminants, which could interfere with proper adhesion. All fiberglass surfaces shall then be scuff sanded and wiped down or vacuumed to remove all dust.

UNIFLEX 255 Aliphatic achieves an excellent bond to fiberglass surfaces prepared in this manner with no primer required. If fiberglass is chalky or oxidized, apply a prime-coat of Uni-Tile Sealer LV at the rate of 500 to 600 sq. ft. per gallon (12 to 14.6 m²/l).
PACKAGING & MIXING

Mix seven (7) volumes of Part A with one (1) volume of Part B. Part A is furnished in 1-gallon cans containing 7 pints (3.3 l), 5-gallon pails containing 4.4 gallons (16.6 l) and 55-gallon drums containing 48.4 gallons (182.6 l). Part B is furnished in 1 pint cans (48 l), 1-gallon cans containing .62 gallons (2.36 l) and 2 each 5-gallon pails containing 3.4 gallons (13 l) each. Each component shall be mixed separately prior to combining together. After combining Part B with Part A, power mix for a minimum of 5 minutes to achieve a uniform blend, ensuring that the Part B is mixed to the bottom of the container.

COATING APPLICATION

UNIFLEX 255 Aliphatic can be applied by brush, roller, squeegee or standard airlless spray equipment.

UNIFLEX 255 Aliphatic applied at the coverage rate of one gallon per 100 sq. ft. (.4 l/m²) of the combined Part A and Part B will theoretically yield 8.8 dry mils (224 microns). Actual gallons required in the field to achieve the minimum dry mil film thickness will depend upon the surface texture, spray technique of the applicator, and weather conditions at the time of application. It is the responsibility of the applicator to apply sufficient material to achieve the required dry film film build. The following dry film thicknesses are minimums required to qualify for UNITED’S 5-year warranty:

A. Applied Over Polyurethane/Polyurea Basecoats:
   1. Non-abrasion conditions — 8 to 10 mils (203 to 254 microns)
   2. Pedestrian traffic — 10 to 12 mils (254 to 305 microns)
   3. Light vehicular traffic — 12 to 15 mils (305 to 381 microns)
   4. Moderate vehicular traffic — 15 to 18 mils (381 to 457 microns)

B. Applied Directly Over Other Substrates:
   (Non-Traffic Areas)
   1. Concrete — 15 to 20 mils (381 to 508 microns)
   2. Steel — 12 to 15 mils (305 to 381 microns)
   3. Wood — 14 to 18 mils (356 to 457 microns)
   4. Fiberglass — 12 to 15 mils (305 to 381 microns)

High wear areas will require additional film thickness. When UNIFLEX 255 Aliphatic is applied over existing primed metal, apply coating to a small test area to ensure proper adhesion.

Applications utilizing UNIFLEX 255 Aliphatic topcoat will normally require one or two coats. Higher build applications or applications directly to concrete, steel, wood, or fiberglass will require a minimum of two separate coats. Criss-cross or cross-spray techniques shall be used to ensure even coverage. All surfaces must be uniformly coated and free from voids, pinholes and blisters.

COATING APPLICATION (Cont.)

Non-skid aggregate, if desired, should be broadcast into the second to last coat, whether it is UNIFLEX 101, UNIFLEX 1500, UNIFLEX 3000 or UNIFLEX 255 Aliphatic. Non-skid aggregate can also be blended into the final coat of UNIFLEX 255 Aliphatic and roller applied to achieve a uniform fine texture finish.

A minimum aggregate size of 30 mesh should be utilized when broadcasting into the second to last coat. The aggregate can either be broadcast evenly throughout the wet coating at 8 to 10 pounds per 100 sq. ft. (.3 to .4 kg/ m²), or for a heavier texture can be broadcast to refusal. When the intermediate coat has dried, sweep off the excess aggregate prior to topcoating with the final coat of UNIFLEX 255 Aliphatic. For a finer finish, utilize 60 to 80 mesh aggregate, added to the material for the final, roller-applied application.

UNIFLEX 255 Aliphatic should not be applied when the ambient temperature is below 50°F (10°C), or if rain is anticipated within 24 hours of application. Minimum storage temperature of 40°F (4.5°C) is recommended. Store UNIFLEX 255 Aliphatic in a warm area prior to application for sufficient length of time to bring material temperature to 75°F (24°C).

If thinning is required for application use Xylol or Xylene solvent sparingly. Clean equipment with MEK or where non-flammable solvent is desired, use Methylene Chloride. Do not leave Methylene Chloride in fluid hoses or pumps for prolonged periods. It can cause swelling and deterioration of hoses and corrosion in the pump.

LIMITATIONS & PRECAUTIONS

UNIFLEX 255 Aliphatic components are affected by moisture prior to catalization and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening and if all components are not to be used, containers must be purged with nitrogen gas or dry air and tightly sealed to protect the components from moisture contamination.

Solvents in UNIFLEX 255 Aliphatic are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flame or lighted cigarettes. Use explosion-proof application equipment, which has been grounded and bonded.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn. If used indoors, provide mechanical exhaust ventilation as well as air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin. For additional information, refer to OSHA guidelines and UNIFLEX 255 Aliphatic Material Safety Data Sheet.

SHELF LIFE

Shelf life of Part A and Part B components in unopened containers is 6 months from date of shipment from UNITED’S Factory. If shelf life has expired, contact UNITED’S Technical Service Department before attempting to utilize the material.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
UNIFLEX 1500
ROLLER-GRADE DECKING MEMBRANE

Technical Data & Application Instructions

PRODUCT DESCRIPTION

UNIFLEX 1500 is a two component, 100% solids, pot life polyurea elastomer coating. This 1:1 ratio, highly cross-linked polymer coating possesses a unique balance of tensile strength, elongation and hardness. This balance of physical properties contributes to its resistance to abrasion and tearing, and results in outstanding flexibility, wear and impact resistance.

UNIFLEX 1500 is a solventless system, enabling fast, high-build coats without solvent entrapment. It is manufactured with an extended pot life, allowing for application using a roller, squeegee or notched trowel. A fast-cure version, Elastuff 3000, is also available, which requires plural component application equipment.

BASIC USES

UNIFLEX 1500 was designed for use as a wear resistant, waterproof membrane on vehicular and pedestrian traffic decks. UNIFLEX 1500 is a durable, abrasion resistant coating, which waterproofs and protects occupied spaces below while isolating the substrate from the destructive forces of gasoline, oil, salts, solvents, cleaning compounds and other chemicals commonly found in parking deck structures. Various types of aggregate can be broadcast into the UNIFLEX 1500 to provide a non-skid surface.

On vehicular traffic decks, UNIFLEX 1500 is typically used on its own as the entire system. On pedestrian traffic surfaces, areas where aesthetics are of prime importance, or if a color other than the standard gray is desired, UNIFLEX 1500 can be topcoated with UNITED’S Uniflex 255 or Rhino Top.

COLORS

UNIFLEX 1500 is available in standard Medium Gray for interior applications or Metallic Gray for exterior applications. For Medium Gray, the Part A is Black and the Part B is White. When mixed properly, they form the standard Medium Gray color. For Metallic Gray, the Part B contains an aluminum pigment, which, when mixed with the Black Part A, forms a Metallic Gray color.

TYPICAL PROPERTIES (WET)

1. Mixing Ratio:
   1 Part A to 1 Part B by volume (1A:1B)
2. Mixed Usable Pot Life:
   30 to 40 minutes @ 75°F (24°C), 50% R.H.
3. Solids by Weight (Mixed):
   100% [ASTM D 2369]
4. Solids by Volume (Mixed):
   100% [ASTM D 2697].
5. Dry Time to Walk On:
   8 hours @ 75°F (24°C), 50% R.H.
6. Cure Time:
   80% after 24 hours @ 75°F (24°C), 50% R.H.
   90% after 4 days @ 75°F (24°C), 50% R.H.

TYPICAL PROPERTIES (CURED)

1. Tensile Strength:
   1,500 psi (± 200) (10.3 MPa) @ 75°F (24°C)
   [ASTM D412]
2. Elongation:
   200% (±50) [ASTM D 412]
3. Tear Strength:
   200 lb/in. (±30)
   [ASTM D 1004]
4. Hardness:
   30 to 40 Shore D @ 75°F (24°C)
   40 to 50 Shore D @ 35°F (2°C)
   [ASTM D 2240]
5. Abrasion Resistance:
   20 to 30 mg weight loss using CS-17 wheel
   50 to 70 mg weight loss using H-10 wheel
   with 1,000 mg weights at 1,000 revolutions
   [ASTM D 4060]
6. Flexibility:
   Passes ¼ inch (6 mm) mandrel bend @ -4°F (20°C)
   Federal Test Method Standard No. 141 a-6221
7. Impact Resistance:
   Passes 160 inch pounds direct @ -4°F (20°C)
   [ASTM D 2794]
8. Permeance:
   1.2 perms at 60 mil (1,524 microns) system
   [ASTM E 398]
9. Water Absorption:
   Less than 1% weight gain after 10 day immersion in distilled water. No swelling or softening [ASTM D 570]
SURFACE PREPARATION

All surfaces must be clean and free of any moisture, dirt, oil, grease, soapy films, surface chemicals or other foreign contaminants. Surfaces shall be free of sharp projections, ridges and loose aggregate.

The actual surface preparation procedures that are to be followed on a specific project will vary depending upon age of the concrete, the degree of finishing or troweling, or presence of contaminants or curing compounds. For this reason, it is recommended that all concrete surfaces be inspected by an Authorized Representative of UNITED and UNITED’S Licensed Applicator prior to starting any work. The following surface preparation procedures and recommendations are provided for guideline use only.

New concrete that has a “light” to “medium” broom finish shall be cleaned and etched with 10% Muratic Acid Solution diluted in proportion of 1 part 10% acid solution to 3 or 4 parts clean water. Muratic Acid Solution shall then be sprinkled onto the concrete surface. After the solution has stopped bubbling or foaming (normally 5 to 10 minutes), the area shall be scrubbed thoroughly by hand or by using mechanical scrubbers. After scrubbing, all surfaces shall be thoroughly rinsed with liberal amounts of fresh water to assure complete acid removal. Surfaces may require additional rinsing or a high pressure rinse to remove all traces of the acid solution.

Concrete surfaces that are contaminated with oil, grease, dirt, etc. shall be cleaned prior to acid etching with United Cleaning Concentrate (UCC), or other approved biodegradable chemical cleaner and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the UCC cleaner.

High pressure power washing may be necessary to remove strongly adhering contaminants. Power washer shall be rated at a minimum of 4.5 gallons per minute with a minimum operating pressure of 2,500 psi, utilizing a minimum of 4.5 gallons per minute to remove strongly adhering contaminants. Power washer shall be rated at a minimum of 4.5 gallons per minute with a minimum operating pressure of 2,500 psi, utilizing a 25° or 40° ceramic nozzle. Apply UCC cleaner under low pressure in accordance with instructions on the label. After power washing with cleaner, surfaces shall then be power rinsed thoroughly with fresh water under high pressure to remove all traces of the cleaner.

Concrete surfaces having a smooth, steel troweled finish may be acid etched or mechanically abraded. Shotblasting is the preferred method. The option to acid etch a smooth finish will only be acceptable to UNITED if a minimum surface height profile of 5 to 8 mils (127 to 203 microns) is achieved. Acid etching must produce an even profile.

If wet blasting operations are employed, used only silica sand. Metal type grit should not be used in wet blasting operations. Blasting operations shall comply with all applicable state and local air pollution standards.

A self-contained portable blast unit, such as Wheelabrator-Frye Inc. Blastrac, may be used in lieu of the above conventional blasting provided a minimum surface profile of 5 to 8 mils (127 to 203 microns) is achieved.

If concrete surfaces have previously been coated, or for application to metal, wood or other substrates, contact UNITED’S Technical Service Department for recommendations.

Prior to sealer application, all loose material, foreign objects, dirt and dust shall be removed by a power vacuum. Concrete surfaces shall be completely dry.

Immediately after vacuuming is completed, concrete surfaces shall be sealed with one (1) coat of UNITED’S Uni-Tile Sealer LV. Sealer shall be applied by airless spray or roller at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12 m²/l). For details refer to literature entitled Uni-Tile Sealer LV Technical Data & Application Instructions.

A minimum of ½ hour dry time at 75°F (24°C) shall be allowed between application of Uni-Tile Sealer LV and application of UNIFLEX 1500 or treatment of cracks. Colder temperatures will require additional dry time. On concrete decks that are subject to direct ultraviolet exposure, sealer shall be applied only in an area that can be topcoated with UNIFLEX 1500 within a 24 hour period.

After sealer has completely dried, all cracks, control joints, cold joints and voids shall be filled with an approved urethane sealant. All open cracks and joints up to ¼" (3 mm) in width and voids up to ¼" (6 mm) square shall be filled with sealant. Cracks with spalled edges and all cracks between ¼" (3 mm) and ¼" (6 mm) in width shall be routed or sawcut prior to filling with sealant. Cracks, joints and voids exceeding ¼" (6 mm) in width shall be sawcut, treated with polyethylene backer rod and filled with an approved material. Patching material shall be used in strict accordance with manufacturer’s recommendations.

Apply sealant using a trowel, putty knife or bulk caulking gun. Sealant shall be applied with sufficient pressure to fill the cracks and joints completely. Sealant shall be trowelled flush so that it is uniformly smooth and free from wrinkles, gaps or air pockets.

At the intersection of concrete slabs and all vertical surfaces, apply a minimum ½" (1.2 cm) sealant bead, tooled slightly concave, and extending a minimum of 1" (2.5 cm) vertically and horizontally. All projections through the deck membrane (i.e. posts, pipes, etc.) shall be sealed sealant in a similar manner. Sealant shall be allowed to cure a minimum of 24 hours prior to application of UNIFLEX 1500.
UNIFLEX 1500 can be applied using a roller, squeegee or notched trowel. UNIFLEX 1500 shall be applied over concrete surfaces that have been previously primed with UNITED’S Uni-Tile Sealer LV. All preparation work, including treatment of cracks and joints, must have been completed in accordance with UNITED’S published recommendations. Do not apply when ambient temperature is below 40°F (4°C) or above 100°F (38°C), or if rain is anticipated within 2 hours of application.

UNIFLEX 1500 can be applied with a smooth finish, or with an aggregate surface. Both systems require two (2) or three (3) separate coats depending upon jobsite conditions and dry film requirements. Successive coats should be applied perpendicular to the previous coat to assure positive coverage and uniform film build. All surfaces must be uniformly coated and be free from voids, pinholes and blisters.

Thoroughly mix both Part A and Part B UNIFLEX 1500 components prior to utilizing the material. Blend the Part A and the Part B components using a Jiffy-style power mixer for a minimum of 2 to 5 minutes until a uniform color is achieved. Apply by pouring out the blended UNIFLEX 1500 Roller-Grade in an “S” pattern across a 3’ to 6’ (1 to 2 m) section of the deck, then spread evenly to the desired thickness using a roller, squeegee or notched trowel.

UNIFLEX 1500 applied at the coverage rate of one gallon per 100 sq. ft. (.4 l/m²) of the combined Part A and Part B will theoretically yield 16.0 dry mils (406 dry microns).

The following dry mil thicknesses are provide for guideline use only for applications that are not to be topcoated with a separate topcoat. Due to the fact that each situation will vary in its specific requirements for protection, it is suggested that UNITED’S Technical Service Department be contacted for recommendations.

**Vehicular Driving Areas**
- 45 to 50 dry mils (1,143 to 1,270 microns) minimum, applied in 3 coats

**Ramps/Ticket Booths/Turn Areas**
- 60 to 70 dry mils (1,525 to 1,778 microns) minimum, applied in 3 or 4 coats

**Parking Areas**
- 35 to 40 dry mils (889 to 1,016 microns) minimum, applied in 2 coats

**Pedestrian Walkways**
- 30 dry mils (762 microns) minimum, applied in 2 coats

Allow each coat of UNIFLEX 1500 to dry tack free prior to applying an additional coat. This will take a minimum of 6 hours at 75°F (24°C), 50% R.H. Allow additional dry time between coats at cooler temperatures.

The applicator must periodically check the number of gallons (liters) used compared to square feet (meters) coated. If adequate material has not been used according to UNITED’S published recommendations or project specifications, adjust accordingly and apply additional material to previously coated areas.

UNIFLEX 1500 can be applied with a smooth or textured finish. The textured finish is recommended in all areas that may be subjected to rain or other damp conditions, as the coating is slippery when wet.

**Smooth Finish**—Apply UNIFLEX 1500 in two or three coats depending upon desired thickness. A minimum of 40 wet mils (1,016 wet microns) may be applied per coat in those areas requiring high film thickness. It is recommended that a maximum of 20 wet mils (508 wet microns) be applied on the final coat to achieve optimum finish characteristics.

**Textured Finish**—Non-skid aggregate is broadcast into the second-to-last coat of UNIFLEX 1500 with a hopper gun or other method to uniformly disperse the aggregate into the coating. It is then topcoated with 10 to 15 wet mils (254 to 381 wet microns) to tie it into the membrane. Under most conditions, UNITED recommends clean, dust-free aggregate between 12 and 16 mesh, broadcast to the desired density.

UNIFLEX 1500 should extend a minimum of 4 inches (10 cm) up vertical projections to create a self terminating flashing. Coated areas that do not tie into a vertical surface must be sawcut around the perimeter to a minimum of ¼ inch (6 mm). The coating must then be applied so as to flow into and terminate at the saw cut.

**SHELF LIFE & STORAGE**

Shelf life of Part A and Part B components in unopened containers is 6 months from date of shipment from UNITED’S factory. If shelf life has expired, contact UNITED’S Technical Service Department before attempting to utilize the material.

Material must be stored at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.
**TOPCOAT APPLICATION**

**UNIFLEX 1500** is designed as a functional membrane system for providing waterproofing and non-skid protection over vehicular or high-use pedestrian areas. Due to the nature of the product, it will lose its sheen and may chalk slightly after extended exterior exposure. For this reason, it is recommended that **UNIFLEX 1500** be top-coated in areas where aesthetics are of prime importance or when a color other than standard Medium Gray is desired.

Pedestrian traffic surfaces or recreational areas that require a waterproof, non-skid decking system typically consist of **UNIFLEX 1500** applied as a 30 dry mil basecoat. It can then be topcoated with either **Rhino Top** or **Uniflex 255**. **Rhino Top** is an epoxy modified acrylic that contains a fine, rounded silica sand to provide a light non-skid. It is roller applied in 2 coats at the rate of 200 sq. ft. per gallon (4.9 m²/l) per coat, with the second coat applied in a perpendicular direction to the first coat.

**Uniflex 255** is an aliphatic polyurethane that can be applied in 1 or 2 coats depending upon the desired finish. For a light non-skid, 60 to 80 mesh aggregate is mixed into the container of material and roller-applied at the rate of approximately 75 sq. ft. per gallon (1.8 m²/l). For a heavier non-skid texture, apply a tack-coat of **Uniflex 255** at approximately 150 sq. ft. per gallon (3.6 m²/l) and broadcast a 30 mesh aggregate into the wet film at the desired density. After allowing to dry, sweep off any loose aggregate and apply a second coat of **Uniflex 255** at the rate of approximately 100 to 150 sq. ft. per gallon (2.4 to 3.6 m²/l) to encapsulate the non-skid.

On vehicular areas, use the recommended thickness stated for **UNIFLEX 1500**, substituting **Uniflex 255** for approximately ⅓ of the total coating thickness in each given area. The minimum dry mil thickness to which **Uniflex 255** should be applied in any area is 10 mils (254 microns). When utilizing a textured finish on areas that will receive less than 12 dry mils (305 microns) of **Uniflex 255** Topcoat, the non-skid aggregate should be broadcast into the final coat of **UNIFLEX 1500**. When utilizing a textured finish on areas to receive more than 12 dry mils (305) of **Uniflex 255**, the topcoat must be applied in a minimum of 2 coats. The aggregate shall be broadcast into the second to last coat, with a final topcoat totaling 10 to 12 dry mils (254 to 305 microns) applied over the top of the aggregate to encapsulate the non-skid.

**CLEANUP**

Clean equipment with Methylene Chloride or M.E.K. Do not leave Methylene Chloride in fluid hoses or pumps for prolonged periods. It can cause swelling and deterioration of hoses and corrosion in the pump.

**LIMITATIONS & PRECAUTIONS**

**UNIFLEX 1500** components are affected by moisture prior to catalyzation and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening and if all components are not to be used, containers must be purged with nitrogen gas or dry air and tightly sealed to protect the components from moisture contamination.

On exterior applications utilizing aluminum pigment in the Part B component, containers must be agitated occasionally to assure even dispersion of the aluminum.

The theoretical film thickness given for coverage per gallon is based on smooth, non-porous surfaces. Actual gallons (liters) required in the field to achieve the minimum dry mil film thickness will depend upon the surface texture, ambient weather conditions and spray technique of the applicator. It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry mil film thickness.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and contact with skin.

For additional information on safety requirements, refer to OSHA guidelines and **UNIFLEX 1500** Material Safety Data Sheet.
Technical Data & Application Instructions

PRODUCT DESCRIPTION

UNIFLEX 3000 is a two component, 100% solids polyurea elastomer coating. This 1:1 ratio, highly cross-linked polymer coating possesses a unique balance of tensile strength, elongation and hardness. This balance of physical properties contributes to its resistance to abrasion and tearing, and results in outstanding flexibility, wear and impact resistance.

UNIFLEX 3000 is a rapid curing solventless system, enabling fast, high-build coats without solvent entrapment. It is manufactured in both a fast-cure version designed for application with plural component spray equipment, as well as a roller-grade version, UNIFLEX 1500, which is applied with a roller, squeegee or notched trowel.

BASIC USES

UNIFLEX 3000 was designed for use as a wear resistant, waterproof membrane on vehicular and pedestrian traffic decks. UNIFLEX 3000 is a durable, abrasion resistant coating which waterproofs and protects occupied spaces below, while isolating the substrate from the destructive forces of oil, salts, solvents, cleaning compounds and other chemicals commonly found in parking deck structures. Various types of aggregate can be broadcast into the UNIFLEX 3000 to provide a non-skid surface.

On vehicular traffic decks, UNIFLEX 3000 is typically used on its own as the entire system. On pedestrian traffic surfaces, areas where aesthetics are of prime importance, or if a color other than the standard gray is desired, UNIFLEX 3000 can be topcoated with UNITED’S Uniflex 255.

COLORS

UNIFLEX 3000 is available in standard Medium Gray or Metallic Gray. For Medium Gray, the Part A is Black and the Part B is White. When mixed properly, they form the standard Medium Gray color. For Metallic Gray, the Part B contains an aluminum pigment, which, when mixed with the Black Part A, forms a Metallic Gray color.

TYPICAL PROPERTIES (WET)

1. Solids By Weight: 100% [ASTM D644]
2. Solids By Volume: 100% [ASTM D697]
3. Weight Per Gallon:
   Part A = 9.2 lbs. (4.2 kg)
   Part B = 8.4 lbs. (3.8 kg)
4. Gel Time: 15 seconds @ 75°F (24°C), 50% R.H.
5. Tack Free Time: <10 minutes @ 75°F (24°C), 50% R.H.
6. Cure Time: 75% @ 24 hours
7. Ultimate Tensile Strength:
   2,200 psi (± 100) (13.7 MPa) @ 75°F (24°C) [ASTM D412]
8. Elongation at Break: 500% (± 50) (90 kN/m) [ASTM D1004]
9. Tear Strength: 253 pli (±50) (90 kN/m) [ASTM D1004]
11. Abrasion Resistance: 0.65 mg loss w/H-10 wheels using 1,000 gm weights at 1,000 revolutions on Taber Abraser [ASTM D4060]
12. Impact Resistance: Passes 160 Inch-Pounds direct and reverse [ASTM D2794]
13. Adhesion: Concrete: 350 psi (± 50) (2.4 Mpa) – substrate failure [ASTM D4541]
14. Water Absorption: <1% after 7 days immersion [ASTM D570]
15. High Temperature Stability: No age hardening or slump
16. Cold Temperature Flexibility: Passes 180º, ¼” (.6 cm) mandrel bend at -4ºF (-20°C) [ASTM D522]
17. Temperature Limits For Normal Service Conditions: -30°F to 300+°F (-22°C to 149°C)
SURFACE PREPARATION

All surfaces must be clean and free of any moisture, dirt, oil, grease, soapy films, surface chemicals or other foreign contaminants. Surfaces shall be free of sharp projections, ridges and loose aggregate.

The actual surface preparation procedures which are to be followed on a specific project will vary depending upon age of the concrete, the degree of finishing or troweling, or presence of contaminants or curing compounds. For this reason, it is recommended that all concrete surfaces be inspected by an Authorized Representative of UNITED and UNITED’S Licensed Applicator prior to starting any work. The following surface preparation procedures and recommendations are provided for guideline use only.

Concrete surfaces that are contaminated with oil, grease, dirt, etc. shall be cleaned prior to acid etching with United Cleaning Concentrate (UCC), or other approved biodegradable chemical cleaner and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the UCC cleaner.

High pressure power washing may be necessary to remove strongly adhering contaminants. Power washer shall be rated at a minimum of 4.5 gallons per minute with a minimum operating pressure of 2,500 psi, utilizing a 25º or 40º ceramic nozzle. Apply UCC cleaner under low pressure in accordance with instructions on the label. After power washing with cleaner, surfaces shall then be power rinsed thoroughly with fresh water under high pressure to remove all traces of the cleaner.

Concrete surfaces having a smooth, steel troweled finish must be mechanically abraded, with shotblasting being the preferred method. Concrete surfaces having a broom finish may also require mechanical abrasion.

Shotblasting of concrete will be required if the following conditions exist:

1. If concrete surfaces are contaminated to the point that chemical cleaning or power washing is not sufficient for removal;
2. If concrete finish is determined to be unacceptable in its present state by the Licensed Applicator and/or UNITED’S Authorized Representative.

When blasting, use an abrasive grit or sand of the type and gradation required to provide a minimum surface height profile of 5 to 8 mils. Blasting must produce an even profile. Blasting operations shall comply with all applicable state and local air pollution standards.

A self-contained portable blast unit, such as Wheel-abrator-Frye Inc. Blastrac, may be used in lieu of the above conventional blasting provided a minimum surface profile of 5 to 8 mils is achieved.

If concrete surfaces have previously been coated, or for application to metal, wood or other substrates, contact UNITED’S Technical Service Department for recommendations.

Prior to sealer application, all loose material, foreign objects, dirt and dust shall be removed by a power vacuum. Concrete surfaces shall be completely dry.

Immediately after vacuuming is completed, concrete surfaces shall be sealed with one (1) coat of UNITED’S Uni-Tile Sealer LV. Sealer shall be applied by airless spray or roller at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12 m²/l). For details refer to literature entitled Uni-Tile Sealer LV Technical Data & Application Instructions.

A minimum of 1 hour dry time at 75°F (24°C) shall be allowed between application of Uni-Tile Sealer LV and application of UNIFLEX 3000 or treatment of cracks. Colder temperatures will require additional dry time. On concrete decks which are subject to direct ultraviolet exposure, sealer shall be applied only in an area that can be topcoated with UNIFLEX 3000 within a 48 hour period.

After sealer has completely dried, all cracks, control joints, cold joints and voids shall be filled with an approved urethane sealant. All open cracks and joints up to 1/8" in width and voids up to ¼" square shall be filled with sealant. Cracks with spalled edges and all cracks between 1/8" and ¼" in width shall be routed or sawcut prior to filling with sealant. Cracks, joints and voids exceeding ¼" in width shall be sawcut, treated with polyethylene backer rod and filled with an approved material. Patching material shall be used in strict accordance with manufacturer’s recommendations.

Apply sealant using a trowel, putty knife or bulk caulking gun. Sealant shall be applied with sufficient pressure to fill the cracks and joints completely. Sealant shall be trowelled flush so that it is uniformly smooth and free from wrinkles, gaps or air pockets.

At the intersection of concrete slabs and all vertical surfaces, apply a minimum ½" sealant bead, tooled slightly concave, and extending a minimum of 1" vertically and horizontally. All projections through the deck membrane (i.e. posts, pipes, etc.) shall be sealed with sealant in a similar manner.

Sealant shall be allowed to cure a minimum of 24 hours prior to application of UNIFLEX 3000.
**COATING APPLICATION**

**UNIFLEX 3000** is applied using 1:1 ratio plural component airless spray equipment. Refer to separate literature entitled **Plural Component Spray Equipment** for information on design and operation.

**UNIFLEX 3000** shall be applied over concrete surfaces which have been previously primed with UNITED’S Uni-Tile Sealer LV. All preparation work, including treatment of cracks and joints, must have been completed in accordance with UNITED’S published recommendations. Do not apply when ambient temperature is below 40°F (4°C) or above 100°F (38°C), or if rain is anticipated within 2 hours of application.

**UNIFLEX 3000** can be applied with a smooth finish, or with a spatter-coat or aggregate surface. All systems require two (2) or three (3) separate coats depending upon jobsite conditions and dry mil requirements. Successive coats should be applied perpendicular to the previous coat to assure positive coverage and uniform film build. All surfaces must be uniformly coated and be free from voids, pinholes and blisters.

Allow each separate coat of **UNIFLEX 3000** to dry tack free prior to applying an additional coat. This will take a minimum of 10 minutes. Allow additional dry time between coats at cooler temperatures.

Thoroughly mix both Part A and Part B **UNIFLEX 3000** components prior to utilizing the material. Flush M.E.K. solvent through the pumps, hoses and spray gun prior to introducing the material components. Set transfer pumps at the minimum pressure required to completely fill the proportioning cylinders as they cycle so that no cavitation occurs. This will typically require 200 to 300 psi fluid pressure. Set main proportioning pump at 2,100 to 2,800 psi fluid pressure to achieve an acceptable spray pattern, depending upon tip size, material temperature and ambient conditions.

Plural component equipment must be equipped with in-line, high pressure heaters as well as heated, insulated high pressure hose capable of developing and maintaining a minimum of 120°F (49°C) material temperature at the spray gun. In cooler ambient conditions where the material in the drum cannot be maintained at 60°F (16°C) or higher, it is recommended that drum heaters be utilized to facilitate easier pumping of the liquid components by the transfer pumps.

Utilize an approved, plural component, internal mix spray gun to assure proper mixing and cure of the liquid components.

**UNIFLEX 3000** applied at the coverage rate of one gallon per 100 sq. ft. (4 l/m²) of the combined Part A and Part B will theoretically yield 16.0 dry mils (406 dry microns).

The following dry mil thicknesses are provide for guidance use only for applications which are not to be topcoated with a separate topcoat. Due to the fact that each situation will vary in its specific requirements for protection, it is suggested that UNITED’S Technical Service Department be contacted for recommendations.

**Vehicular Driving Areas**
45-50 dry mils (1,143 to 1,270 microns)
minimum applied in 3 coats

**Ramps/Ticket Booths/Turn Areas**
60-70 dry mils (1,525 to 1,778 microns)
minimum applied in 3 or 4 coats

**Parking Areas**
35-40 dry mils (889 to 1,016 microns)
minimum applied in 2 coats

**Pedestrian Walkways**
30 dry mils (762 microns)
minimum applied in 2 coats

The applicator must periodically check the number of gallons (liters) used compared to square feet (meters) coated. If adequate material has not been used according to UNITED’S published recommendations or project specifications, adjust accordingly and apply additional material to previously coated areas.

**UNIFLEX 3000** can be applied with a smooth or textured finish. The textured finish is recommended in all areas which may be subjected to rain or other damp conditions, as the coating is slippery when wet.

**Smooth Finish**–Apply **UNIFLEX 3000** in two or three coats depending upon desired thickness. A minimum of 40 wet mils (1,016 wet microns) may be applied per coat in those areas requiring high film thickness. It is recommended that a maximum of 20 wet mils (508 wet microns) be applied on the final coat to achieve optimum finish characteristics.

**Textured Finish**–Non-skid aggregate is broadcast into the second-to-last coat of **UNIFLEX 3000** with a hopper gun or other method to uniformly disperse the aggregate into the coating. It is then topcoated with 10 to 15 wet mils (254 to 381 wet microns) to tie it into the membrane. Under most conditions, UNITED recommends clean, dust-free aggregate between 12 and 16 mesh, broadcast to the desired density.

**UNIFLEX 3000** should extend a minimum of 4 inches up vertical projections to create a self-terminating flashing. Coated areas that do not tie into a vertical surface must be sawcut around the perimeter to a minimum of ¼ inch. The coating must then be applied so as to flow into and terminate at the saw cut.

**SHELF LIFE & STORAGE**

Shelf life of Part A and Part B components in unopened containers is 6 months from date of shipment from UNITED’S factory. If shelf life has expired, contact UNITED’S Technical Service Department before attempting to utilize the material.

Material must be stored at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.
**TOPCOAT APPLICATION**

**UNIFLEX 3000** is designed as a functional membrane system for providing waterproofing and non-skid protection over vehicular or high-use pedestrian areas. Due to the nature of the product, it will lose its sheen and may chalk slightly after extended exterior exposure. For this reason, it is recommended that **UNIFLEX 3000** be topcoated in areas where aesthetics are of prime importance or when a color other than standard Medium Gray is desired.

On vehicular areas, use the recommended thickness stated for **UNIFLEX 3000**, substituting **Uniflex 255** for approximately 1/3 of the total coating thickness in each given area. The minimum dry film thickness to which **Uniflex 255** should be applied in any area is 10 mils (254 microns). When utilizing a textured finish on areas that will receive less than 12 dry mils (305 microns) of **Uniflex 255** Topcoat, the non-skid aggregate should be broadcast into the final coat of **UNIFLEX 3000**. When utilizing a textured finish on areas to receive more than 12 dry mils (254 to 305 microns) of **Uniflex 255**, the topcoat must be applied in a minimum of 2 coats. The aggregate shall be broadcast into the second to last coat, with a final topcoat totalling 10 to 12 dry mils applied over the top of the aggregate to encapsulate the non-skid.

Ideally, **UNIFLEX 3000** should be topcoated within 24 hours of the last basecoat application to ensure chemical adhesion between the basecoat and topcoat. If the topcoat is not applied within 48 hours it may be necessary to apply a thin prime coat prior to topcoat application. Consult individual **Uniflex 255 Technical Data & Application Instructions** sheets for additional information. Consult UNITED’S Technical Service Department for recommendations on specific requirements.

**CLEANUP**

Clean equipment with Methylene Chloride or M.E.K. Do not leave Methylene Chloride in fluid hoses or pumps for prolonged periods. It can cause swelling and deterioration of hoses and corrosion in the pump.

**LIMITATIONS & PRECAUTIONS**

**UNIFLEX 3000** components are affected by moisture prior to catalyzation and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening and if all components are not to be used, containers must be purged with nitrogen gas or dry air and tightly sealed to protect the components from moisture contamination.

On exterior applications utilizing aluminum pigment in the Part B component, containers must be agitated occasionally to assure even dispersion of the aluminum.

The theoretical mil thickness given for coverage per gallon is based on smooth, non-porous surfaces. Actual gallons required in the field to achieve the minimum dry mil film thickness will depend upon the surface texture, ambient weather conditions and spray technique of the applicator. It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry mil film thickness.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and contact with skin.

For additional information on safety requirements, refer to OSHA guidelines and **UNIFLEX 3000** Material Safety Data Sheet.
PRODUCT DESCRIPTION

ROOF MATE is a water-based, high solids elastomeric coating utilizing the latest advances in acrylic technology. Premium quality acrylic resins are combined with reinforcing laminar pigments, an effective biocide package and non-migrating fire retardants, resulting in superior durability, weatherproofing, ultraviolet resistance, algae/mildew resistance and fire retardancy. ROOF MATE is a highly reflective, permanently flexible “breathing” membrane, allowing moisture vapor from the substrate or building interior to escape while remaining impervious to mass water penetration from the exterior. ROOF MATE is also available in a high-tensile strength version for roof areas subject to heavy maintenance traffic, severe weather conditions, chemical fallout, etc., as well as a quick set version for use on applications where a more rapid resistance to moisture is necessary.

BASIC USES

ROOF MATE was especially developed for extending the life of metal, conventional built-up, modified bitumen, concrete, Hypalon, EPDM, sprayed-in-place or board-stock insulation, or composite shingle roofs. ROOF MATE forms a waterproof elastomeric seal, uniformly covering the textured profile of various substrates to form a monolithic membrane, providing protection from normal weathering, aging and ultraviolet exposure.

COLORS

ROOF MATE is available in standard White, Tan, Light Tan and Solar Gray colors, which are certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in Kymax topcoat only.

WARRANTY

ROOF MATE warranties are available for five (5), ten (10) or fifteen (15) year periods. The warranties guarantee the installation against leaks caused by normal weathering. Refer to individual warranty documents for additional information.

TYPICAL PROPERTIES

1. Solids by Weight:
   60% (+2) [ASTM D2369]
2. Solids by Volume:
   54% (+2) [ASTM D5201]
3. Weight per Gallon:
   11.8 lbs. (+2) (1.41 kg/l) [ASTM D1475]
4. Dry Time for Water Resistance:
   3 hours @ 70°F (21°C), 50% R.H. White @ 16 wet mils (406 microns)
   *Required time will increase @ higher humidities
5. Ultimate Tensile Strength:
   224 psi (±20) (1.54 MPa) @ 75°F (24°C) [ASTM D2370]
6. Elongation at Break:
   226% (±30) @ 75°F (24°C) [ASTM D2370]
   *ROOF MATE is unique in that it maintains its elongation values at freezing temperatures, as well as after extended weathering
7. Hardness:
   55-65 Shore A [ASTM D2240]
8. Permeance:
   5.7 U.S. perms (3.76 metric perms) @ 20 mils (508 microns) [ASTM D1653]
9. Ultraviolet Resistance:
   No deleterious effects after 5,000 hours [ASTM D822, ASTM G23]
10. Weather Resistance:
    No deleterious effects after 5,000 hours [ASTM D822, ASTM G23]
11. High Temperature Stability:
    No age hardening up to 250°F (121°C) [ASTM D794]
12. Resistance to Wind Driven Rain:
    0.3% moisture result [Federal Specification TTC-555B]
13. Bond Strength:
    Exceeds cohesive strength of coating [ASTM C297]
14. Surface Temperature Limits for Service Conditions:
    -30°F to 180°F (-35°C to 82°C)
15. Code Approvals:
    UL 790 Class A, Factory Mutual Class I and Dade County.
ADVANTAGES OF ROOF MATE
The Following Advantages Combine To Make ROOF MATE The Most Effective, Low-Cost Method Of Extending The Life Of New Or Existing Roof Surfaces.

1. Low Cost Application:
ROOF MATE can be installed more efficiently and at a fraction of the cost of other roofing systems. No bulky or expensive materials to haul, lift, spread, cut or glue. Simply apply ROOF MATE by brush, roller or spray over the properly prepared roof substrate. Cleanup requires only soap and water. ROOF MATE conforms to all federal and state air pollution standards and VOC regulations.

2. Fast Application:
Roofs can be prepared and coated with ROOF MATE significantly faster than applying conventional built-up or single-ply systems.

3. High Solids and Resin Content:
The high volume solids of ROOF MATE, along with its excellent hide and vertical hold characteristics, allows for faster film build in fewer coats. This enables ROOF MATE to uniformly cover the uneven profile of textured substrates. The high ratio of elastomeric acrylic polymer to filler pigment provides long-term weathering and ultraviolet resistance.

4. Lightweight:
A ROOF MATE roof is lighter than conventional and single-ply systems, putting less stress on the framework of the building. No glue, fasteners or heavy ballasting is required.

5. Permanent Flexibility:
ROOF MATE contains no migratory plasticizers, which may give good initial elasticity but leach out of the coating upon extended exterior exposure. ROOF MATE remains permanently flexible through the use of high grade elastomer acrylic polymers.

6. Colorfast:
The acrylic resins utilized in ROOF MATE crosslink under exterior exposure to lock in color and lock out dirt. The topcoat color remains true through years of weathering, while the tight, crosslinked surface effectively repels dirt.

7. Low Maintenance Costs:
With a ROOF MATE roof there is no asphalt to degrade, metal to corrode or seams to come apart. It is formulated to remain flexible to -30°F without cracking under stress, and is impervious to minor ponding water associated with most roofs. When maintenance is required, repairs are easily accomplished using acrylic caulk and/or additional ROOF MATE.

8. Resists Abusive Weather:
ROOF MATE will take abusive weather conditions of all types. Ice, snow, wind driven rain and sand do not penetrate its tough, dense surface under normal conditions.

9. Long Term Fire Protection:
ROOF MATE utilizes non-migratory fire retardants that become an integral and inseparable part of the coating to provide permanent fire retardancy.

10. Reduced Energy Cost:
ROOF MATE topcoat remains white to effectively reflect the sun’s heat, unlike dark-colored roofs that retain heat and are subject to ultraviolet degradation. Roof temperatures can be reduced in excess of 50°F. Exceeds ENERGY STAR® & Cool Roof Rating Council Guidelines.

11. Resistance To Foot Traffic:
ROOF MATE’S tough finish, combined with its flexibility and bond strength characteristics, allows it to easily withstand the stresses of normal roof maintenance traffic.

12. Code Approvals:
ROOF MATE is UL classified as a Class “A” Fluid Applied Coating System, and as a Class A, B or C Maintenance & Repair System as outlined in the UL Roofing Materials & Systems Directory and UL website. It is Factory Mutual Approved for recover over FMRC-rated BUR or insulated metal panels.

13. Warranty Programs:
ROOF MATE is backed by 5, 10 and 15 year, non-prorated warranty programs. These guarantee to the Building Owner that the coating system will not leak as result of degradation from normal weathering. All warranty programs are extendable to last for the life of the structure.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
**ROOF MATE HT**
HIGH TENSILE/ELONGATION ACRYLIC ELASTOMER
Exceeds ASTM D6083 Standards

**Technical Data & Application Instructions**

**PRODUCT DESCRIPTION**

ROOF MATE HT is a unique water-based elastomer coating utilizing the latest advances in acrylic technology for roof areas subject to heavy maintenance traffic, severe weather conditions, chemical fallout, etc. High tensile emulsion polymers are combined with reinforcing laminar pigments and non-migrating fire retardants for superior physical properties, durability, weatherproofing, and mildew resistance, ultraviolet resistance and fire retardancy. The fire retardant chemicals are permanently locked into the cured coating and will not leach out upon extended weathering. ROOF MATE HT is a “breathing” coating, allowing moisture vapor to pass through the film while remaining impervious to mass water penetration.

**BASIC USES**

ROOF MATE HT was especially developed as a superior coating for extending the life of metal, conventional built-up, modified bitumen, single-ply, concrete, board-stock and sprayed-in-place polyurethane foam, and composite shingle roofs. Once applied, the substrate is protected from further degradation caused by normal weathering, aging and ultraviolet exposure. ROOF MATE HT forms a waterproof elastomeric seal, uniformly covering the textured profile of various substrates. Its dense, tight finish repels dirt and pollutants while the elastomeric membrane remains permanently flexible. ROOF MATE HT also withstands normal ponding water conditions and performs equally well over flat or sloped roofs.

**COLORS**

ROOF MATE HT is available in standard White, Tan, Light Tan and Solar Gray colors, which are certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in KYMAX topcoat only.

**TYPICAL PROPERTIES**

1. **Solids By Weight:**
   62% (± 2) [ASTM D1644]
2. **Solids By Volume:**
   52% (± 2) [ASTM D2697]
3. **Dry Time For Foot Traffic Resistance:**
   - 3 hours – Light Gray @ 16 wet mils (406 microns)
   - 5 hours – White @ 16 wet mils (406 microns)
   @ 75°F (24°C), 50% R.H. [ASTM D1640]
   *Dry times will increase with higher humidity &/or lower temperature
4. **Ultimate Tensile Strength:**
   550 psi (± 50) (4.0 MPa) @ 70°F (21°C) [ASTM D412]
5. **Elongation at Break:**
   500% (± 50) @ 70°F (21°C) [ASTM D412]
6. **Hardness:**
   75 to 80 Shore A [ASTM D626]
7. **Permeance:**
   2.5 U.S. Perms @ 20 mils [ASTM D1653]
8. **High Temperature Stability:**
   No age hardening or slump up to 250°F (121°C)
9. **Temperature Limits For Normal Service Conditions:**
   -30°F to 200°F (-35°C to 93°C)
10. **Bond Strength:**
    Exceeds cohesive strength of coating [ASTM C794]
11. **Code Approvals:**
    Factory Mutual Class I System
    UL 790 Class A classified

**WARRANTY**

UNITED’S Standard Warranty, issued to the Building Owner, is available for 5-year, 10-year and 15-year periods at no cost. ROOF MATE HT also qualifies for UNITED’S System Warranties, available for 5-year, 10-year and 15-year periods. The System Warranties require additional fees as well as a final inspection. Refer to section entitled Application Instructions as well as individual Warranty Explanation Forms for additional details.
Fire Testing: ROOF MATE HT is a UL 790 Class “A” classified coating over various non-combustible substrates. It also achieved a Class I rating in the FMRC fire test for Insulated Steel Deck Construction. Ratings are subject to the conditions of approval as described in the Factory Mutual Approval Guide or Job Identification #J.I.0Z3Q4.AM, and UL Building Materials Directory, which describes requirements of rated roof systems.

Spread Of Flame Fire Test: Tests were conducted in accordance with ASTM E 108 Fire Tests of Roof Coverings for Class A non-combustible deck test procedures. ROOF MATE HT achieved a Class A rating over a variety of polyurethane foams. At no time during the Spread of Flame Tests were flying brands developed or excessive lateral flame spreads observed. Refer to Factory Mutual Approval Guide for listing details.

Simulated Windstorm Classification Pull Tests: Wind uplift tests were conducted to evaluate the ability of the deck components to resist a simulated wind uplift force without failure of the assembly. ROOF MATE HT passed the Class 1-180 wind uplift requirements over a variety of polyurethane foams. Refer to Factory Mutual Approval Guide or Job Identification #J.I.0Z3Q4.AM.

Simulated Hail Damage Tests: Simulated hail damage tests were conducted to evaluate the ability of the roof cover/insulation combinations to withstand a hailstorm without damage to the covering. After 10 drops of the impactor apparatus, the ROOF MATE HT showed no sign of cracking, splitting, internal separation, delamination or rupture. Refer to Factory Mutual Approval Guide or Job Identification #J.I.0B9A2.AM.

Resistance To Foot Traffic: Tests were conducted to determine the ability of the roof cover/insulation combination to resist foot traffic. After completion of the testing, the samples showed no sign of tearing or cracking. Refer to Factory Mutual Approval Guide or Job Identification #J.I.0B9A2.AM.

Susceptibility To Leakage Test: Tests were conducted to determine the resistance of the roof cover/insulation assembly to water intrusion when subjected to a 6" (15 cm) head of water above the sample as well as air pressure below the sample. After 7 days exposure, the ROOF MATE HT showed no signs of water leakage. Refer to Factory Mutual Approval Guide or Job Identification #J.I.0B9A2.AM.

Low Temperature Flexibility: ROOF MATE HT is capable of withstanding 180° mandrel bends over a 3/16" (5 mm) mandrel @ -25°F (-30°C). Federal Test Method No. 141a-6221/ASTM D522

Resists Abusive Weather: ROOF MATE HT will take abusive weather conditions of all types. Ice, snow, wind driven rain and sand do not penetrate its tough, dense surface under normal conditions.

High Tensile Strength & Elongation Properties: ROOF MATE HT achieves outstanding elongation, tensile strength and tear resistance properties, which are carefully balanced to provide optimum long-term performance. The cured film provides excellent abrasion and impact resistance to withstand extreme weather conditions and maintenance traffic. Its tight finish also exhibits excellent chemical, dirt pickup and mildew resistance.

Bond Strength: ROOF MATE HT achieved a 50 to 60 lb./sq. inch (.34 to .41 MPa) breaking strength when tested in the Instron Universal Testing Instrument. ASTM C297

High Acrylic Resin Content: Solids by volume percentage is only one measure of a coating’s quality. Another basis for determining longevity of a coating is the ratio of filler pigment to polymer content. ROOF MATE HT contains lower filler pigment load and higher levels of acrylic polymer than most coatings. This high ratio of pure acrylic polymer provides long-term weather resistance. ROOF MATE HT’S overall high performance is achieved through the use of elastomer acrylic polymers.

Reduced Energy Cost: ROOF MATE HT White stays clean to reflect the sun’s heat, unlike dark colored roof substrates that retain heat and are subject to UV degradation. Roof temperatures can be reduced in excess of 50°F (28°C). ROOF MATE HT is certified to exceed Energy Star® and CRRC requirements.

Easy Application and Repair: A smaller crew can do the work that used to require many, at a fraction of the cost of other roofing systems. With a ROOF MATE HT roof there is no asphalt to degrade, metal to corrode or seams to come apart and leak. It is formulated to remain flexible to −30°F (-35°C) without cracking, and is impervious to the minor ponding water associated with most roofs. When maintenance is required, the repair is easily accomplished with the use of an acrylic caulk or touch-up with additional ROOF MATE HT.

Colorfast: The acrylic resins utilized in ROOF MATE HT cross-link under exterior exposure to lock in color and lock out dirt. The topcoat color remains true through years of weathering, while the tight, cross-linked surface repels dirt to remain clean and highly reflective.
SURFACE PREPARATION

All surfaces must be clean and dry, and free of any dirt, dust, oil, surface chemicals, or other contaminants that may interfere with optimum adhesion. All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, severe corrosion, sharp projections, ridges, etc. shall be repaired or replaced. New asphalt shall be exposed to ambient conditions for 45 to 60 days before coating.

Deteriorated or badly corroded metal shall be replaced. Rusted areas shall be mechanically abraded to remove all loose rust and then primed with UNITED’S Acrylex 400 rust-inhibitive metal primer for light to medium rust, or Lock-Down for heavy rust. New metal roofs exhibiting any type of surface film shall be washed with a vinegar or muriatic acid solution, or equivalent, to totally remove this film.

Low areas that hold excessive ponding water must be brought into conformance by installing additional drains or adding additional slope to existing drains. Excessive ponding is any area that holds in excess of ½” (5 cm) of water as measured 24 hours after a rainfall.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using United Cleaning Concentrate (UCC), a biodegradable chemical cleaner, and water. High-pressure power washing and/or mechanical scrubbers may be necessary to remove tightly adhering contaminants. Rinse thoroughly with clean water to remove all traces of the UCC cleaner. If roof does not require chemical cleaning, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other loose contaminants.

Refer to separate Roof Mate Master Guide Specifications for the specific substrate being coated for complete surface preparation procedures.

COATING APPLICATION

Prior to applying ROOF MATE HT to the roof surface, all detail work on seams, splits, protrusions, flashings, fasteners, etc. utilizing Roof Mate Butter Grade, Uni-Tape, Roof Mate Fabric and/or Mesh, and Uni-Caps shall have been completed. Any primers, if necessary, shall also have been applied and allowed to dry.

ROOF MATE HT may be applied by conventional or airless spray equipment. Brush or roller may be used for touch-up and edging work, or for small areas that are not practical for spray application. Airless spray is best suited for field application. Use a pump with a minimum 1-gallon per minute (3.8 l/minute) output and 2,000 psi (13,790 kPa) pressure capability. Use a reversible, self-cleaning tip with an orifice size of .027” to .039” (.69 to .99 mm).

ROOF MATE HT must be applied in two or more separate coats to ensure proper coverage and cure rate, and to achieve a pinhole-free continuous film. It is recommended that Gray be used for the first coat(s), thus making it easier to visually control the application of the final coat in White or specified custom color. ROOF MATE HT applied at the rate of one gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 8.3 dry mils (211 microns).

Each coat of ROOF MATE HT shall be applied in a direction perpendicular to the previous coat except when coating metal roof panels. On metal roofs, each coat of ROOF MATE HT shall be applied parallel to the vertical ribs, taking care to coat both sides of each rib. Edges of flat roof areas shall be pre-coated in a “picture frame” configuration.

ROOF MATE HT shall extend up and over all roof substrates on vent pipes, walls, parapets and other protrusions to terminate a minimum of 3” (7.5 cm) above the substrate, creating a self-terminating flashing. Extend coating up and under all counter-flasings where utilized.

All surfaces must be uniformly coated and free from voids, pinholes or blisters. Adequate curing of detail work must take place prior to applying ROOF MATE HT base coat. Subsequent coats of ROOF MATE HT shall be applied only after allowing adequate cure time for the preceding coat(s). Initial cure or dry time to achieve resistance to rain or overnight dew will normally require several hours. Total cure to achieve long term resistance to ponded water will usually take 24 to 72 hours depending on ambient conditions.

Consult separate ROOF MATE Master Guide Specifications for Board-Stock Insulation, Built-Up, Modified Bitumen, EPDM, Hypalon, Metal and Concrete roof substrates for specific film thickness requirements to qualify for UNITED’S 5, 10 and 15-Year Standard and System Warranties.
COATING APPLICATION (Cont.)

If any form of dirt, sand, pollution fallout, etc. is detected on the surface of ROOF MATE HT it is necessary to remove this material before applying an additional coat of ROOF MATE HT. Surfaces should be washed using a biodegradable cleaner such as UNITED’S United Cleaning Concentrate (UCC) only after the ROOF MATE HT film has fully cured. Rinse thoroughly with clean, fresh water to remove all traces of the chemical cleaner and allow to dry. It is the responsibility of the applicator to ensure that the roof is sound and sloped properly, and that the expansion joints, vents and flashings have been installed as specified or required.

As work proceeds, the applicator must periodically check the number of gallons used compared to the square feet coated. If adequate gallonage has not been used according to UNITED’S published warranty requirements and/or project specifications, adjust accordingly and apply additional material to previously coated area(s).

In hot temperatures, partially full containers of ROOF MATE HT may surface-skin. Examine before mixing and remove skin (if present) prior to mixing. To prevent skinning in hot weather during application or in partially full containers, cover container with polyethylene sheeting after mixing.

ROOF MATE HT, properly mixed, is easily pumped and sprayed at temperatures of 60°F (16°C) or greater. Thinning or reducing the mixture is not recommended. Addition of water reduces the rich thixotropic nature of ROOF MATE HT and decreases its ability to achieve a heavy film build with excellent vertical hold.

ROOF MATE HT has excellent dirt releasing ability. Its smooth, low sheen surface resists penetration of soil and contamination, allowing the surface to be readily cleaned.

Use water and United Cleaning Concentrate (UCC) or other similar detergent to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Glycol Ether. Leave the solvent in the lines and equipment until next use. It is not recommended practice to leave ROOF MATE HT in the pump or hoses.

LIMITATIONS & PRECAUTIONS

ROOF MATE HT should generally not be used over cold storage tanks or buildings where a vapor barrier is required. ROOF MATE HT will freeze and become unusable at temperatures below 32°F (0°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 24-hour period after application.

ROOF MATE HT requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Do not apply in the late afternoon if heavy moisture condensation may appear during the night.

ROOF MATE HT may be applied to a wide range of clean, dry and structurally sound substrates. Slope for positive drainage is recommended for any roofing application.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. Check filters frequently to ensure proper protection. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and contact with skin.

Adequate precautions must be taken when applying ROOF MATE HT to occupied buildings to ensure that air conditioners and ventilation units are turned off and covered to prevent vapors from entering the building. Windows should also be kept closed. Signs should be posted around the area to advise building occupants or visitors of the spray activity.

It is good roofing practice to schedule an annual cleaning of the roof surface. This will eliminate the accumulation of leaves, dirt, debris and other contamination. It will also alert the Owner as to any mechanical damage or other problems that may compromise the integrity of the roofing system. Roofs subject to a high degree of traffic or pollution fallout may require more frequent cleanings.

For specific information on safety requirements, Refer to OSHA guidelines and ROOF MATE HT Material Safety Data Sheet.
Technical Data & Application Instructions

**PRODUCT DESCRIPTION**

ROOF MATE CERAMIC is a high solids, water-based acrylic elastomer coating incorporating heat reflective, borosilicate ceramic spheres. This specialized ceramic additive increases the heat reflectivity of ROOF MATE CERAMIC beyond that of typical white reflective coatings. The brilliant white pigments protect the substrate by reflecting in excess of 90% of the sun’s solar heat from the roof surface. ROOF MATE CERAMIC provides elastomeric waterproofing protection over a wide variety of roofing substrates. In utilizing the latest advances in acrylic technology, acrylic emulsion polymers are combined with reinforcing laminar pigments, powerful biocides and non-migrating fire retardants resulting in excellent physical properties, adhesion, durability, weatherproofing, mildew resistance and fire retardancy. The fire retardant chemicals are permanently locked into the cured coating and will not leach out upon extended weathering. ROOF MATE CERAMIC is a “breathing” membrane, allowing moisture vapor to pass through the film while remaining impervious to mass water penetration.

**BASIC USES**

ROOF MATE CERAMIC was especially developed for extending the life of metal, conventional built-up, modified bitumen, single-ply, concrete, board-stock and sprayed-in-place polyurethane foam, and composite shingle roof substrates. ROOF MATE CERAMIC forms a monolithic, waterproof elastomeric seal, uniformly covering the textured profile of these substrates, providing protection from weathering, aging and ultraviolet exposure.

**COLORS**

ROOF MATE CERAMIC is available in standard White, Tan, Light Tan and Solar Gray colors, which are certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in KYMAX topcoat only.

**TYPICAL PROPERTIES**

1. Solids by Weight:  
   61% (±2) [ASTM D1644, D6083]

2. Solids by Volume:  
   55% (±2) [ASTM D2697, D6083]

3. Weight per Gallon:  
   11.2 lbs. (5.1 kg) (± .2) [ASTM D1475]

4. Tensile Strength:  
   200 psi (1.38 MPa) [ASTM D2370, D6083]

5. Elongation:  
   200% [ASTM D2370]

6. Reflectance Rating:  
   93% [ASTM E805]

7. Dry Time (@ 75°F (24ºC), 50% RH:*)  
   Recoat: 4 to 6 Hours  
   Water Resistance: 6 Hours  
   Cure: 24 Hours [ASTM D1640]  
   *For White at 16 wet mils (406 microns)

8. Accelerated Weathering:  
   No cracking, checking or other deleterious effects after 3,000 hours in a Xenon Arc Weather-Ometer.  
   [ASTM D4798, D6083]

9. Cold Temperature Flexibility:  
   Passes ½” mandrel bend at 0ºF (-18ºC)  
   [ASTM D522, D6083]

10. Fungi Resistance:  
    Zero rating, no growth [ASTM G21]

11. Code Approval:  
    UL 790 Class A

**PACKAGING & MIXING**

ROOF MATE CERAMIC is a single-component material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Use a power mixer capable of uniformly mixing the entire container prior to use.

ROOF MATE CERAMIC is easily pumped and sprayed at material temperatures of 60°F (16°C) or greater. Reducing the mixture is not recommended, as it affects the coating’s ability to achieve a heavy film build with excellent vertical hold and hide.
SURFACE PREPARATION

All surfaces must be clean and dry, and free of any dirt, dust, oil, surface chemicals or other contaminants that may interfere with optimum adhesion. All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, severe corrosion, sharp projections, ridges, etc. shall be repaired or replaced. New asphalt shall be exposed to ambient conditions for 45 to 60 days before coating.

Deteriorated or badly corroded metal shall be replaced. Light to medium rusted areas shall be mechanically abraded to remove all loose rust and then primed with UNITED’S Acrylex 400. Heavy areas of sound rust should be primed with UNITED’S Lock-Down primer. New metal roofs exhibiting any type of surface film shall be washed with a vinegar or muriatic acid solution, or equivalent, to totally remove this film.

Low areas that hold excessive ponding water must be brought into conformity by installing additional drains or adding additional slope to existing drains.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using United Cleaning Concentrate (UCC). High-pressure power washing may be necessary to remove tightly adhering contaminants. Rinse thoroughly with clean water to remove all traces of the UCC cleaner. If roof does not require chemical cleaning, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other loose contaminants. Contact UNITED’S Technical Service Department for additional surface preparation procedures on the specific substrate being coated.

APPLICATION

Reinforce all “moving” cracks, seams, splits, control joints, vertical/horizontal interfaces, roof termination points, openings, transition areas, around the base of all vents, pipes and other protrusions, as well as around HVAC units and other roof mounted equipment with ROOF MATE Mesh, embedded into a base coat of ROOF MATE CERAMIC. Light or Medium Gray is normally used as the base coat color.

If incorporating ROOF MATE Fabric for reinforcement of the entire roof, roll the fabric over a strip-coat of wet ROOF MATE CERAMIC, allowing the fabric to conform to the surface contours. Do not allow the ROOF MATE CERAMIC to surface skin prior to rolling out the fabric. Work the ROOF MATE CERAMIC evenly throughout the fabric so that it is totally saturated, eliminating any air pockets, wrinkles or gaps. Apply an additional coat of ROOF MATE CERAMIC over the top of the saturated fabric taking extra care to ensure that edges of the fabric are well saturated and adhered. Overlap consecutive passes of ROOF MATE Fabric a minimum of 2” (5 cm) on each side.

APPLICATION (Continued)

ROOF MATE CERAMIC may be applied by airless spray equipment or roller. Brush or roller may be used for touch-up and edging work, or for small areas that are not practical for spray application. Airless spray is best suited for field application.

ROOF MATE CERAMIC must be applied in two or more separate coats to ensure proper coverage and cure rate, and to achieve a pinhole-free continuous film. It is recommended that Gray be used for the first coat(s), thus making it easier to visually control the application of the final coat in White or specified custom color.

Each coat of ROOF MATE CERAMIC shall be applied in a direction perpendicular to the previous coat except when coating metal roof panels. On metal roofs, each coat of ROOF MATE CERAMIC shall be applied parallel to the vertical ribs, taking care to coat both sides of each rib. Edges of flat roof areas shall be pre-coated in a “picture frame” configuration.

ROOF MATE CERAMIC shall extend up and over all roof substrates on vent pipes, walls, parapets and other protrusions to terminate a minimum of 3” (8 cm) above the substrate, creating a self-terminating flashing. Extend coating under all counter-flashings where utilized.

Typical application rate is 2 to 4 gallons per 100 sq. ft. (.8 to 1.6 l/m²), depending on the existing substrate and desired warranty. Contact UNITED’S Technical Service Department for dry film thickness requirements. All surfaces must be uniformly coated and free from voids, pinholes or blisters.

LIMITATIONS & PRECAUTIONS

ROOF MATE CERAMIC should generally not be used over cold storage tanks or buildings where a vapor barrier is required. It will freeze and become unusable at temperatures below 32°F (0°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 24-hour period after application.

ROOF MATE CERAMIC requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Do not apply in the late afternoon if heavy moisture condensation may appear during the night.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and skin. For specific information on safety requirements, refer to OSHA guidelines and ROOF MATE CERAMIC Material Safety Data Sheet.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
ROOF MATE
BASECOAT
HIGH SOLIDS ADVANCED ACRYLIC ELASTOMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION
ROOF MATE BASECOAT is a 60% volume solids, water-based acrylic elastomer coating utilizing the latest advances in acrylic technology. It combines acrylic emulsion polymers with reinforcing laminar pigments, powerful biocides and non-migrating fire retardants for superior physical properties, adhesion, durability, weatherproofing, mildew resistance and fire retardancy. The fire retardant chemicals are permanently locked into the cured coating and will not leach out upon extended weathering.

ROOF MATE BASECOAT is a “breathing” coating, allowing moisture vapor to pass through the film while remaining impervious to mass water penetration.

BASIC USES
ROOF MATE BASECOAT was especially developed for use in embedding reinforcement fabric at detail areas and/or over the entire roof. It is also used for achieving film build prior to topcoating with ROOF MATE, ROOF MATE QS, ROOF MATE HT or ROOFSHIELD Finish Coat. It is formulated to achieve superior adhesion over metal, conventional built-up, modified bitumen, single-ply, concrete, board-stock and sprayed-in-place polyurethane foam, and composite shingle roof substrates. ROOF MATE BASECOAT forms a waterproof elastomeric seal, uniformly covering the textured profile of these substrates.

COLORS
ROOF MATE BASECOAT is available in standard medium gray color, which provides for a high visual contrast with the application of the subsequent ROOF MATE Finish Coat. The finish coat is available in White, Solar Gray, Light Tan and Tan, as well as an unlimited selection of custom colors to meet specific project requirements. Color chips or samples must be furnished to UNITED for all custom colors.

PACKAGING
ROOF MATE BASECOAT is a single-component material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

MIXING
Use a power mixer capable of uniformly mixing the entire container prior to use. ROOF MATE BASECOAT is easily pumped and sprayed at material temperatures of 60°F (16°C) or greater. Reducing the mixture is not recommended, as it affects the coatings ability to achieve a heavy film build with excellent vertical hold and hide.

SURFACE PREPARATION
All surfaces must be clean and dry, and free of any dirt, dust, oil, surface chemicals or other contaminants that may interfere with optimum adhesion. All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, severe corrosion, sharp projections, ridges, etc. shall be repaired or replaced. New asphalt shall be exposed to ambient conditions for 45 to 60 days before coating.

Deteriorated or badly corroded metal shall be replaced. Rusted areas shall be mechanically abraded to remove all loose rust and then primed with UNIT-ED’S Acrylex 400 or Lock-Down. New metal roofs exhibiting any type of surface film shall be washed with a vinegar or muriatic acid solution, or equivalent, to totally remove this film.

Low areas that hold excessive ponding water must be brought into conformance by installing additional drains or adding additional slope to existing drains.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using United Cleaning Concentrate (UCC). High-pressure power washing may be necessary to remove tightly adhering contaminants. Power-rinse thoroughly with clean water to remove all traces of the UCC cleaner. If roof does not require chemical cleaning, thoroughly sweep, vacuum or blow down roof to remove any dirt, dust or other loose contaminants. Refer to separate Roof Mate Master Guide Specifications for complete surface preparation procedures on the specific substrate being coated.
APPLICATION

Reinforce all “moving” cracks, seams, splits, control joints, vertical/horizontal interfaces, roof termination points, openings, transition areas, around the base of all vents pipes and other protrusions, as well as around HVAC units and other roof mounted equipment with ROOF MATE Mesh, a polyester reinforcement fabric, embedded into ROOF MATE BASECOAT.

Pre-measure the area to be reinforced and cut a strip of 4", 6" or 12" (10, 15 or 20 cm) ROOF MATE Mesh (depending upon the detail) to the desired length. Apply ROOF MATE BASECOAT liberally over the area to be detailed, at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m²), and embed the mesh so that it is centered over the detail area. Using a brush or roller, work the ROOF MATE Mesh into the ROOF MATE BASECOAT to eliminate air pockets, wrinkles and gaps. Apply additional ROOF MATE BASECOAT as necessary, at a minimum of 1 gallon per 100 sq. ft. (.4 l/m²), to ensure that the ROOF MATE Mesh is thoroughly saturated, encapsulated and fully adhered to the substrate.

When incorporating ROOF MATE Fabric for reinforcement of the entire roof, apply ROOF MATE BASECOAT at the rate of 1.5 gallons per 100 sq. ft. (.6 l/m²) to a 4' (1.2 m) wide section of roof where the fabric reinforcement will begin. Embed and encapsulate the end of the reinforcement fabric roll so that it is anchored at that point.

Roll or spray-apply ROOF MATE BASECOAT to a section of roof 4 to 10 feet (1.2 to 3 meters) beyond the fabric at the rate of approximately 1.5 gallons per 100 sq. ft. (.6 l/m²). Roll the reinforcement fabric over the wet ROOF MATE BASECOAT, allowing the fabric to conform to the surface contours. To ensure complete encapsulation of the fabric, it must be rolled into the ROOF MATE BASECOAT while it is still wet. Do not allow the ROOF MATE BASECOAT to surface skin prior to rolling out the fabric.

Work the ROOF MATE BASECOAT evenly throughout the ROOF MATE Fabric so that it is totally saturated, eliminating any air pockets, wrinkles or gaps. Apply an additional coat of ROOF MATE BASECOAT over the top of the saturated ROOF MATE Fabric at the rate of approximately 1 gallon per 100 sq. ft. (.4 l/m²) so that it is totally encapsulated. Take extra care to ensure that edges of the fabric are well saturated and adhered. Overlap consecutive passes of ROOF MATE Fabric a minimum of 2" (5 cm) on each side.

Substrate porosity and texture will determine the amount of ROOF MATE BASECOAT required to encapsulate the reinforcing fabric. Allow the ROOF MATE BASECOAT to dry thoroughly prior to applying ROOF MATE Finish Coat to the roof.

APPLICATION (Continued)

When using ROOF MATE BASECOAT to achieve film build prior to application of the ROOF MATE Finish, apply at the rate of 1 to 1½ gallons per 100 sq. ft. (.4 to .6 l/m²) per coat to achieve the desired film thickness.

ROOF MATE BASECOAT may be applied by airless spray equipment or roller. Brush or roller may be used for touch-up and edging work, or for small areas that are not practical for spray application. Airless spray is best suited for field application.

ROOF MATE BASECOAT can be used to obtain up to ½ of the total dry film thickness requirement specified. However, under no circumstances should the subsequent ROOF MATE Finish be less than 12 dry mils in thickness at any location.

LIMITATIONS & PRECAUTIONS

ROOF MATE BASECOAT should generally not be used over cold storage tanks or buildings where a vapor barrier is required. ROOF MATE BASECOAT will freeze and become unusable at temperatures below 32°F (0°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a 24-hour period after application.

ROOF MATE BASECOAT requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Do not apply in the late afternoon if heavy moisture condensation may appear during the night.

ROOF MATE BASECOAT may be applied to a wide range of clean, dry and structurally sound substrates. Slope for positive drainage is recommended for any roofing application. It is the responsibility of the applicator to ensure that the roof is sound and sloped properly, and that the expansion joints, vents and flashings have been installed as specified or required.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. Check filters frequently to ensure proper protection. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and contact with skin.

For specific information on safety requirements. Refer to OSHA guidelines and ROOF MATE BASECOAT Material Safety Data Sheet.
Technical Data & Application Instructions

**PRODUCT DESCRIPTION**

ROOF MATE LP is a unique water-based elastomeric coating specifically designed to achieve optimum adhesion over new or existing smooth modified bitumen or other asphaltic roof substrates. In combination with a topcoat of standard Roof Mate, Roof Mate HT or Roofshield, ROOF MATE LP effectively extends the life of the roof. It provides a waterproof barrier with excellent resistance to blistering under prolonged ponded water exposure, while blocking bleed-through of asphaltic oils. ROOF MATE LP has approximately five times the adhesion of typical elastomeric acrylic coatings over asphalt-based roofing.

ROOF MATE LP combines acrylic polymers with reinforcing laminar pigments and non-migrating fire retardants for superior physical properties, durability, and weatherproofing. The fire retardant chemicals are permanently locked into the cured coating and will not leach out upon extended weathering. ROOF MATE LP is a “breathable” coating, allowing moisture vapor to pass through the film while remaining impervious to mass water penetration.

**BASIC USES**

The ROOF MATE System was developed to extend the life of conventional built-up, modified bitumen and composite shingle roofs. Once coated, the substrate is protected from further degradation caused by normal weathering, aging and ponded water conditions. ROOF MATE LP forms a waterproof elastomeric seal, uniformly covering the textured profile of the surface and forming a permanently flexible buffer between the substrate and topcoat.

**COLORS**

ROOF MATE LP is available in standard White and Light Gray.

**TYPICAL PROPERTIES**

1. Solids by Weight:
   62% (± 2) [ASTM D1644]
2. Solids by Volume:
   52% (± 2) [ASTM D2697]
3. Dry Time for Foot Traffic Resistance:* 2 hours - Light Gray @ 16 mils wet (406 microns) 5 hours - White @ 16 mils wet (406 microns) @ 70°F (21°C), 50% R.H. [ASTM D1640] *Dry times will increase with higher humidity or lower temperature
4. Ultimate Tensile Strength:
   70 psi (± 10) (0.5 MPa) @ 70°F (21°C) [ASTM D412]
5. Elongation at Break:
   700% (± 50) @ 70°F (21°C) [ASTM D412]
6. Hardness:
   55 to 65 Shore A [ASTM D626]
7. Bond Strength:
   Passes ASTM D6083 on smooth SBS modified bitumen and BUR, and exceeds adhesion requirements for APP modified bitumen [ASTM C794]
8. Permeance:
   3.0 U.S. Perms @ 20 mils (508 microns) [ASTM D1653]
9. High Temperature Stability:
   No age hardening or slump when heated to 250°F (121°C)
10. Cold Temperature Flexibility:
   Passes 180º mandrel bend at 30°F (-1°C) [Federal Test Method No. 141a-6221]
11. Volatile Organic Content (VOC):
   40 grams/liter (calculated)
12. Temperature Limits for Normal Service Conditions:
   -30°F to 200°F (-35°C to 93°C)

**WARRANTY**

UNITED’S Standard Warranty, issued to the Building Owner, is available for 5-year, 10-year and 15-year periods at no cost. ROOF MATE LP, in combination with an approved Roof Mate Topcoat, also qualifies for UNITED’S System Warranties, available for 5-year, 10-year and 15-year periods. The System Warranties require fees as well as a final inspection. Refer to Application Instructions and individual Warranty Explanation Forms for additional details.
PACKAGING & MIXING

ROOF MATE LP is a single-component, ready-to-use material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. ROOF MATE LP may appear well mixed, but upon extended standing will settle into a two-stage suspension. Use a mixer with a blade capable of uniformly blending the entire container. Once properly mixed, ROOF MATE LP is easily pumped and sprayed at material temperatures of 60°F (16°C) or greater. Thinning or reducing the product is not recommended.

SURFACE PREPARATION

All surfaces must be clean and dry, free of any dirt, dust, oil, surface chemicals, or other contaminants that may interfere with adhesion. Loose gravel shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be spudded to achieve the smoothest surface possible. Any unsound areas in the roof, such as blisters, delamination, deterioration, moisture saturation, sharp projections or ridges, shall be repaired or replaced.

Low areas that pond excessively must be brought into conformance by installing additional drains or adding slope to existing drains. Excessive ponding exists in any area that holds more than ½" (1.27 cm) of water as measured 24 hours after a rainfall.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating shall be cleaned using United Cleaning Concentrate (UCC) biodegradable chemical cleaner and water. High-pressure washing or mechanical scrubbing may be necessary to remove tightly adhered contaminants. Rinse thoroughly with clean water to remove all traces of the UCC cleaner. If roof does not require chemical cleaning, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other loose contaminants.

Refer to separate Roof Mate Master Guide Specifications for complete surface preparation procedures on the type of substrate being coated.

COATING APPLICATION

Prior to applying ROOF MATE LP to the roof surface, complete all detail work on seams, splits, protrusions, drains and flashings utilizing Roof Mate Butter Grade, and Roof Mate Fabric or Mesh. Should any primer be necessary on metal protrusions, ducts, flashings, etc., it should be applied and allowed to dry prior to commencing with coating application.

ROOF MATE LP may be applied by conventional or airless spray equipment. Brush or roller should be used for touch-up and edge work, or for areas that are not practical for spray application. Airless spray is best suited for field application. Use a pump with a minimum one gallon per minute (3.8 l/minute) output and 2,000 psi (13,790 kPa) pressure capability. Use a reversible, self-cleaning tip with an orifice size of .027" to .039" (.69 to .99 mm).

ROOF MATE LP is designed for use as an adhesion-enhancing basecoat over asphaltic substrates, and should be topcoated with an approved ROOF MATE finish coat. It must be applied in one or more separate coats to a total of 1.5 to 2.0 gallons per 100 sq. ft. (.6 to .8 l/m²). ROOF MATE LP applied at the rate of one gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 8.3 dry mils (211 microns).

Each coat of ROOF MATE LP shall be applied in a direction perpendicular to the previous coat. Edges of flat roof areas shall be pre-coated in a "picture frame" configuration. ROOF MATE LP must extend up and over all roof substrates on vent pipes, walls, parapets and other protrusions to terminate a minimum of 3" (7.6 cm) above the substrate, creating a self-terminating flashing. Extend coating up and under all counter-flashings where utilized.

All surfaces must be uniformly coated and free of voids, pinholes or blisters. Initial cure or dry time to achieve resistance to rain or overnight dew will normally require several hours. Total cure to achieve long term resistance to ponded water will usually take 24 to 72 hours depending on ambient conditions.

Consult Roof Mate Master Guide Specifications on Built-Up and Modified Bitumen roof substrates for detailed application instructions as well as specific film thickness requirements for UNITED'S Standard and System Warranties.

Use water and UCC or other similar detergent to flush equipment. Purge water from the system using Mineral Spirits.

LIMITATIONS & PRECAUTIONS

ROOF MATE LP will freeze and become unusable below 32°F (0°C), or when temperatures fall below 32°F (0°C) within a 24-hour period after application. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

For specific information on safety requirements. Refer to OSHA guidelines and ROOF MATE LP Material Safety Data Sheet.
ROOF MATE
THE ROOF PRESERVATION SYSTEM

General Application Instructions

SURFACE PREPARATION

All surfaces must be clean and dry, and free of any dirt, dust, oil, loose rust or gravel, surface chemicals, or other contaminants that may interfere with optimum adhesion. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, severe corrosion, sharp projections, ridges, etc. shall be repaired or replaced. Low areas that hold excessive ponding water must be brought into conformance by installing additional drains or adding additional slope to existing drains. Excessive ponding is defined as any area that holds in excess of \( \frac{1}{2} " \) (13 mm) of water as measured 24 hours after a rainfall.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using United Cleaning Concentrate (UCC), a biodegradable chemical cleaner, and water. High pressure power washing and/or mechanical scrubbers may be necessary to remove tightly adhering contaminants. Rinse thoroughly to remove all traces of the UCC cleaner. If roof does not require chemical cleaning, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other loose contaminants.

COATING APPLICATION

Prior to applying ROOF MATE to the roof surface, all detail work on seams, splits, protrusions, drains, flashings, fasteners, etc. utilizing Roof Mate Butter Grade, Uni-Tape, Roof Mate Mesh, Roof Mate Fabric and/or Uni-Caps shall have been completed. Any primers, if necessary, shall also have been applied and allowed to dry.

Airless spray is the preferred method of application for ROOF MATE. A medium to heavy nap roller may be used for application over flat substrates. Brush or roller may be used for touch-up or detail work or for small areas that are not practical for spray application.

ROOF MATE must be applied in a minimum of two separate coats to ensure proper coverage and cure rate, and a pinhole free continuous film. Each coat of ROOF MATE shall be applied in a direction perpendicular to the previous coat, except when coating metal roof panels.

Each coat of ROOF MATE shall be applied parallel to the vertical ribs on metal roof panels, taking care to coat both sides of each rib. Edges of the roof shall be precoated in a “picture frame” fashion.

All surfaces must be uniformly coated and free from voids, pinholes and blisters. Adequate curing of detail work must take place prior to applying ROOF MATE basecoat. Subsequent coats of ROOF MATE shall be applied only after allowing adequate cure time for the preceding coat(s). Initial cure or dry time to achieve resistance to rain or overnight dew will normally require several hours. Total cure to achieve long term resistance to ponded water will usually take 24 to 48 hours depending on weather conditions.

If any form of dirt, sand or pollution fallout is detected on the surface of ROOF MATE, it is necessary to remove this material before applying additional coats. Surfaces should be blown off, swept or rinsed to remove contamination only after the ROOF MATE film has fully cured.

ROOF MATE shall extend up and over all roof substrates on vent pipes, parapets and other protrusions to terminate a minimum of 3" (7.5 cm) above the substrate, creating a self terminating flashing. Extend coating up and under all counter-flashings, where utilized.

When ROOF MATE White is specified for the finish color, it is recommended that Gray be applied for the first coat, thus making it easier to visually control the application of the second coat in White. For three (3) coat work, it is recommended that Gray be applied as the first and second coats as there is a visual color difference between the wet and dry films.
COATING APPLICATION (Cont.)

To obtain a more rapid congealing of the White topcoat at temperatures between 50°F and 70°F (10°C and 21°C), ROOF MATE QS (Quick Set) is available. The quicker gel time of the ROOF MATE QS allows the film to resist a light rainfall or heavy dew in less time than standard ROOF MATE. Over asphaltic substrates, ROOF MATE LP will provide increased adhesion in both dry or ponded water conditions.

Film thickness may be measured using a wet film thickness gauge. This is easily accomplished on smooth surfaces. For textured surfaces, a smooth board is placed on the surface of the roof. ROOF MATE is sprayed with multi-directional spray passes on this smooth board, at the same application rate being used on the roof, and measured with the wet mil thickness gauge in order for the applicator to determine the number of passes required to achieve the specified dry mil thickness.

As work proceeds, the applicator must periodically check the number of gallons used compared to size of area coated. If adequate material has not been used according to UNITED’S Warranty requirements or project specifications, adjust accordingly and apply additional material to previously coated area(s).

In hot temperatures, partially full containers of ROOF MATE may surface-skin. Examine before mixing and remove skin (if present). To prevent skinning in hot weather, during application or in partially full containers, cover container with polyethylene sheeting after mixing.

ROOF MATE, properly mixed, is easily pumped and sprayed at temperatures of 60°F (16°C) or greater. Thinning or reducing the mixture is not recommended. Addition of water reduces the rich thixotropic nature of ROOF MATE and decreases its ability to achieve a heavy film build with excellent vertical hold.

The sprayability of ROOF MATE will depend on the combination of proper equipment and temperature of the coating at time of application. ROOF MATE in the container is very cohesive and difficult to spray at material temperatures below 60°F (16°C).

ROOF MATE has excellent dirt releasing ability. Its tight, smooth, low sheen surface resists penetration of soil and contamination, allowing the surface to be readily cleaned.

ROOF MATE may be applied to a wide range of clean, dry and structurally sound substrates. Slope for positive drainage is recommended for any roofing application. It is the responsibility of the applicator to ensure that the roof is sound and sloped properly, and that expansion joints, vents and flashings have been installed as specified or required. ROOF MATE applied at the rate of 1 gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 8.8 dry mils (224 dry microns).

Use water and UCC Cleaner to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Cellosolve Solvent. Leave the solvent in the lines and equipment until next use. It is not recommended practice to leave ROOF MATE in the pump or hoses.

SPRAY EQUIPMENT

Airless spray equipment is best suited for field applications. The following minimums are recommended:

- **PUMP:** 1 gallon per minute (3.8 l/minute) output and 2,000 psi (13,790 kPa) pressure capability.
- **GUN:** Any airless hand gun compatible with pump used.
- **SCREEN SIZE:** Filter screens should be 30 mesh or larger.
- **TIP SIZE:** A reversible self-cleaning tip with orifice size .027" to .039" (.69 to .99 mm) with a fan angle of 40° or 50°.

ADDITIONAL APPLICATIONS

ROOF MATE can be utilized over most sound, previously coated surfaces. Existing coating must be clean and dry. A test area should always be applied to confirm adhesion. Occasionally a primer will enhance adhesion in marginal situations.

On sound roofing applications requiring only a white topcoat, strictly for reflectivity, ROOF MATE may be applied at a coverage rate less than that required for the complete waterproofing system. On smooth substrates, one coat applied at approximately 1 to 1.5 gallons per 100 sq. ft. (4 to .6 l/m²) is normally adequate. Material requirements will increase with increased surface texture, with the possibility of second coat being required over heavily textured surfaces. It is not normally required to utilize caulk and/or reinforcing fabric with this type of application.

ROOF MATE is effective for extending the life of a wide range of roofing substrates by providing a highly reflective, weatherproof membrane. Consult individual Master Guide Specifications for specific guidelines on each substrate.
The average roof is exposed to a tremendous amount of solar energy, which includes ultraviolet light. This exposure to solar energy increases the surface temperature of the roof, in some cases far above the ambient air temperature. Typically, the darker the roof, the more solar energy it absorbs. This increase in temperature not only accelerates degradation of the roof substrate, but increases the energy requirements for cooling the building.

White, reflective coatings such as ROOF MATE offer many advantages when applied over conventional roof substrates. By reflecting over 80% of the solar energy, ROOF MATE minimizes surface temperature heat gain. This not only prevents degradation of the existing roof substrate, but minimizes expansion and contraction experienced with changes in temperature. The net result is a dramatic extension in the life expectancy of the roofing system. In addition to improved aesthetics, the building owner can look forward to a decrease in energy consumption as a result of lower cooling costs. These energy savings will typically pay for the cost of the ROOF MATE installation in two to five years. Surprisingly, aluminized coatings and galvanized metal absorb more solar energy than they reflect, as per the graph below.

A ROOF MATE roof is not just highly reflective. The elastomer acrylic resins resist solar degradation and remain flexible for years of trouble-free performance. . .Longevity By Design.
Chemical Resistance of Roofing Elastomers

Comparison of Chemical Resistance of Roofing Elastomers

<table>
<thead>
<tr>
<th>Agent</th>
<th>Roofshield®</th>
<th>Roof Mate</th>
<th>Roof Mate HT</th>
<th>Elastuff 102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Water</td>
<td>Very Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Sea Water</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Soap</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Oils and Fats</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Alkali (1N NaOH - Weak Lye Solution)</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Acid (5% HCl -Weak Muriatic Solution)</td>
<td>Very Poor</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Acid Rain (Weak Sulfuric Acid)</td>
<td>Fair</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Deicer (CaCl)</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Antifreeze (Ethylene Glycol)</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Motor Oil</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Diesel Fuel</td>
<td>Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Hydrogen Peroxide</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
</tr>
<tr>
<td>Bleach</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Vinegar (3-5% Acetic Acid)</td>
<td>Very Poor</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Industrial Acid Cleaner (10% HCl)</td>
<td>Very Poor</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Industrial Acid Cleaner (20% Phosphoric)</td>
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<td>Very Poor</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Strong Caustic (20% NaOH Solution)</td>
<td>Fair</td>
<td>Poor</td>
<td>Fair</td>
<td>Fair</td>
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<tr>
<td>Strong Caustic (28% Ammonia)</td>
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<td>Fair</td>
<td>Poor</td>
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<td>Oxygenated Gasoline</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Good</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

Basis of Testing
Incidental Contact Exposure as per ASTM D1308

1. This approach addresses short term spill and splash exposures under normal ambient service conditions.

2. This data is not intended for evaluating resistance to continuous or elevated temperature conditions, however, products that rate “Very Good” or “Excellent” may be candidates for such applications. Additional testing in support of such applications may be available.

3. Finally, incidental contact protocol emphasizes the retention of a coating’s properties, not the protection it should provide to a specific substrate. For example, Roofshield resists seawater exceptionally well, although it may not be a good barrier for concrete exposed to sea water.

Scale and Interpretation

<table>
<thead>
<tr>
<th>Resistance Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>Retains Properties</td>
</tr>
<tr>
<td>Very Good</td>
<td>Slight change/Color change</td>
</tr>
<tr>
<td>Good</td>
<td>Softens</td>
</tr>
<tr>
<td>Fair</td>
<td>Incidental Contact</td>
</tr>
<tr>
<td>Poor</td>
<td>Loss of Properties</td>
</tr>
<tr>
<td>Very Poor</td>
<td>Dissolves</td>
</tr>
</tbody>
</table>

United offers a selection of 5-Year, 10-Year and 15-Year non-prorated Warranty Systems to the Building Owner. The following outline will assist in choosing the ROOF MATE warranty necessary to meet your specific project requirements.

### Dry Film Thickness Requirements*

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Metal</td>
<td>Seam &amp; Fastener</td>
<td>15 (381 microns)</td>
<td>20 (508 microns)</td>
<td>20 (508 microns)</td>
<td>25 (635 microns)</td>
<td>25 (635 microns)</td>
<td>33 (838 microns)</td>
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<tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Built-Up</td>
<td>NA</td>
<td>25 (635 microns)</td>
<td>33 (838 microns)</td>
<td>33 (838 microns)</td>
<td>40 (1016 microns)</td>
<td>40 (1016 microns)</td>
<td>48 (1219 microns)</td>
</tr>
<tr>
<td>Modified Bitumen</td>
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<td>25 (635 microns)</td>
<td>33 (838 microns)</td>
<td>33 (838 microns)</td>
<td>40 (1016 microns)</td>
<td>40 (1016 microns)</td>
<td>48 (1219 microns)</td>
</tr>
<tr>
<td>Hypalon</td>
<td>Seam &amp; Fastener</td>
<td>20 (508 microns)</td>
<td>28 (711 microns)</td>
<td>28 (711 microns)</td>
<td>36 (914 microns)</td>
<td>36 (914 microns)</td>
<td>44 (1118 microns)</td>
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<tr>
<td></td>
<td>Details Only</td>
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<tr>
<td>EPDM</td>
<td>Seam &amp; Fastener</td>
<td>20 (508 microns)</td>
<td>28 (711 microns)</td>
<td>28 (711 microns)</td>
<td>36 (914 microns)</td>
<td>36 (914 microns)</td>
<td>44 (1118 microns)</td>
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<tr>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Board-Stock Insulation</td>
<td>NA</td>
<td>25 (635 microns)</td>
<td>33 (838 microns)</td>
<td>33 (838 microns)</td>
<td>40 (1016 microns)</td>
<td>40 (1016 microns)</td>
<td>48 (1219 microns)</td>
</tr>
<tr>
<td>Concrete</td>
<td>NA</td>
<td>25 (635 microns)</td>
<td>33 (838 microns)</td>
<td>33 (838 microns)</td>
<td>40 (1016 microns)</td>
<td>40 (1016 microns)</td>
<td>48 (1219 microns)</td>
</tr>
<tr>
<td>Composite Shingles</td>
<td>NA</td>
<td>20 (508 microns)</td>
<td>28 (711 microns)</td>
<td>28 (711 microns)</td>
<td>36 (914 microns)</td>
<td>36 (914 microns)</td>
<td>44 (1118 microns)</td>
</tr>
</tbody>
</table>

*Minimum dry mil thickness requirements, excluding joints, seams, flashings, protrusions, drains and other details.

1. The 2-Year Economist Warranty is designed to provide temporary waterproofing on specific substrates by treating joints, seams, flashings, fasteners, protrusions and other details. The Economist Warranty can be converted into a 5-Year, 10-Year or 15-Year Standard or System Warranty, at any time during the initial 2 year warranty period by applying the appropriate ROOF MATE coating to the balance of the roof.

2. United’s 5-Year, 10-Year or 15-Year Standard Warranties are issued at no charge, and cover coating replacement only in the event of a leak due to deterioration as a result of ordinary weather conditions. Representative/Distributor inspection is optional at their discretion, but is not required.

3. The 5-Year System Warranty covers coating replacement and labor in the event of a leak due to deterioration as a result of ordinary weather conditions. A $0.03 per sq. ft. fee is required (minimum $300.00), as is a final inspection. UNITED COATINGS will arrange for an approved Consultant to meet with the Contractor at the jobsite to conduct a full inspection. Cost for the Consultant inspection services per project shall be $500.00. These costs shall be billed directly by UNITED COATINGS to the Contractor.

4. The 10-Year System Warranty covers coating replacement and labor in the event of a leak due to deterioration as a result of ordinary weather conditions. A $0.05 per sq. ft. fee is required (minimum $750.00), as is a final inspection. UNITED COATINGS will arrange for an approved Consultant to meet with the Contractor at the jobsite to conduct a full inspection. Cost for the Consultant inspection services per project shall be $500.00. These costs shall be billed directly by UNITED COATINGS to the Contractor.

5. The 15-Year System Warranty covers coating replacement and labor in the event of a leak due to deterioration as a result of ordinary weather conditions. A $0.07 per sq. ft. fee is required (minimum $1,750.00), as is a final inspection. UNITED COATINGS will arrange for an approved Consultant to meet with the Contractor at the jobsite to conduct a full inspection. Cost for the Consultant inspection services per project shall be $500.00. These costs shall be billed directly by UNITED COATINGS to the Contractor.
Technical Data & Application Instructions

PRODUCT DESCRIPTION
SUNSHIELD is an economical, water-based elastomeric acrylic coating system that provides high reflectivity as well as good weatherability, ultraviolet resistance and fire retardancy for the protection of polyurethane foam and other roofing substrates. It consists of a separate basecoat and topcoat in order to maximize the efficiency of the system, although the topcoat can be used on its own. SUNSHIELD Basecoat and Topcoat are single-package materials designed for easy application with conventional or airless spray equipment, as well as brush or roller.

BASIC USES
SUNSHIELD was especially developed for protecting polyurethane foam insulation, as well as extending the life of new or existing built-up, metal, concrete, modified bitumen, single-ply and composite shingle roofs by providing a white reflective topcoat. The high reflectivity of SUNSHIELD keeps the roof substrate cool, which not only prolongs its longevity, but saves on energy costs. SUNSHIELD’s rich consistency uniformly covers the textured profile of various substrates, forming a permanently flexible monolithic membrane, providing protection from normal weathering, aging and ultraviolet exposure.

COLORS & ENERGY CERTIFICATIONS
SUNSHIELD Basecoat is available in standard Light Gray. SUNSHIELD Topcoat is available in standard White, Tan, Light Tan and Solar Gray colors to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in KYMAX topcoat only.

PACKAGING & MIXING
SUNSHIELD components are single package, ready-to-use materials available in 5-gallon (19 liter) pails and 55-gallon (209 liter) drums.

SUNSHIELD components may appear well mixed, but upon standing will settle into a two-stage suspension. Thoroughly mix the contents of all containers using a power mixer for a minimum of five (5) minutes prior to application.

TYPICAL PROPERTIES
1. Solids by Weight:
   66% (±2)
   [ASTM D1644]
2. Solids by Volume:
   50% (±2)
   [ASTM D2697]
3. Surface Dry Time for Foot Traffic Resistance:
   5 hours at 75°F (24°C), 50% R.H.
   White at 16 wet mils (406 microns)
   3 hours at 75°F (24°C), 50% R.H.
   Gray at 16 mils wet (406 microns)
   Required times will increase @ lower temperatures and/or higher humidities
4. Tensile Strength:
   200 psi (±20)
   [ASTM D412]
5. Elongation:
   180% (±20)
   [ASTM D412]
6. Hardness:
   60 to 70 Shore A
   [ASTM D2240]
7. Permeance:
   2.7 US perms at 22 dry mils
   [ASTM E96]
8. Low Temperature Flexibility:
   Passes 180° flex over ½ mandrel @ -5°F (-21°C) [Federal Test Method No. 141a-6221]
9. Temperature Limits For Normal Service Conditions:
   0°F to 200°F (-18°C to 93°C)
10. Code Approval:
    UL 790 Class A

WARRANTY
UNITED’S 5-Year Standard Warranty, issued to the Building Owner, is a guarantee that the SUNSHIELD coating, when properly applied over sprayed-in-place polyurethane foam or other acceptable roof substrates, will not leak water over a 5-year period. This Warranty is provided by UNITED at no cost. Refer to Application Instructions for minimum dry film thickness requirements.
SURFACE PREPARATION

All surfaces must be clean, dry, and free of any dirt, dust, oil, surface chemicals, or other contaminants that may interfere with optimum adhesion. All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any unsound areas in the roof, i.e. blisters, delamination, deterioration, moisture saturation, sharp projections, ridges, etc. shall be repaired or replaced.

Low areas that hold excessive ponding water must be brought into conformance by installing additional drains or adding additional slope to existing drains. Excessive ponding is any area that holds in excess of ½" (5 cm) of water as measured 24 hours after a rainfall.

Surfaces that are contaminated with oil, grease, embedded dirt, loose paint or coating, etc. shall be cleaned using United Cleaning Concentrate (UCC), a biodegradable cleaner, and water. High-pressure power washing and/or mechanical scrubbers may be necessary to remove tightly adhering contaminants. Rinse thoroughly with clean water to remove all traces of the UCC cleaner. If chemical cleaning is not required, thoroughly sweep, vacuum, or blow down roof to remove any dirt, dust or other contaminants.

New polyurethane foam surfaces shall be coated between 24 and 72 hours following application. Existing foam shall be free of degradation. Any oxidized foam shall be repaired or replaced. Repair any physical damage to the polyurethane foam prior to coating, and do not coat directly over foam that has been mechanically scarified or sanded.

COATING APPLICATION

Prior to applying SUNSHIELD to the roof surface, all detail work on seams, splits, protrusions, drains, flashings, etc. shall have been completed utilizing Roof Mate Butter Grade, Roof Mate Fabric and/or Mesh. Any primers shall also have been applied and allowed to dry. Consult separate Technical Data on these products for details on application.

SUNSHIELD is applied by conventional or airless spray equipment or medium to heavy nap rollers. Brushing may be used for touch-up, edging and other detail work. For airless spray, use a pump with 1-gallon per minute (3.8 l/minute) minimum output, 2,000 psi (13,790 kPa) pressure capability, and a reversible, self-cleaning tip with an orifice size of .027" to .039" (.69 to .99 mm).

SUNSHIELD Basecoat can be used for up to half of the total required coating thickness, and must always be used in combination with SUNSHIELD Topcoat. SUNSHIELD Topcoat can be used on its own to achieve the total required coating thickness.

SUNSHIELD applied at the rate of 1 gallon per 100 sq. ft. (4.1 l/m²) will theoretically yield 8.0 dry mils (203 microns). It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry film thickness required.

To qualify for UNITED’S 5-Year Standard Warranty, SUNSHIELD shall be applied in a minimum of 2 or 3 coats at a minimum total rate of 2.5 to 4 gallons per 100 sq. ft. (1.0 to 1.6 l/m²), depending on the substrate. This coverage rate will theoretically result in 20 to 32 dry mils (508 to 813 microns). The actual dry film thickness required at any location to qualify for UNITED’S 5-Year Standard Warranty Program is 15 to 25 dry mils depending on the substrate. Consult UNITED’S Technical Service Department for specific warranty requirements.

Each coat of SUNSHIELD shall be applied in a direction perpendicular to the previous coat, and must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and be free of any voids, pinholes and blisters. SUNSHIELD shall extend up and over all roof substrates on vent pipes, walls, parapets and other protrusions to terminate a minimum of 3" (7.5 cm) above the substrate, creating a self-terminating flashing. Extend coating up and under all counter-flashings.

If any form of dirt, dust, sand or pollution fallout is detected on the surface of SUNSHIELD, it is necessary to remove this material prior to applying an additional coat. Initial cure or dry time to achieve resistance to rain or overnight dew will normally require several hours. Total cure to achieve long term resistance to heavy rain or ponding water will usually take 24 to 72 hours depending on ambient conditions.

Use water and UCC or other similar detergent to flush equipment. Purge the water from the system using Mineral Spirits or Glycol Ether.

LIMITATIONS & PRECAUTIONS

SUNSHIELD should generally not be used on cold storage applications where a vapor barrier coating is required, or for interior applications in place of a thermal barrier.

SUNSHIELD will freeze and become unusable below 32°F (0°C), or when temperatures fall below 32°F (0°C) within a 24-hour period after application. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur.

Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

For specific information on safety requirements, refer to OSHA guidelines and SUNSHIELD Material Safety Data Sheet.
**PRODUCT DESCRIPTION**

ROOFSHIELD is a water-based, high solids, flexible advanced acrylic coating. High reflectivity combined with good weatherability, ultraviolet resistance, adhesion and ease of application make ROOFSHIELD an effective coating for providing long term reflectivity over a wide range of roofing substrates.

**BASIC USES**

ROOFSHIELD was especially developed for extending the life of new or existing built-up, metal, concrete, single-ply and composite shingle roofs by providing a white reflective topcoat. The high reflectivity of ROOFSHIELD keeps the roof substrate cool, which not only prolongs its longevity, but saves on energy costs. ROOFSHIELD’s rich consistency uniformly covers the textured profile of various substrates, forming a permanently flexible monolithic membrane, providing protection from normal weathering, aging and ultraviolet exposure.

**COLORS**

ROOFSHIELD is available in standard White, Tan, Light Tan and Solar Gray colors, which are certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria. White and Light Tan also meet California Title 24 requirements. All other colors are custom matched by UNITED for the specific application. Color chips or samples must be furnished to UNITED for all custom colors. It is recommended that dark colors be tinted in KYMAX topcoat only.

**PACKAGING & MIXING**

ROOFSHIELD is a single component, ready-to-use material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. ROOFSHIELD may appear well mixed, but upon standing will settle into a two stage suspension. Thoroughly mix the contents of all containers using a power mixer for a minimum of five (5) minutes prior to application. Thinning or reducing the material is not recommended.

**TYPICAL PROPERTIES**

1. Solids by Weight: 70% (+2) [ASTM D2369]
2. Solids by Volume: 60% (+2) [ASTM D2697]
3. Tensile Strength: 250 psi (+20) (1.66 MPa) [ASTM D2370]
4. Elongation: 200% (+20) @ 75°F (24°C) [ASTM D2370]
5. Hardness: 70 to 80 Shore A [ASTM D2240]
6. Permeance: 3.2 Perms @ 17 mils [ASTM E96]
7. Permeability: 0.05 Perm Inches [ASTM E96]
8. Low Temperature Flexibility: Passes 180° flex over 1/8” mandrel @ -5°F (-21°C) [Federal Test Method No. 141 a-6221]
9. Temperature Limits for Normal Service Conditions: 0°F to 180°F (-18°C to 82°C)

**ADVANTAGES**

- **Ultraviolet Resistant** – No deleterious effects after 4,000 hrs. accelerated weathering.
- **Reduced Energy Costs** – Remains white to reflect the sun’s heat, dramatically lowering roof substrate temperature.
- **Long Term Flexibility** – advanced elastic acrylic polymers remain permanently flexible upon extended exterior exposure.
- **Water-Based** – Contains no solvents, cleans up with water. Conforms to all Federal, State and Local air pollution standards.
- **Low Cost Application & Maintenance** – A minimal amount of labor and equipment is required for application. Touch-up is accomplished with acrylic caulk or additional ROOFSHIELD.
- **Color Stable** – The acrylic resins crosslink under UV exposure to lock in color and lock out dirt.
- **High Film Build** – High volume solids allows fast application to uniformly cover textured substrates.
SURFACE PREPARATION

BUILT-UP & MODIFIED BITUMEN ROOFING
All loose gravel, if present, shall be removed by power sweeping and/or vacuuming. Remaining gravel shall be power spud to achieve the smoothest surface possible. Any areas of unsound roof, i.e. blisters, delamination, deterioration, moisture saturation, etc., shall be repaired or replaced. Power sweep, vacuum or blow down roof to remove remaining dirt, dust and other contaminants prior to commencing with coating application. New asphalt shall be exposed to ambient conditions for 45 to 60 days prior to coating, or use Roof Mate LP as a basecoat. Under cold, cloudy and/or rainy conditions a longer period of time may be required.

CONCRETE – All concrete surfaces must be dry, clean, and free of dirt, oil, soapy films, surface chemicals or other foreign contaminants. Concrete surfaces that are contaminated with oil, grease, dirt, etc., shall be cleaned using a biodegradable chemical cleaner such as UNITED’S UCC Cleaner. Rinse thoroughly with clean water to remove all traces of the chemical cleaner. Thoroughly sweep, vacuum or blow down roof to remove remaining dirt, dust and other contaminants prior to commencing with coating application.

METAL ROOFING – All metal surfaces must be dry, clean, and free of any dirt, oil, rust, surface films or other contamination that could interfere with proper adhesion. Deteriorated or badly corroded metal shall be replaced. Rusted areas shall be mechanically abraded to remove all loose rust and then primed with Acrylex 400 high grade rust-inhibitive primer. New metal roofs exhibiting any type of surface film shall be washed with a vinegar or muriatic acid solution, or equivalent, to totally remove this film. All traces of the chemical cleaner shall then be thoroughly rinsed from the surface. Thoroughly sweep, vacuum or blow down roof to remove remaining dirt, dust and other contamination prior to commencing with coating application.

APPLICATION INSTRUCTIONS
ROOFSHIELD may be applied by brush, roller, conventional or airless spray equipment. Airless spray is the preferred method. Brush or roller may be used for touch-up and edging work, or for small areas that are not practical for spray application. Any airless pump capable of 1 gallon (.4 l) per minute output and 2,000 psi (13,790 kPa) pressure will effectively spray ROOFSHIELD. A minimum 3/8" (1 cm) inside diameter high pressure hose is recommended in conjunction with any airless handgun compatible with pump used. Tip size should be between .027" and .039" (.7 and 1.0 mm) with a fan angle of 40° to 50°.

ROOFSHIELD shall be applied in two or more coats to achieve a minimum total dry mil thickness of 15 to 25 dry mils (381 to 635 microns), depending on the substrate. This will require 2 to 4 gallons per 100 sq. ft. (.4 to 1.6 l/m²) depending upon surface texture. ROOFSHIELD should not be applied at more than 24 wet mils (610 microns) in any one coat. Additional coats may be applied as soon as the previous coat is dry enough to allow the applicator to walk on. When two coats are utilized, it is recommended that Gray be used as the first coat, thus making it easier to visually control the application of the second coat in White. Initial cure to achieve resistance to rain or dew will normally take several hours, depending on temperature and humidity.

ROOFSHIELD shall extend up and over all roof substrates on vent pipes, parapets and other protrusions to terminate a minimum of 3" (7.5 cm) above the substrate, creating a self terminating flashing. Extend coating up and under all counter-flashings, where utilized.

The sprayability of ROOFSHIELD will depend on the combination of proper equipment and temperature of the coating at time of application. ROOFSHIELD in the container is very cohesive and difficult to spray at material temperatures below 60°F (16°C). Thinning or reducing the mixture is not recommended. Addition of water reduces the rich thixotropic nature of ROOFSHIELD and decreases its ability to achieve a heavy film build with excellent vertical hold. Use water and UCC Cleaner to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines and equipment until next use. It is not recommended practice to leave ROOFSHIELD in the pump or hoses.

LIMITATIONS & PRECAUTIONS
ROOFSHIELD will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store unless protection from freezing is available. Do not apply ROOFSHIELD at temperatures below 50°F (10°C), or when there is possibility of temperatures falling below 32°F (0°C) within a 24-hour period after application.

ROOFSHIELD requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew or freezing temperatures.

For additional information, refer to OSHA guidelines and ROOFSHIELD Material Safety Data Sheet.
ELASTUFF 101/102
This system consists of a high solids, single component aromatic basecoat, and a highly UV/color stable single component aliphatic topcoat. Both components can be applied by brush, roller or airless spray over a variety of substrates. For use wherever a durable, chemical resistant elastomeric finish is desired. ELASTUFF 102 can also be used on its own over appropriate primers or other polyurethane or polyurea base coats.

ELASTUFF 110
This 100% solids, fast-cure polyurethane is classified as a "rigid" or "structural" membrane. It is a high durometer product exhibiting excellent resistance to fuel oils, gasoline, jet fuel, etc. Ideal for lining metal storage tanks & vessels, as well as pipelines.

ELASTUFF 120
This 100% solids polyurethane/polyurea hybrid is designed primarily for lining concrete tanks, as it has an ideal balance of tensile strength and elongation. It is also NSF 61 classified for use in potable water storage and transfer. Typical applications include lining waste/water treatment tanks, water flumes, cooling towers, power plants, etc., as it has excellent resistance to immersion in water, salt water and alkaline solutions. It is available in spray grade, roller grade and mastic formulations.

UNIFLEX 1500
This is an aluminized polyurea elastomer coating with an excellent balance of physical properties, designed for use over concrete on vehicular traffic decks.

ELASTUFF 125
This is a higher durometer version of ELASTUFF 120 for use over metal or concrete substrates where a harder finish is desired.

ELASTUFF 160
This 100% solids polyurethane/polyurea hybrid is a high durometer, primerless metal coating, although it has approximately 20% elongation, giving it good resiliency and high impact resistance. It has excellent resistance to water, seawater and alkalines, as well as fairly good resistance to ketones. It is used for coating steel and ductile iron pipes, pipe and sheet pilings, rail cars, and other applications requiring a durable metal finish.

ELASTUFF 200
This 100% solids elastomer is an extremely tough, "pure" aliphatic polyurea, exhibiting excellent tensile strength and elongation properties. It can be used on its own or as a topcoat over any of our aromatic polyurethanes or polyureas. It is also available in an anti-fouling formulation for marine use.

ELASTUFF 210/220
Aliphatic polyaspartic polyureas, which can be used on their own or as topcoats over any of our aromatic polyurethanes, polyureas or hybrids. ELASTUFF 210 is 100% solids by volume, while ELASTUFF 220 is 75% solids by volume with an extended pot life. Both are available in either clear or pigmented formulations. Outstanding chemical resistance and durability make them an excellent choice for warehouse and factory floors as well as tank exteriors and structural steel protection.
**ELASTUFF 300**
This 100% solids, "pure" aromatic polyurea coating is formulated to achieve optimum tensile strength, tear strength and elongation properties. This superior balance of physical properties, good chemical resistance and imperviousness to high humidity and cold substrate temperatures make it a good all-around product. It is also used as a liner, secondary containment, basins and slurries, and other applications requiring a tough, durable membrane.

**ELASTUFF 310**
This 100% solids polyurea has an excellent balance of tensile strength, elongation and hardness for under a wide variety of application conditions. It has good chemical resistance and is also impervious to high humidity and cold substrate temperatures. It is also suitable wherever a resilient abrasion resistant, waterproofing membrane is required, including bridge deck membraining, tunnels, secondary containment, waste/water treatment, manhole lining, cooling towers, foam stock, below grade waterproofing, geotextile fabric liners, evaporation ponds, etc.

**ELASTUFF 310 FR**
This is a UL classified, fire-retardant version of ELASTUFF 310 used primarily over sprayed-in-place polyurethane foam insulation on roofs and tanks. It is available in Tan or Aluminized versions.

**ELASTUFF 320 – Manufactured in Beijing, China**
This 100% solids polyurea possesses an excellent balance of tensile strength, elongation and hardness, and is an economical choice over concrete for below grade waterproofing, inter-slab waterproofing, tunnels, planter boxes, EPS or polyisocyanurate foam board, and other substrates. It is also the membrane of choice for waterproofing concrete bridge decks prior to application of the wear surface.

**ELASTUFF 504**
This tough, pot life coating system has been performing under the harshest abrasion conditions for over 30 years. It can be applied by brush, roller, conventional or airless spray over primed steel, concrete, wood or fiberglass substrates. For use wherever an ultra-tough membrane is required, such as ore hopper cars, rail cars, plow blades, etc. It is also used as a repair material over ELASTUFF 300, 310 and 320.
**PREPARATION OF CONCRETE SURFACES**

All surfaces must be clean and free of any moisture, dirt, oil, grease, soapy films, surface chemicals or other foreign contaminants.

Surfaces shall be free of sharp projections, ridges and loose aggregate.

All previous paints or coatings on the substrate must be completely removed, including paint or coatings that are tightly adhered to the surface.

New concrete shall have a “light” to “medium” broom finish. New concrete shall be water-cured and be allowed to cure for a minimum of 28 days.

The actual surface preparation procedures that are to be followed for a specific project will vary depending upon age of the concrete, the degree of finishing or trowelling, or the presence of contaminants or parting compounds. It is suggested that UNITED’S Technical Service Department be contacted for recommendations on each specific application.

New concrete that has a “light” to “medium” broom finish shall be cleaned and etched with 10% Muratic Acid Solution. Dilute in proportion of 1 part 10% acid solution to 3 or 4 parts clean water. Muriatic Acid Solution shall be sprinkled onto the concrete surface. After the solution has stopped bubbling or foaming (normally 5 to 10 minutes), the area shall be scrubbed thoroughly by hand or by using mechanical scrubbers. Surfaces shall then be thoroughly rinsed with liberal amounts of fresh water to assure complete acid removal. Surfaces may require additional rinsing or a high pressure water rinse to remove all traces of the acid solution.

Concrete surfaces that are contaminated with oil, grease, dirt, etc., shall be cleaned prior to acid etching using UNITED Cleaning Concentrate (UCC) and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the UCC cleaner. Consult UCC Technical Data Sheet for complete cleaning instructions.

High pressure power washing may be necessary to remove strongly adhering contaminants. Power washer shall be complete with chemical injector into fluid flow for washing surfaces with UCC cleaner. Power washer shall be rated at a minimum of 4.5 gallons per minute with a minimum operating pressure of 2,500 psi, utilizing a 25° or 40° ceramic nozzle. Apply UCC cleaner under low pressure in accordance with directions in the technical data sheet. After application of UCC cleaner, surfaces shall be power rinsed thoroughly with fresh water under high pressure to remove all traces of the chemical cleaner.

Concrete surfaces having a smooth, steel-trowelled finish must be acid etched or sandblasted. Sandblasting is preferred. The option to acid etch a smooth concrete finish will only be acceptable to UNITED if a uniform surface profile of a minimum 5 to 8 mils (127 to 203 microns) is achieved. Acid etching must be initially approved by an authorized representative of UNITED after a sample area has been completed.

Sandblasting or shotblasting of concrete will be required if the following conditions exist:

1. If concrete surfaces are contaminated to the point that acid, chemical cleaning or power washing is not sufficient for removal.
2. If concrete surfaces have been previously coated.
3. If concrete is subjected to immersion conditions.
4. If concrete finish is determined by UNITED to be unacceptable in its present state.

When blasting, the following recommendations should be followed.

1. Use an abrasive grit or sand to provide a uniform surface profile of a minimum 5 to 8 mils (127 to 203 microns). If wet sandblasting operations are employed, use only silica sand.
2. Wet sandblasting operations should only be employed when the sealer is not scheduled to be applied immediately after blasting.

A self-contained portable blast unit such as Wheelabrator-Frye Inc. Blastrac, may be used in lieu of the above conventional blasting provided a minimum surface profile of 5 to 8 mils (127 to 203 microns) is achieved.

Patch voids and resurface rough or spalled areas utilizing UNITED’S Uni-Crete. It is not necessary to sandblast surfaces that have been repaired with Uni-Crete. Fill cracks with UNITED’S Uni-Crete. Working cracks, cracks over 1/8” (3 mm) in width, and cracks with spalled edges, shall be routed and caked in conjunction with the use of polyethylene backer rod. Sealant shall be trowelled flush using a putty knife with sufficient pressure to fill the cracks or joints completely.

Prior to sealer application, all loose materials, foreign objects, dirt and dust shall be removed by use of a power vacuum. Immediately after vacuuming is completed, concrete surfaces shall be sealed with one (1) coat of UNITED’S Uni-Tile HS Sealer. For details of application, refer to individual Technical Data & Application Instruction sheets.

A minimum of ½ hour dry time shall be allowed between application of the sealer and application of Elastuff. Sealer shall be topcoated with Elastuff within a 48 hour period.
Steel and fabrication defects, such as weld imperfections, delaminations, slivers, etc., must be corrected prior to starting abrasive blasting operations.

All previous paints or coatings on the substrate must be completely removed, including paints or coatings that are tightly adhered to the surface.

All burrs, jagged edges, undercuts, recesses and surface defects shall be ground smooth. Porous welds shall be ground down to pinhole free metal.

Steel surfaces must be blast cleaned to either Near-White (SP10) or White Metal (SP5) depending upon the conditions under which ELASTUFF will be subjected on a specific project. Wet or water vapor sandblasting is not recommended.

The following cleaning procedures are provided for guideline use only. Occasions will arise where the specified method of blast cleaning will not achieve the type of cleaning desired. It is suggested that UNITED’S Technical Service Department be contacted for recommendations on each specific application.

Cleaning procedures as hereinafter specified shall be in strict conformance with the following applicable Steel Structures Painting Council (SSPC) – Surface Preparation Specifications:

- **SSPC – SP1** Solvent Cleaning
- **SSPC – SP5** White Metal Blast Cleaning
- **SSPC – SP10** Near-White Blast Cleaning

All oil, grease, weld flux, and other surface contaminants shall be removed prior to blast cleaning by use of a solvent wash as defined in **SSPC – SP1 Solvent Cleaning**.

Excessive rust-scale shall be removed by mechanical means prior to blast cleaning.

Abrasive blast cleaning shall be not be performed when surface temperature of the steel is less than 5°F (3°C) above the dew point of the ambient air, when relative humidity exceeds 80%, or when there is a possibility that the blasted surface will become wet before the primer can be applied.

The blast cleaned surface shall be primed by the end of the same work day, although each has an open time of several weeks. For specifics of application, refer to individual Technical Data & Application Instruction Sheets.

### STEEL SUBJECT TO DRY ABRASION:

1. **Lightweight Abrasive Material:**
   - **Blast Cleaning** – Surfaces shall be blast cleaned to a Near-White Blast Cleaned Surface Finish (SP10) with a minimum surface profile of 2 mils (51 microns).
   - **Primer** – Surfaces shall be primed with UNITED’S Primer 302, Lock-Down or EMC to a minimum thickness of .80 and a maximum of 1.2 dry mils (20 to 30 dry microns).

2. **Lightweight to Medium Abrasive Materials:**
   - **Blast Cleaning** – Surfaces shall be blast cleaned to a Near-White Blast Cleaned Surface Finish (SP10) with a minimum surface profile of 2+ mils (51 microns).
   - **Primer** – Surfaces shall be primed with UNITED’S Primer 302, Lock-Down or EMC to a minimum thickness of .80 and a maximum of 1.2 dry mils (20 to 30 dry microns).

3. **Heavy Abrasion (Larger than 1"):**
   - **Blast Cleaning** – Surfaces shall be blast cleaned to a Near-White Blast Cleaned Surface Finish (SP10) with a minimum surface profile of 3+ mils (76+ microns).
   - **Primer** – Surfaces shall be primed with UNITED’S Primer 302, Lock-Down or EMC to a minimum thickness of 1.5 and a maximum of 2.0 dry mils (38 to 50 dry microns).

### STEEL SUBJECT TO LIQUID SLURRY:

1. **Plain Water and Minimal Solids:**
   - **Blast** to a White Metal Blast Cleaned Surface Finish (SP5) with a minimum profile of 2 mils (51 microns).
   - **Primer** as specified under #1 above.

2. **Light Slurry with Medium Particles:**
   - **Blast** to a White Metal Blast Cleaned Surface Finish (SP5) with a minimum profile of 2+ mils (51 microns).
   - **Primer** as specified under #2 above.

3. **Heavy Slurry:**
   - **Blast** to a White Metal Blast Cleaned Surface Finish (SP5) with a minimum profile of 3+ mils (76+ microns).
   - **Primer** as specified under #3 above.

Prior to the application of primer, all loose dust and blast particles shall be removed from the surface by use of a power vacuum. Dry air blow-off and brush cleaning are not recommended.

UNITED’S Primer 302 and Lock-Down may be applied by conventional or airless spray. Airless spray is the preferred method. EMC should be apply using a pump style garden sprayer. Surface profile and application conditions will affect coverage rate. For estimating purposes, Primer 302 and Lock-Down applied at the rate of one (1) gallon per 250 to 300 sq. ft. (6.1 to 7.3m²/l) of surface area should result in 1 to 1.5 dry mils (24 to 38 dry microns). If possible, the primed surface should be topcoated on the same day, although each has an open time of several weeks. For details of application, refer to individual Technical Data & Application Instruction Sheets.
**ELASTALL 1000**

**BELOW-GRADE/BETWEEN-SLAB WATERPROOFING**

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**Technical Data & Application Instructions**

**PRODUCT DESCRIPTION**

ELASTALL 1000 is a black, single-component, moisture-cured bitumen-modified polyurethane elastomer. When properly applied, ELASTALL 1000 becomes impervious to moisture, either above or below grade. It can be used over concrete, stone, brick, cement block, metal and wood.

**BASIC USES**

ELASTALL 1000 is designed for use as a below-grade waterproofing membrane on both horizontal and vertical applications. As a between-slab waterproofing membrane, ELASTALL 1000 protects concrete parking decks, roof decks and courtyards. It can be used under terrazzo or tile floors and shower pans, as well as for waterproofing inside planter boxes or under landscaped roof decking.

**TYPICAL PROPERTIES***

1. **Volume Solids:**
   80% (±2) [ASTM D2697]
2. **Tensile Strength:**
   400 psi (±25) [ASTM D412]
3. **Elongation:**
   700% (±100) [ASTM D412]
4. **Hardness:**
   30 Shore Type A [ASTM D2240]
5. **Peel Adhesion:**
   9 pli over concrete [ASTM D903]
6. **Water Absorption:**
   <2% @ 7 days [ASTM D570]
7. **Low-Temperature Flexibility:**
   Passes 1/8" mandrel bend @ -29°F (-34°C) [ASTM D1737]
8. **Moisture Vapor Transmission:**
   1.6 grains/hr./sq. ft.
9. **Cure Time To Recoat:**
   24 hours

*All tests performed in accordance with general requirements of ASTM C836.

**SURFACE PREPARATION**

Surfaces must be sound and free of dirt, dust, oil, grease and other contaminants that could interfere with the adhesion of the ELASTALL 1000 membrane. Concrete should have a minimum cure of 28 days. If curing compounds are used, they must be acceptable for subsequent coating application, or be removed. Consult with UNITED’S Technical Service Department. Do not apply ELASTALL 1000 over concrete surfaces having greater than 15% moisture content.

Control joints and cracks larger than 1/16" in width should be sealed with a high quality urethane caulk prior to application of ELASTALL 1000.

All intersections of the membrane with vertical walls, columns, pipes and other penetrations should be caulked with a 3/4" (1.9 cm) concave bead of urethane sealant, and reinforced by embedding polyester fabric into a tack-coat of ELASTALL 1000.

**COATINGAPPLICATION**

Application in two separate coats is recommended, allowing 24 hours dry time in between. Each coat should be applied in alternate directions to cover the surface with a continuous, pinhole-free membrane. Two coats applied at the rate of 40 sq. ft. per gallon (1.0 l/m²) per coat will achieve a 64 dry mil (1,626 micron) film thickness. If required, this film thickness can be achieved in one application without the danger of outgassing, at an application rate of 20 sq. ft. per gallon (2.0 l/m²). If using ELASTALL 1000 as a waterproof membrane underneath tile, broadcast 30 mesh sand into the final coat to increase the bond.

Protection board must be used prior to backfilling or pouring concrete. ELASTALL 1000 must be protected from ultraviolet light degradation.

**PACKAGING & MIXING**

ELASTALL 1000 is a single-package moisture-cure product, packaged in 1-gallon (3.8 liter) and 5-gallon (19 liter) pails, and also in 55-gallon (209 liter) drums. ELASTALL 1000 is a ready-to-use material generally requiring no special mixing. If containers have sat for an extended period of time prior to use, power mixing with a Jiffy-type mixer may be necessary. Use an explosion-proof mixer that has been grounded and bonded.
ELASTALL 1000 can be applied by airless spray, roller, brush or squeegee. Airless spray is the most efficient method. Recommended application equipment should consist of a pump capable of 3500 psi (24,133 kPa) pressure and 2 gallons (.8 l/m²) per minute output, and a reversible, self-cleaning tip with adjustable orifice size of .027" to .039" (.7 to 1.0 mm). Hose should be 5/8" to ¾" (1.6 to 1.9 cm) I.D. at the pump, reduced to a 3/8" (1.0 cm) whip at the gun. Recommended solvent for use in thinning during spray application as well as cleanup is Xylol.

Factory sealed containers will have a shelf life of six months from date of shipment when stored at 75°F (24°C). Containers that have been opened must be utilized within 24 hours, as ELASTALL 1000 is a moisture-reactive material and will begin to set up after exposure to air. See separate precautions on container label.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
ELASTUFF 220
PURE ALIPHATIC POLYASPARTIC POLYUREA FINISH

Technical Data & Application Instructions

PRODUCT DESCRIPTION

ELASTUFF 220 is a premium performance, high solids coating manufactured using pure aliphatic polyaspartic polyurea resins. It forms a highly cross-linked, durable membrane exhibiting excellent gloss and color retention. ELASTUFF 220 was formulated to achieve an ideal balance of physical properties, including exceptional tensile strength, tear strength and hardness, while maintaining excellent flexibility. Its high durometer finish also exhibits outstanding chemical, abrasion, impact and heat resistance.

ELASTUFF 220 can be applied using conventional or airless spray equipment, notched trowel or squeegee, as well as brush or roller for small or confined areas. It can be used on it’s own, or as a topcoat over other polyurea, polyurethane or hybrid elastomers.

ELASTUFF 220 is a 2-component, highly cross-linked coating, providing a dense, tight film with good chemical resistance to a wide range of acids and bases. It also exhibits excellent hydrolytic stability to withstand a wide range of temperature extremes, in dry or aqueous environments.

BASIC USES

ELASTUFF 220 was especially developed as a superior UV and color stable finish for protecting a wide variety of vertical substrates from abrasion and corrosion. It is an ideal choice for protecting aromatic bascoats from extended exterior exposure, or for use on its own over primed steel, concrete, masonry and fiberglass substrates.

Although it is primarily designed for use on vertical surfaces, ELASTUFF 220 can also be used on horizontal surfaces, wherever a tough, ultraviolet resistant coating is desired. It is an excellent finish for protecting structural steel on tank exteriors, bridges, equipment, railings, and plant maintenance applications. It also makes an ideal topcoat for use in secondary containment, water slides, pools and fountains, industrial floors, hangars, stadiums, decks, balconies and lanais.

ELASTUFF 220 also provides a durable, color stable finish for decorative items such as artificial landscapes, stage props, art objects, etc.

TYPICAL PROPERTIES

1. Ratio: 1:1 By Volume
2. Solids By Weight: 80% [ASTM D1644]
3. Solids By Volume: 76% [ASTM D2697]
4. Weight Per Gallon: Part A = 9.5 lbs. (4.3 kg) Part B = 8.8 lbs. (4.0 kg)
5. Gel Time: 1 Hour @ 75°F (24°C), 50% R.H.
6. Dry Time: 3 Hours @ 75°F (24°C), 50% R.H.
7. Cure Time: 72 Hours
8. Ultimate Tensile Strength: 5,300 psi (±500) (37 MPa) @ 75°F (24°C) [ASTM D412]
9. Elongation at Break: 15% (±2) @ 75°F (24°C) [ASTM D412]
10. Hardness: 80 to 85 Shore D [ASTM D2240]
11. Adhesion: Primed Concrete: 500 to 1,700 psi (±50) (3,448 to 11,724 kPa) Cohesive failure within concrete Primed Steel: 2,000 psi (± 50) (13,793 kPa)
12. High Temperature Stability: No age hardening or slump
13. Cold Temperature Flexibility: Passes ¼” (6 mm) mandrel bend at -4°F (-20°C) (Federal Test Method No. 141a-6221
14. Temperature Limits For Normal Service Conditions -30°F to 180°F (-35°C to 82°C)

COLORS

ELASTUFF 220 is available in standard White, Light Gray and Clear. An unlimited selection of custom colors is also available to meet specific project requirements. Color chips or samples must be furnished to UNITED for all custom colors.

SHELF LIFE

The shelf life of ELASTUFF 220 in unopened containers is 12 months from date of shipment from UNITED’S factory.
PACKAGING & MIXING

ELASTUFF 220 is a two-component, 1:1 ratio material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Blend equal volumes of Part A and Part B using a mixer with a blade capable of uniformly mixing the entire container. If blending, do not mix more material than can be applied within 1 hour. Thinning or reducing the material is not recommended.

SURFACE PREPARATION

All surfaces must be clean and dry, and free from dirt, grease, oils, curing or release agents, soapy films, pollution fallout, surface chemicals, unsound rust, scale, loose paint or coating, and other contaminants that may interfere with optimum adhesion.

Glossy surfaces must be dulled by abrading the surface using brush blasting, sanding or other mechanical means. Chalky, oxidized or other contaminated surfaces must be washed with United Cleaning Concentrate (UCC) or equivalent biodegradable cleaner. Heavy deposits of dirt or contamination may require agitation or equivalent biodegradable cleaner. Metal surfaces must be free of rust scale, forming oils, metal slivers and weld slag, and chemically cleaned or blast abraded as per specific project requirements.

The cleaned or blasted surface shall be primed by the end of the same workday, but in any event before any visible rusting occurs. Prime with UNITED’S Lock-Down or Primer 302 applied at approximately 300 sq. ft. per gallon (7.3 m²/l). If rusting occurs after cleaning, the surfaces must be recleaned prior to coating.

Concrete surfaces must be free from curing and form release agents, surface chemicals, sharp projections, ridges and loose aggregate. Restore any loose aggregate using Uni-Crete or similar polymer modified cement patching or resurfacing compound. Concrete surfaces having a smooth, steel trowelled finish should be acid etched or sandblasted. Prime concrete with UNITED’S Uni-Tile Sealer LV at the rate of 400 to 500 sq. ft. per gallon (9.7 to 12.2 m²/liter), reducing as necessary depending on the porosity of the substrate. See separate Surface Preparation Technical Bulletin or individual product Technical Data Sheets for additional surface preparation and primer application instructions.

ELASTUFF 220 adheres directly to most clean fiberglass and plastic surfaces. New or dense surfaces should be scuff-sanded prior to priming.

COATING APPLICATION

ELASTUFF 220 may be applied using standard conventional or airless spray, notched trowel or squeegee, and brush or roller. Airless spray is the preferred method. A reversible, self-cleaning spray tip with an orifice size of .015” to .021” (.38 to .53 mm) and minimum 40 degree fan angle is recommended. Regardless of the application method, do not exceed 10 wet mils (254 microns) per coat.

Coverage rate will vary depending upon the substrate, its surface profile and porosity. One or two coats, applied at the rate of 200 to 250 sq. ft. per gallon (4.9 to 6.1 m²/l), are usually sufficient for protecting most surfaces. As a topcoat over aromatic basecoats, or for light duty service, a single coat is normally adequate.

During application, take care to maintain a wet edge. For best results, always continue application to natural termination points such as corners or joints. Use fine mesh filters in the pump and gun. Thinning or reducing ELASTUFF 220 is not normally required. If a lower viscosity is desired, thin up to 5% with M.E.K.

A second coat of ELASTUFF 220 can be applied as soon as the first coat has thoroughly dried, and should normally be completed within 48 hours of application of the first coat. Surfaces that have become contaminated must be cleaned prior to topcoating.

Use M.E.K. or Methylene Chloride to flush equipment. Purge the cleaning solvent from the system using Mineral Spirits or Glycol Ether prior to extended storage.

LIMITATIONS & PRECAUTIONS

ELASTUFF 220 components are affected by moisture prior to catalyzation and must be protected from moisture contamination. After opening and if all components are not used, purge with nitrogen or dry air and tightly sealed to protect the components from moisture contamination. Keep all containers tightly closed during storage.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. If used indoors, provide mechanical exhaust ventilation and air line masks or positive pressure hose masks. Avoid contact with eyes and contact with skin.

For specific information on safety requirements. Refer to OSHA guidelines and ELASTUFF 220 Material Safety Data Sheet.
ACRYLEX 100 is a single component, fast-drying, semi-gloss acrylic finish. It was specifically developed to replace solvent-based enamels commonly used for industrial and commercial use. ACRYLEX 100 retains its gloss and color stability even on exterior surfaces subject to high ultraviolet exposure and chemical fallout. The hard, slick finish reduces build-up of dirt, dust and other airborne pollutants.

ACRYLEX 100 exhibits excellent wear resistance, superior weathering characteristics and conforms to all local, state and federal environmental and VOC requirements.

BASIC USES
ACRYLEX 100 was specifically developed for protection of properly primed metal, concrete, wood, fiberglass, plastic, Formica, glass and other surfaces that are subject to corrosion and ultraviolet exposure. ACRYLEX 100 resists exterior exposure much better than alkyd-based enamels, and can be used for interior applications. In addition to its outstanding weather resistant properties, ACRYLEX 100 also exhibits excellent abrasion and impact resistance for high use and high visibility areas.

ACRYLEX 100 is used in industries such as chemical, food processing, hydroelectric, pulp and paper and plant maintenance. Some of its more basic uses include tank exteriors, industrial equipment, machinery, piping and bridges.

ACRYLEX 100 semi-gloss can also be used on exterior concrete, brick, masonry and other surfaces for creating highly visible graphics and a more readily cleaned surface.

COLORS
ACRYLEX 100 is available in standard White, as well as an unlimited selection of custom colors. Color chips must be furnished to UNITED for all custom colors.

<table>
<thead>
<tr>
<th>TYPICAL PROPERTIES</th>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLIDS BY WEIGHT</td>
<td>45% (±1)</td>
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<tr>
<td>SOLIDS BY VOLUME</td>
<td>34% (± 1)</td>
</tr>
<tr>
<td>VISCOSITY</td>
<td>1200 cps</td>
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<tr>
<td>WEIGHT PER GALLON</td>
<td>9.8 lbs (± 2)</td>
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<tr>
<td>GLOSS</td>
<td>65-70 (60° Gardner)</td>
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<td>DRY TIME TO:</td>
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<tr>
<td>TOUCH</td>
<td>75°F, 50% RH</td>
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<tr>
<td>RECOAT</td>
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<tr>
<td>PENCIL HARDNESS</td>
<td>HB</td>
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<tr>
<td>FLEXIBILITY</td>
<td>1/8” Mandrel@ 65°F</td>
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<tr>
<td>ACCELERATED</td>
<td>97% Gloss Retention</td>
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<tr>
<td>WEATHERING</td>
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<tr>
<td>CHEMICAL RESISTANCE</td>
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<td>DIESEL</td>
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<td>FLUID</td>
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<tr>
<td>GASOLINE</td>
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<tr>
<td>MOTOR OIL</td>
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</tr>
<tr>
<td>BRAKE FLUID</td>
<td>Softened</td>
</tr>
<tr>
<td>MUSTARD</td>
<td>No Effect</td>
</tr>
</tbody>
</table>

ADVANTAGES
- **SUPERIOR ADHESION** – Bonds to a wide variety of properly prepared surfaces including steel, aluminum, galvanized metal, wood, fiberglass, Formica and glass.
- **GLOSS AND COLOR STABILITY** – Retains its surface sheen and color even in areas of harsh UV exposure.
- **EXCELLENT FLEXIBILITY** – The acrylic resins utilized allow for maximum flexibility characteristics. It will not become brittle with age.
- **VOC COMPLIANT** – Water-based formulation conforms to all local, state and federal environmental regulations and VOC requirements.
PACKAGING & MIXING

ACRYLEX 100 is a single component, ready to use material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (209 liter) drums.

Mix the material thoroughly prior to use until an even consistency is achieved using a power mixer capable of mixing the contents of the entire container. Reducing the material is not normally necessary, however, thinning ACRYLEX 100 10 to 20% with water will facilitate application by brush or roller, or in other applications where a thinner consistency is desired.

SURFACE PREPARATION

All surfaces must be clean and dry, and free from dirt, grease, oils, pollution fallout, surface chemicals, rust, scale and other foreign contaminants that may interfere with optimum adhesion.

Any existing paint or coating, if not completely removed, shall be checked to verify that it is tightly adhered to the substrate and free from corrosion. Prior to coating over any existing paint or coating, a test area must first be applied to verify compatibility and adhesion. Glossy surfaces must be dulled by abrading the surface using brush blasting, sanding or other mechanical means. ACRYLEX 100 can also be applied directly to a variety of pre-primed surfaces. Always spot test over a small section to confirm compatibility and adhesion.

When ACRYLEX 100 is applied directly to concrete, steel, wood or fiberglass substrates, the following surface preparation procedures are recommended:

METAL SURFACES: All metal surfaces must be free of rust scale, forming oils, metal slivers and weld slag. Metal surfaces must be chemically cleaned or blast abraded according to the specific project requirements.

The cleaned or blasted surface shall be primed by the end of the same work day, but in any event before any visible rusting occurs. If rusting occurs after cleaning, the surfaces must be re-cleaned prior to coating.

Prime properly prepared metal surfaces using UNITED'S Acrylex 400 Primer or Lock-Down, depending upon specific project requirements and specifications, at approximately 250 sq. ft. per gallon (6.1 m²/l).

CONCRETE SURFACES: Concrete surfaces must be free from curing agents, form release agents, surface chemicals, sharp projections, ridges and loose aggregate.

Sandblasting of concrete will be necessary if the surfaces are contaminated to the point that acid, chemical cleaning or power washing is not sufficient for removal. Concrete surfaces having a smooth, steel trowelled finish should be acidi etched or sandblasted.

Concrete surfaces shall be primed with one (1) coat of UNITED'S Uniseal at the rate of approximately 250 sq. ft. per gallon (6.1 m²/l).

WOOD SURFACES: Wood shall be free from dust, ridges and projections. Fill any imperfections with a quality wood filler or urethane caulk and strike smooth.

Surfaces shall be primed with one (1) coat of UNITED'S Acrylex 400 at the rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l).

OTHER SURFACES: ACRYLEX 100 adheres directly to most clean fiberglass and plastic surfaces. New or dense surfaces should be scuff-sanded. Severe oxidized or chalky surfaces must be primed with one coat of Uniseal at the rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l).

APPLICATION

ACRYLEX 100 may be applied by airless spray, air-atomized airless or conventional spray equipment. Brush or roller may also be used for small or confined areas, or other situations where spray application is not practical. ACRYLEX 100 also lends itself to application by dipping.

Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6895 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used. A reversible, self-cleaning tip with an orifice size of .013" to .019" and a minimum of 40° fan angle is recommended. A fine-finish tip will aid in achieving the smoothest possible finish.

ACRYLEX 100 should normally be applied in a minimum of 2 separate coats. Coverage rate will vary with surface profile, application conditions and project requirements. Typical application rate is 200 to 250 sq. ft. per gallon (4.8 to 6.1 m²/l) per coat. Highly corrosive or other severe conditions will require either an additional coat, or heavier application rate to achieve optimum protection.

Recoating can be done at any stage of cure, provided the film is dry to the touch. Totally cured films should be scuff-sanded before recoating.

Use water and UCC Cleaner to thoroughly flush equipment. Purge the water from the system using Mineral Spirits or Cellosolve solvent. Leave the solvent in the lines until next use.

LIMITATIONS & PRECAUTIONS

ACRYLEX 100 will freeze and become unusable below 32°F (0°C). Do not ship or store unless protection from freezing is available.

Do not apply if conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply in the late afternoon if moisture condensation can appear during the night. Do not apply ACRYLEX 100 at temperatures below 50°F (10°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a two hour period after application.

ACRYLEX 100 may be an irritant to skin. Avoid breathing of vapor or spray mist. Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and skin.

For additional information, refer to OSHA guidelines and ACRYLEX 100 Material Safety Data Sheet.
1. For best results, the surface to be treated must be clean, dry and free of sawdust, soil or grease. If necessary, thoroughly clean the surface using a wood wash or mill glaze remover/ conditioning product designed for use prior to application of a penetrating stain.

IN-WOOD is recommended for use on bare wood that has not been previously treated with paint or heavy-bodied stain.

(Note: If the wood has been previously treated with a stain or paint product, it is necessary to completely strip the old finish from the wood in order to achieve optimum penetration of IN-WOOD Stain).

Development of a wood preservative in the late 1980’s eventually became known as IN-WOOD Stain due to its unique ability to penetrate into the wood grain. The research and development team behind the creation of this formula realized that the ideal method of protection, while eliminating problems associated with peeling and cracking over horizontal surfaces, was to actually get the coating IN the WOOD.

With over 85 years of experience and two decades of product testing, IN-WOOD Stain is without a doubt one of the highest quality wood preservative on the market today.

IN-WOOD Stain Application

1. Stir IN-WOOD thoroughly using an upward motion from the bottom of the container prior to application, as well as frequently during use.

2. Apply IN-WOOD on a warm, clear day when there is no chance of rain or frost within 24 hours of application. (Ideal temperature is 45°F to 75°F / 7°C to 24°C).

3. Whenever possible, avoid application under direct sunlight or during periods of extreme temperatures, which may cause IN-WOOD to dry too quickly, before it is thoroughly absorbed by the wood.

4. Apply IN-WOOD using a brush, roller or sprayer.
Our majestic North American forests provide timber products that have fulfilled our needs for over two centuries. Forests were once seen as an unlimited resource, a misconception with potentially devastating effects. Today, most forests in North America are well managed, the many delicate ecosystems no longer threatened by overharvesting. It is now understood that our timber products are a precious, limited resource.

Consumers can contribute very significantly toward helping to conserve forest products by extending their usable life. IN-WOOD Stain was specifically developed to minimize the aging and degradation of exterior wood caused by natural atmospheric conditions.

**IN-WOOD Exterior Wood Finish**

Formulated from the highest quality blend of oils, IN-WOOD has been proven to preserve wood and protect against damage caused by moisture and UV attack.

**Quality**

IN-WOOD provides long-term protection, enhancing the natural beauty of wood through the use of state-of-the-art Trans-Oxide pigments. This allows maximum penetration for premium performance.

**New Wood**

Keep wood looking new longer by blocking the damaging effects of the sun. Ultraviolet rays will bleach untreated wood, leaving it dull and gray. IN-WOOD blocks this effect and preserves the wood’s natural beauty.

**Older Wood**

Weathered wood can have new life with IN-WOOD Stain. Once the wood has been thoroughly cleaned and is free of any previous stain, paint or biocontaminants, IN-WOOD can restore the woods natural beauty.

**One Coat**

A single coat of IN-WOOD, properly applied, can be expected to last 3 to 5 years on a flat surface. When applied to a vertical surface such as a fence or log home, the finish will last up to 7 years prior to requiring a recoat.

IN-WOOD protects the wood fibers against degradation from water, ultraviolet radiation (sunlight) and fungus. The penetrating formula contains a powerful microbicidal for a broad spectrum of protective qualities. IN-WOOD Stain can actually help maintain the wood in its original state.

IN-WOOD does not form a heavy, “paint-like” film. The natural wood grain is maintained with a finish that will not peel, flake or crack.

IN-WOOD contains far more protective ingredients than ordinary deck stain. These are readily absorbed by the wood, and provide superior long-term protection.

**ADVANTAGES**

1. **Deep Penetration:** Ultra low viscosity formula allows IN-WOOD to penetrate deeply into the wood fibers.

2. **Water Repellent:** Exceeds U.S. Military Specification MIL TT-W-572 for water repellency. Prevents damage from water and the subsequent effect on fiber breakdown from winter freeze-thaw cycles.

3. **High Solids:** IN-WOOD’S 56% solids content by volume can be compared to the 5% to 12% solids found in most other natural wood preservatives.

4. **Protective Pigments:** Trans-Oxide colors block out harmful UV rays, preventing degradation of the wood fibers. The Natural color also contains an ultraviolet absorber to provide invisible protection for a natural appearance.

5. **Mold Protection:** Prevents unsightly discoloration caused by Trichoderma, Gliocladium and Penicillium surface molds, as well as discoloration from green or black Mycelia spores.

6. **Sapstain Protection:** Prevents discoloration produced by sapstain fungi hyphate, which ranges from gray to blue.

7. **Wood Decay Protection:** Prevents decay caused by enzymatic decomposition of the cell wall constituents by Chaetomium Globosum, Coniophora Putean and Poria Incrassata fungi.

8. **Safe To Use:** The microbicidal has been evaluated as having very low acute and dermal toxicity; lower than many commonly used food additives and oral drugs.

9. **Resistance to Sulfide Staining:** Industrial areas containing sulfide fumes will darken ordinary finishes. IN-WOOD is not affected by sulfide fumes.

IN-WOOD satisfies the SCAQMD definition of a Clear wood Finish. It is available only in clear or transparent shades. The three oil blend forms a film as a barrier to water.
**IN-WOOD**

**PENETRATING WOOD PROTECTION AND STAIN**

**Technical Data & Application Instructions**

**PRODUCT DESCRIPTION**

IN-WOOD utilizes state of the art wood protection technology in combining the highest quality oils with microscopic Trans-Oxide pigments, allowing maximum penetration for long term performance. Trans-Oxide pigments, at approximately .01 micron, are 1/15 the size of standard paint or stain pigments. These Trans-Oxide pigments allow for superior penetration and ultraviolet protection. The UV transmission is reduced to nearly 5% compared to the 50-65% transmission of common pigments found in semi-transparent stains. A natural version is also available for maintaining wood in its present or natural state.

IN-WOOD protects the wood fiber against degradation from water, ultraviolet radiation (sunlight), and fungi. The penetrating natural oils of IN-WOOD contain a combination of powerful microbicides. These microbicides have a broad spectrum of protective activity and can actually help maintain the wood in its original state.

Due to the deep penetration qualities of IN-WOOD, it does not form a “paint-like” film. The natural wood grain beauty is maintained with a finish that will not peel, flake, or crack.

IN-WOOD contains far more protective ingredients than ordinary wood preservatives. These ingredients are absorbed deeply into the wood, providing superior protection compared to conventional finishes and stains.

**BASIC USES**

New as well as old or weathered wood can be stained and weatherproofed with IN-WOOD. Cedar roofing can be maintained mildew free. Wood decking can be preserved without worry of peeling. Virtually any wood surface, interior as well as exterior, can be enhanced with the protective qualities of IN-WOOD.

IN-WOOD is also an excellent choice for the protection of wood docks and planking. The microbicides used in the formulation are not classified as carcinogenic. The cured IN-WOOD penetrant will not release toxic chemicals into lakes, rivers or other waterways.

**TYPICAL PROPERTIES**

1. Solids by Weight:
   45% (±1) [ASTM D2369]
2. Solids by Volume:
   40% (±1) [ASTM D2697]
3. Viscosity:
   5-10 cps [ASTM D2196]
4. Flash Point:
   110°F [ASTM D3278]
5. Weight per Gallon:
   7.2 lbs. (3.3 kg) (±0.2) [ASTM D1475]
6. Dry Time:
   12 to 24 hours at 75°F, 50% R.H. [ASTM D1640]
7. VOC:
   <475 grams/liter

**ADVANTAGES**

1. Deep Penetration: Ultra low viscosity allows IN-WOOD to penetrate into pores and micro-openings within the wood.
2. Repels Water: Exceeds military specification MIL TT-W-572 for water repellency. Prevents damage from water and subsequent effect on fiber breakdown from winter freeze-thaw cycles.
3. High Solids or Natural: Trans-Oxide colors block out harmful UV rays, preventing degradation of the wood fibers. Natural also contains an ultraviolet absorber to invisibly protect the wood fibers.
4. High Solids: IN-WOOD’S 40% solids content by volume can be compared to the 5% to 12% solids found in many natural wood preservatives.
5. Mold & Algae Protection: Prevents unsightly discoloration caused by Trichoderma, Gliocladium, and Penicillium surface mold as well as discoloration from green or black mycelia spores.
6. Sapstain Protection: Prevents discoloration produced from sapstain fungi hyphace which ranges from gray to blue.
7. Wood Decay Protection: Prevents decay caused by enzymatic decomposition of the cell wall constituents by Chaetomium Globosum, Coniophora Putean and Poria Incrassata fungi.
8. Safe To Use: The microbicide has been evaluated as having very low acute and dermal toxicity; lower than many commonly used food additives and oral drugs.
9. Resistance to Sulfide Staining: Industrial areas containing sulfide fumes will darken ordinary finishes. IN-WOOD is not affected by sulfide fumes.
COLORS

IN-WOOD is available in Natural and several standard, natural-tone Trans-Oxide colors. A wide variety of colors and tones can be obtained by intermixing the Trans-Oxide colors or by mixing colors with Natural.

PACKAGING & MIXING

IN-WOOD is packaged in 1-gallon (3.8 l) and 5-gallon (19 l) containers. Stir material thoroughly from the bottom of the can before application.

SURFACE PREPARATION

Surface must be clean, dry, and free of dirt, grease and other foreign matter. Certain types of wood have more surface imperfections than others. Because IN-WOOD is semi-opaque, care should be taken to make sure that any undesirable surface imperfections are corrected prior to application. New wood should either be allowed to weather or should be treated with a surface conditioner prior to the application of IN-WOOD. This will maximize penetration and protection. Ask your UNITED Representative for further information.

APPLICATION

IN-WOOD may be applied by brush, roller, spray or dipping. Surfaces must be clean and dry. Deep penetration into the wood fibers can only take place when the moisture content in the wood is relatively low.

Application rates will vary with surface texture, porosity and method of application. Coverage will average 150 to 300 sq. ft. per gallon (3.7 to 7.3 m²/l). It is important to maintain a wet edge to avoid lap marks. This will ensure that an even, uniform appearance is achieved. For best results and maximum durability, generously apply IN-WOOD to the surface almost to the point of running, then brush or roll the excess material into the wood surface. On most new or tight-grained surfaces, one coat is all that is recommended. Weathered or porous surfaces may require 2 coats to adequately seal the substrate.

If a second coat is required it must be applied the same day, before the first coat has a chance to cure. Do not allow excess material to build on the surface.

APPLICATION (cont.)

IN-WOOD cannot be applied to previously painted surfaces unless all of the previous paint has been removed to expose the bare wood. In some cases this can be accomplished through the use of a high power pressure washer. Thinning of IN-WOOD is not necessary. Tools and equipment are easily cleaned with UNITED's Turpolene or Mineral Spirits.

WARRANTY

IN-WOOD is warranted for a period of (5) five years from the date of purchase against CRACKING, PEELING or FLAKING from a properly prepared wood surface, when applied according to UNITED's printed Application Instructions.

IN-WOOD may experience slight fading or surface wear as it ages, although the wood will remain protected. Periodic recoating will ensure an aesthetically pleasing finish.

This warranty does not apply to damage or failure caused by breakdown of the underlying wood substrate or misuse of the surface. In the event the IN-WOOD fails to conform to this warranty, UNITED will supply replacement product at no charge. Any and all labor costs are specifically excluded from this warranty.

PRECAUTIONS

In the liquid state, IN-WOOD contains hydrocarbon solvents (mainly mineral spirits). When applying IN-WOOD to an existing dock or other marine application, utilize a brush or roller to apply the material rather than spray equipment. Every attempt should be made to prevent the solvents contained in IN-WOOD from entering the water.

Provide adequate ventilation during application. If IN-WOOD contacts the skin, clean with soap and water. In case of contact with eyes, flush with water for 15 minutes and see a physician if irritation persists. Refer to IN-WOOD Material Safety Data Sheet (MSDS) for complete safety information.
ACRYLEX 400
UNIVERSAL ACRYLIC PRIMER FOR
METAL, MASONRY & WOOD

Technical Data & Application Instructions

PRODUCT DESCRIPTION

ACRYLEX 400 is a single component, premium quality exterior acrylic latex primer that is blister and stain resistant, permanently flexible and highly durable. It exhibits excellent corrosion resistance over metal substrates, alkali resistance over concrete and masonry, and tannin-blocking ability over wood surfaces. Because of its application versatility, ACRYLEX 400 can be topcoated with a wide variety of finish coats. Its fast dry quality, weather resistant characteristics and extended open time, also make it an effective shop primer.

ACRYLEX 400 is a water-based, medium viscosity material, and conforms to all local, state and federal environmental and VOC requirements.

BASIC USES

ACRYLEX 400 is effective in providing corrosion protection, flash rust resistance and enhanced adhesion over steel, aluminum and galvanized metal surfaces. It can be applied over lightly (or "flash") rusted to moderately rusted, sound surfaces. Areas that exhibit heavy rust should be primed with UNITED’S Lock-Down. Scaly rusted metal must be brought into sound condition or be replaced. Roof Mate, Roofshield, Sunshield and Acrylex 100 all achieve outstanding adhesion to ACRYLEX 400.

ACRYLEX 400 can be used over new or unpainted wood, where it is effective at blocking tannin bleed-through. It is also effective at locking down residual chalkiness on previously painted exterior surfaces. Over concrete and masonry substrates, the alkali resistance of ACRYLEX 400 make it an ideal choice for use under UNITED’S Acryclad, Aquathon and Master Wall systems.

ACRYLEX 400 is a single component, off-white, ready to use material available in 1-gallon (3.8 liter) cans and 5-gallon (19 liter) pails.

PHYSICAL PROPERTIES

1. Solids by Weight: 46% (+/−1) [ASTM D2369]
2. Solids by Volume: 36.2% (+/−1) [ASTM D2697]
3. Weight per Gallon: 10.1 lbs (4.6 kg) (+/−2) [ASTM D1475]
4. Dry Time To Touch: 20 to 30 minutes @ 75°F (24°C), 50% R.H. [ASTM D1640]
5. Cure Time for Recoating: 1 to 24 hours @ 75°F (24°C) [ASTM D1640]
   Topcoating time for water-base products is approximately 1 hour. Allow 24 hours prior to topcoating with solvent-based products.
6. Volatile Organic Content (VOC): 87 grams/liter (calculated)
7. Low & High Temperature Limits: -30°F to 150°F (-34°C to 66°C)

ADVANTAGES

• APPLICATION VERSATILITY: ACRYLEX 400 exhibits excellent adhesion over a wide variety of properly prepared surfaces including steel, aluminum, galvanized metal, new and weathered wood, previously painted surfaces, concrete, masonry and brick. Extended open time allows for shop priming.

• NON-LIFTING: Topcoats with strong solvents may be applied over cured ACRYLEX 400 without lifting or bubbling the primer from the metal surface.

• EXCELLENT FLEXIBILITY: The high ratio of acrylic resins contained in ACRYLEX 400 provide for maximum penetration and flexibility characteristics, as well as excellent cold temperature performance. It will not become brittle with age.

• VOC COMPLIANT: ACRYLEX 400 is a water-based product and conforms to all local, state and federal environmental regulations and VOC requirements. Application and cleanup is easily accomplished using soap and water.
**SURFACE PREPARATION**

All surfaces must be clean and dry, and free from dirt, grease, oils, curing or release agents, soapy films, pollution fallout, surface chemicals, unsound rust, scale and other foreign contaminants that may interfere with optimum adhesion.

All loosely adhering paint or coating shall be completely removed by scraping, pressure washing, blasting or other mechanical means. Any existing paint or coating, if not completely removed, shall be checked to verify that it is tightly adhered to the substrate. Prior to coating over any existing paint or coating, a test area must first be applied to verify compatibility and adhesion.

Glossy surfaces must by dulled by abrading the surface using brush blasting, sanding or other mechanical means. Chalky, oxidized or other contaminated surfaces must be washed with United Cleaning Concentrate (UCC) or equivalent biodegradable cleaner. Heavy deposits of dirt or contamination may require agitation with a stiff-bristle broom or similar mechanical scrubber.

**METAL SURFACES:** All metal surfaces must be free of rust scale, forming oils, metal slivers and weld slag. Metal surfaces must be chemically cleaned or blast abraded according to the specific project requirements. Processing oils on new galvanized metal surfaces must be removed using a vinegar or muriatic acid solution as defined in SSPC-SP8 Pickling.

The cleaned or blasted surface shall be primed by the end of the same work day, but in any event before any visible rusting occurs. If rusting occurs after cleaning, the surfaces must be recleaned prior to coating.

**WOOD SURFACES:** Wood shall be free from dust, ridges and projections. All pits, gouges, knotholes and other depressions shall be filled and leveled using exterior grade wood putty. Degraded, deteriorated or unsound surfaces shall be repaired or replaced. ACRYLEX 400 will provide tannin and stain-blocking qualities over wood substrates.

**CONCRETE SURFACES:** Concrete surfaces must be free from curing agents, form release agents, surface chemicals, sharp projections, ridges and loose aggregate. New concrete should be water-cured in lieu of using a curing compound. Restore any loose aggregate to a reasonable condition using Uni-Crete or similar polymer modified cement patching or resurfacing compound.

Sandblasting of concrete will be necessary if the surfaces are contaminated to the point that acid etching, chemical cleaning or power washing is not sufficient for removal. Concrete surfaces having a smooth, steel trowelled finish should be acid etched or sandblasted. ACRYLEX 400 provides excellent alkali resistance over concrete and masonry substrates.

**OTHER SURFACES:** ACRYLEX 400 adheres directly to most clean fiberglass and plastic surfaces. New or dense surfaces should be scuff-sanded prior to priming.

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**APPLICATION**

ACRYLEX 400 may be applied by brush, conventional or airless spray. Any airless spray capable of 1,000 psi (6,980 kPa) and ½ gallon per minute (1.9 l/minute) can be used. A reversible, self-cleaning spray tip with an orifice size of .015” to .021” (.38 to .53 mm) and minimum 40 degree fan angle is recommended. Before spraying, flush equipment with clean water to prevent contamination.

Coverage rate will vary depending upon the substrate, its surface profile and porosity. One coat is usually sufficient for priming most surfaces. The following chart should be used as a guideline only for determining approximate application rates:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Coverage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized Metal</td>
<td>300 ft²/gal (7.3 m²/l)</td>
</tr>
<tr>
<td>Steel</td>
<td>200 ft²/gal (4.9 m²/l)</td>
</tr>
<tr>
<td>Aluminum</td>
<td>300 ft²/gal (7.3 m²/l)</td>
</tr>
<tr>
<td>Smooth Concrete</td>
<td>250 ft²/gal (6.1 m²/l)</td>
</tr>
<tr>
<td>Standard Block</td>
<td>200 ft²/gal (4.9 m²/l)</td>
</tr>
<tr>
<td>Lightweight or Textured Block</td>
<td>150 ft²/gal (3.7 m²/l)</td>
</tr>
<tr>
<td>Wood</td>
<td>250-300 ft²/gal (6.1-7.3 m²/l)</td>
</tr>
</tbody>
</table>

When using ACRYLEX 400 as a spot primer over previously coated surfaces, abrade the existing material to a feather edge so that the topcoat makes a smooth transition over the primed areas. Apply using multi-directional spray passes to assure positive coverage. On porous or textured surfaces requiring more than one coat, subsequent coats should be applied in a direction perpendicular to the previous coat after it has dried.

ACRYLEX 400 can be topcoated as soon as it is thoroughly dried, and should normally be topcoated within 48 hours of application. Surfaces that have become contaminated must be cleaned prior to topcoating. When used as a shop primer, the surfaces should be thoroughly washed with UCC or equal, and spot primed as necessary prior to topcoating.

Use water and UCC to thoroughly flush the equipment. Purge the water from the system using a mild solvent, leaving the solvent in the lines until next use.

**LIMITATIONS & PRECAUTIONS**

ACRYLEX 400 will freeze and become unusable below 32°F (0°C). Do not ship or store unless protection from freezing is available.

Do not apply if conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply ACRYLEX 400 at temperatures below 50°F (10°C), or when there is a possibility of temperatures falling below 32°F (0°C) within 2 hours of application.

Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and skin. For additional information, refer to OSHA guidelines and ACRYLEX 400 Material Safety Data Sheet.

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Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantee of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
ELASTUFF METAL CONDITIONER
(EMC)
SINGLE COMPONENT, ONE STEP PICKLING PROCEDURE

Technical Data & Application Instructions

PRODUCT DESCRIPTION
ELASTUFF METAL CONDITIONER (EMC) is a single component, high performance metal surface treatment. It provides a combination of benefits including: 100% rust converter, rust inhibitor, surface cleaning, and conditioning compound for steel and aluminum surfaces. EMC does not cover up rust, but rather chemically converts 100% rust (including mill scale and micro-rust) into a high performance, corrosion resistant, conductive metallurgical protective film.

BASIC USES
EMC was especially developed for augmenting standard metal surface preparation procedures to provide maximum performance of subsequent high performance topcoats. EMC will improve the adhesion and undercutting corrosion resistance of ELASTUFF or other UNITED approved topcoats when applied over steel substrates. For new metal surfaces, EMC, in a single step, will clean residual oil, dust, and light surface rust while conditioning the surface against further corrosion. Thus, it eliminates the use of any cleaning solvents. EMC also significantly increases the strength of weld seams. Consult UNITED’S Technical Service Department for specific recommendations on abrasion resistant topcoats.

PACKAGING & MIXING
EMC is a single-component, ready-to-use material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails, and 55-gallon (208 liter) drums.

Stir material prior to application. Do not reduce the mixture. Shelf life in unopened containers is 4+ years. Material must be stored at temperatures between 50°F and 100°F (10°C and 38°C). Do not open container until ready to use the material.

TYPICAL PROPERTIES
1. Chemical Name & Family: Ortho-Ester
2. Color: Green
3. Phosphoric Acid Content: <15% by Volume
4. Flash Point: >200°F (93°C)
5. Boiling Point @ 760 mm Hg: 275°F (135°C)
6. Freezing Point: <30°F (-1°C)
7. PH: <1
8. Volatile Organic Content (VOC): <0.01 lbs/gal
9. Shelf Life: >4 Years
10. Salt Spray: 1540 Hours [ASTM B117]
11. Temperature Limits for Application: 32°F to 100°F (0°C to 38°C)

ADVANTAGES
1. Environmentally Safe: EMC is water-based, non-toxic, non-hazardous, non-flammable and water soluble.
2. Versatile: Both steel and aluminum can be treated with EMC.
3. Corrosion Protection: EMC provides long-term rust/oxidation protection when stored in a covered area.
4. Easy Cleanup: EMC cleans up easily using soap and water.
5. Simple Application: Requires only a single coat, applied at 1,800 to 2,000 sq. ft. per gallon (44 to 49 m²/l) using airless spray, over clean metal surfaces.
6. Flexible: EMC will not crack when the metal is bent or after repeated expansion and contraction.
7. Improves Weld Seams: EMC considerably increases the strength of subsequent weld seams, and eliminates weld spatter.
SURFACE PREPARATION

EMC is designed to augment specified metal preparation procedures. Metal surfaces must be chemically cleaned and/or blast abraded according to the specific project requirements. Clean, blast-abraded steel shall be wire brushed to remove any loose rust on the surface. Old rusted steel surfaces shall be chemically cleaned to remove excess oil. Remove any soil, scale, loose rust and/or existing paints or coatings by scraping, grinding, sanding, wire brushing, brush blasting or other mechanical means. Wipe or blow down the surface to remove any dust, residue or other contamination prior to applying EMC. No washing is required; therefore, no moisture is trapped in the metal. The surface is prepared with zero (0) rust/oxidation, preventing further rust in dry storage conditions.

If surfaces are highly contaminated or if surfaces are to be subjected to unusual service and job conditions, consult UNITED’S Technical Service Department for recommendations.

APPLICATION

EMC can be applied to new, rusted or blast-abraded hot-rolled metal surfaces. It can also be applied to damp as well as very hot or very cold metal surfaces (at temperatures between 0°F and 500°F/-18°C and 260°C) under any humidity conditions. In a single application, EMC removes light oil, dust and light rust from the metal surface, and chemically converts 100% of rust/micro-rust including mill scale, providing long-term rust/corrosion protection. Cover floor with paper or plastic prior to use. Wear rubber gloves and eyeglasses to avoid contact with eyes (including contact lenses) or skin. Use proper ventilation.

Apply EMC using a pump-up garden type hand sprayer, such as a Hudson Sprayer, equipped with a fan tip. Keep sufficient pressure in the canister to provide a 40° to 50° fan pattern. Pump-up sprayer must be equipped with plastic parts. Do not use any type of spray equipment that has metal parts, as EMC will cause corrosion and failure of these components. A single coat applied at 1,800 to 2,000 sq. ft. per gallon (44 to 49 m²/l) is usually sufficient. Apply only enough EMC to thoroughly wet the surface of the metal without creating runs or drips. Allow the solution to react with the metal surface for 1 to 2 minutes. After 1 to 2 minutes, use dry compressed air to blow any excess EMC solution off of the surface, and to facilitate drying of the substrate.

APPLICATION (Continued)

Continue blowing off the steel to remove any excess material from the surface until it is visibly dry. Do not allow EMC to sit on the surface for more than 2 minutes, as it will start to surface skin. This can cause extended dry times and an excess of accumulation on the surface. Do not topcoat until the substrate is completely dry, which is distinguishable once any tackiness has disappeared. Dry time will vary with ambient conditions, however, 15 to 30 minutes is normally sufficient. As soon as the surface is dry to touch it can be topcoated with any of UNITED’S Elastuff polyurethane or polyurea coatings systems.

Clean spray equipment with warm, soapy daily. It is not recommended to leave EMC in the pump for extended periods of time.

WELDING: Welding can be performed directly over the coated surface, and will not burn off at high temperatures. The unique high temperature fusion characteristic of the EMC and contamination-free surface, results in a considerable increase in weld strength (approximately 50%). Welding can also be done over mill scale after applying EMC. This process does not produce weld spatters.

OTHER PRIMERS: Surfaces treated with EMC can be primed with Elastuff Holding Primer, or other approved primers, to provide additional corrosion resistance properties under exterior exposure. The EMC must be completely dry prior to application of any primer.

LIMITATION & PRECAUTIONS

Store EMC in a cool, dry place. Clean any spills using water.

Avoid breathing of vapor or spray mist. Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and contact with skin. If exposed to skin, thoroughly wash affected area with soap and water. In case of contact with eyes, flush with plenty of water and seek medical attention immediately. If swallowed, do not induce vomiting. Drink plenty of water and seek medical attention immediately.

For additional information on safety requirements, refer to OSHA guidelines and Material Safety Data Sheet. Use only in a well ventilated area.
LOCK-DOWN
RUST INHIBITIVE METAL PRIMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION

LOCK-DOWN is a single component, moisture cured, low viscosity polyurethane primer containing aluminum pigment. This provides excellent resistance to ultraviolet exposure and exterior weathering. LOCK-DOWN cures by reacting with moisture in the air to form a high molecular weight polymer, resulting in a tough, chemical and abrasion resistant finish.

LOCK-DOWN is manufactured with a low viscosity resin designed to maximize “wetting” of the surface. This allows for rapid, thorough penetration of porous substrates and enhances adhesion to clean or sound rusted metal surfaces. LOCK-DOWN exhibits superior resistance to rust and corrosion caused by chemicals, solvents, saltwater and humidity.

BASIC USES

LOCK-DOWN is designed to provide maximum corrosion protection, rust inhibition and adhesion over steel, aluminum and galvanized metal surfaces. It is an excellent choice for use over sound rust on metal surfaces when sandblasting is not possible or practical. LOCK-DOWN exhibits the unique ability to “wet” into weathered substrates, developing superior adhesion while resisting corrosive conditions, even when sound surface rust is present. Loose, flaking or unsound rusted metal must be brought into sound condition or replaced.

LOCK-DOWN is an excellent primer for use under acrylic or solvent-based roof coatings and industrial finishes. UNITED’S Roof Mate, Diathon, Acryclad, Acrylex 100 and Elastuff Systems all develop outstanding adhesion to LOCK-DOWN. Refer to UNITED’S chart entitled Primer Recommendations for ease in making a determination as to which primer to use under a specific set of conditions.

TYPICAL PROPERTIES

1. Solids by Weight:
   60% (±2) [ASTM D2369]
2. Solids by Volume:
   55% (±2) [ASTM D2697]
3. Weight per Gallon:
   8.9 lbs (4.1 kg) (±.3) [ASTM D1475]
4. Flash Point:
   80°F (26°C) [ASTM D3278]
5. Volatile Organic Content (VOC)
   Less than 420 grams/liter [calculated]
6. Dry Time to Touch:
   1 hour @ 75°F (24°C), 50% R.H. [ASTM D1640]
7. Cure Time:
   12 hours @ 75°F (24°C), 50% R.H. [ASTM D1640]
8. Flexibility:
   Passes 1/8” (3 mm) mandrel flex @ 0°F (-18°C)
9. Temperature Limits for Service Conditions:
   -30°F to 200°F (-34°C to 93°C)

ADVANTAGES

ADHESION: LOCK-DOWN’S low viscosity allows it to penetrate and “wet” into weathered or sound rusted surfaces, imparting a tenacious chemical and physical bond between the substrate and subsequent topcoat.

WEATHERING: Rusted metal panels were wire-brushed, coated with LOCK-DOWN and “X” scribed to expose the metal. After 2,000 hours of accelerated weathering exposure, the coated panels showed no rust bleed, creeping or undercutting, or any deterioration of the LOCK-DOWN along the scribe lines.

SALT SPRAY RESISTANCE: Rusted metal panels were wire-brushed, coated with LOCK-DOWN and “X” scribed to expose the metal. After 500 hours exposure to salt spray, the sample showed only minimal blistering and slight rusting along the scribe lines.
**PACKAGING & MIXING**

**LOCK-DOWN** is a single-component material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Stir the material thoroughly prior to application, as well as periodically during use to keep the aluminum pigment in suspension. Thinning is not necessary. Shelf life in unopened containers is 1 year from date of manufacture. Store at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.

**SURFACE PREPARATION**

All surfaces must be clean and dry. Steel and fabrication defects, such as weld imperfections, slivers, etc., should be corrected prior to starting abrasive blasting operations.

All previous paints, coatings or finishes on the substrate must be completely removed unless they are sound and tightly adhered. When using **LOCK-DOWN** as a spot primer, check compatibility with the existing finish to ensure against lifting.

Steel surfaces may require blast cleaning depending upon the conditions to which the topcoat will be subjected on a given project. Contact UNITED’S Technical Service Department for specific project recommendations. Wet or water vapor blasting is not recommended.

All oil, grease, weld flux and other surface contaminants shall be removed prior to blast cleaning by use of a solvent wash as defined in SSPC-SP1 Solvent Cleaning.

Abrasive blast cleaning shall not be performed when surface temperature of the steel is less than 5°F (3°C) above the dew point of the ambient air, when relative humidity exceeds 80%, or when there is a possibility that the blasted surface will become wet before the primer can be applied.

The blast cleaned surface shall be primed by the end of the same work day, or in any event before any visible rusting occurs. If rusting occurs after blast cleaning, the surfaces shall be reblasted before priming. If the steel surface is subjected to chemical contamination, priming of the blast cleaned surface must take place as soon as possible.

For application over metal surfaces that cannot be sandblasted, or over existing surfaces that are to be spot primed, a test area should be applied to ensure proper adhesion. All loose rust or rust scale shall be removed by mechanical means prior to application of **LOCK-DOWN**. Metal surfaces that are damaged or rusted to the point of being unsound must be replaced.

**APPLICATION**

**LOCK-DOWN** may be applied by brush, roller, conventional or airless spray. Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6,890 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used. A reversible, self cleaning spray tip with orifice size of .015” to .021” (.39 to .53 mm) and minimum 40° fan angle is recommended. Before spraying, flush Xylol solvent through the pump, hoses and spray gun to prevent contamination.

One coat of **LOCK-DOWN** is sufficient for priming most metal surfaces. Coverage rate will depend upon the surface profile of the metal substrate and jobsite conditions at the time of application. Typical application rate is 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l) to achieve a minimum dry film thickness of 3 mils.

**LOCK-DOWN** should be topcoated within 24 hours of application, or less in high humidity areas. If topcoating cannot be accomplished within 24 hours, contact UNITED’S Technical Service Department for recommendations.

**LOCK-DOWN** can be used on its own if an aluminized finish is all that is required. If this is the case, apply a second coat of **LOCK-DOWN**, perpendicular to the first coat, at the same coverage rate stated above.

Use Xylol to thoroughly flush equipment.

**LIMITATIONS & PRECAUTIONS**

**LOCK-DOWN** is affected by moisture and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening and if all components are not to be used, containers must be purged with nitrogen gas or dry air and tightly sealed.

Solvents are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flame and lighted cigarettes. Use explosion-proof application equipment, which has been grounded and bonded.

Avoid prolonged or repeated breathing of vapor or spray mist. Approved (MSHA/NIOSH) chemical cartridge respirators should be worn by applicator. Avoid contact with eyes and contact with skin.

For additional information on safety requirements, refer to OSHA guidelines and **LOCK-DOWN** Material Safety Data Sheet.
Technical Data & Application Instructions

PRODUCT DESCRIPTION

PRIMER 302 is a two-component, high performance corrosion resistant primer. It combines corrosion inhibiting pigments with a crosslinking polymer resin to form a highly stable polymer-pigment matrix. PRIMER 302 creates a physical and chemical bond between the substrate and polyurethane/polyurea elastomers. This superior bond strength is achieved by chemically crosslinking the polymer in the primer to the polyurethane/polyurea elastomer topcoat.

PRIMER 302 is manufactured in Light Gray color only.

BASIC USES

PRIMER 302 was specifically developed to provide maximum adhesion of UNITED’S Elastuff Polyurethane and Polyurea Coatings to steel, stainless steel and aluminum (mill finish).

PRIMER 302 can also be used beneath a UNITED approved topcoat under constant immersion conditions. UNITED requires that test immersion panels be installed in the actual immersion solution for a minimum of 30 days, and then the results be evaluated prior to recommending any specific primer/coating system.

Refer to UNITED’S chart entitled Primer Recommendations for ease in making a determination of which primer should be used for a particular coating system.

SHELF LIFE

Shelf life of Part A and Part B components in unopened containers is one (1) year. Store at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.

PHYSICAL PROPERTIES

1. Mixing Ratio:
   4 parts A to 1 Part B by volume (4A:1B)
2. Mixed Usable Pot Life:
   24 hours at 75°F (24°C), 50% R.H.
3. Solids by Weight (Mixed):
   51% (+2) [ASTM D2369]
4. Solids by Volume (Mixed):
   34% (+2) [ASTM D2697]
5. Flash Point:
   Part A: 40°F (4°C)
   Part B: 80°F (27°C)
   [Seta-Flash closed cup]
6. Temperature Limits for Service Conditions:
   -70°F to 200°F (-56°C to 93°C)
7. Dry Time:
   30 minutes at 75°F (24°C), 50% R.H.

PACKAGING & MIXING

PRIMER 302 is a two-component material available in quart cans (0.95 liters) for Part B only, 1-gallon cans (3.8 liters) for Part A and Part B, and 5-gallon pails (19 liters) for Part A only. For Part A only, the 5-gallon pails contain 4 gallons (15.2 liters) to enable easier mixing with the Part B component in the same container. Special packaging is available.

MIX 4 VOLUMES OF PART A WITH 1 VOLUME OF PART B. THINNING OR REDUCING THE MIXTURE IS NOT NORMALLY RECOMMENDED. If thinning is desired, used Methyl Ethyl Ketone (MEK) only. Material shall be thoroughly mixed prior to application. Use an air-operated or other explosion-proof mixer, which has been grounded and bonded, with a blade capable of uniformly mixing the entire container.

Allow mixture to set a minimum of twenty (20) minutes for sweat-in before using. Mixed usable pot life of the mixture is 24 hours at 75°F (24°C), 50% R.H. At higher temperatures, usable pot life is shortened.
**PERFORMANCE & ADVANTAGES**

1. **Resistance to Condensation:**
   Test panels were placed in the QCT Condensation Cabinet and maintained at a temperature of 120°F (49°C) and 100% relative humidity. PRIMER 302 had no loss of adhesion, no blistering or softening, and no corrosion was observed beneath the film. Visual observations were made within 30 minutes after test panels were removed from the test chamber and again after 24 hours following the test. Tested in accordance with ASTM D2247

2. **Adhesion:**
   Test panels primed with PRIMER 302 were cross-cut, forming a grid area of 100 squares. Tape was then firmly placed across the center of the grid. After the tape was removed, the grid area was inspected for adhesion of the primer to the substrate under magnification. The results were 100% adhesion, meeting the requirements for a 5 B Classification as defined in the ASTM Standard. The edges of the cuts were completely smooth and none of the squares of the grid were detached. Tested in accordance with ASTM D3359.

3. **Resistance to Salt Spray:**
   Test panels were placed in the Harshaw Salt Spray Cabinet and maintained at a temperature of 95°F (35°C), utilizing a sodium chloride fog solution of not less than 5% by weight. Test panels were "X" scribed to initiate corrosion before being placed into the test chamber. After **500 hours** of continuous testing, PRIMER 302 had no loss of adhesion, no blistering or softening, and no corrosion was observed beneath the film. Corrosion was observed on "X" cut. Visual observations were made immediately after test panels were removed from the test chamber. Tested in accordance with ASTM B117.

4. **Flexibility:**
   PRIMER 302 retains its ability to withstand multiple 7/16" (1.11 cm) mandrel bends without cracking. Observations were made under 10 times magnification. Tested in accordance with Federal Test Method Standard No. 141a-6221.

5. **Resistance to Impact:**
   Gardner Impact Tester – PRIMER 302 did not shatter, crack or chip when struck by a direct impact of 60 inch pounds. Tested in accordance with Federal Test Method Standard No. 141a-6226.

6. **Bond Strength:**
   PRIMER 302 was applied over steel test panels to a minimum thickness of 1.5 dry mils (38 dry microns). Steel panels were sandblasted to Near-White (SP10) prior to being primed. UNITED’S Elastuff 504 was then applied over the primed test panels to a minimum thickness of 38 dry mils (965 dry microns). After test panels were allowed to fully cure, the bond (peel) strength was tested using the Instron Universal Testing Instrument. Elastuff 504 reached its maximum elongation point and pulled parts of PRIMER 302 from the steel panels. The bond between the primer and the substrate proved to be outstanding. The peel strength of PRIMER 302 exceeded 75 lbs. per lineal inch (13.13 kN/m). Tested in accordance with ASTM D903.

7. **Cathodic Disbondment:**
   Successful coatings for steel pipe subjected to negative voltage for corrosive resistance must pass rigid cathodic disbondment criteria as outlined in ASTM Standard G8. PRIMER 302 surpasses the most critical requirements and effectively bonds polyurethane and polyurea elastomers to steel pipe subjected to varying degrees of negative voltage.

8. **Low & High Temperature Applications:**
   PRIMER 302 may be applied at temperatures as low as 32°F (0°C) and at surface temperatures as high as 120°F (49°C). For applications below 32°F (0°C), consult UNITED’S Technical Service Department.

9. **Fast Cure Time:**
   PRIMER 302 dries in under 30 minutes at 75°F (24°C), 50% R.H. This allows topcoating on the same day, thus maximizing work efficiency. Cure time can be adjusted for special requirements in relationship to time and temperature.

*Note: These tests were conducted using cold rolled steel panels. Steel panels were sandblasted to Near-White (SSPC-SP10) and then primed. PRIMER 302 was spray-applied in one coat to a minimum thickness of 1.5 dry mils (38 dry microns). Test panels were than allowed to cure at 75°F (24°C), 50% R.H. for 6 days and then oven dried at 125°F (52°C) for 1 day before testing.

**Note:** This test was conducted using stainless steel panels. Stainless steel was acid cleaned using 10% muriatic acid and then primed. PRIMER 302 was spray-applied and cured in the same manner as listed above.
PREPARATION OF SURFACES

Steel and fabrication defects, such as weld imperfections, delaminations, slivers, etc., should be corrected prior to starting abrasive blasting operations.

All previous paints or coatings on the substrate must be completely removed, including paints or coatings that are tightly adhered to the surface.

All burrs, jagged edges, undercuts, recesses and surface defects shall be ground smooth. Porous welds shall be ground down to pinhole free metal.

Steel surfaces must be blast cleaned to either Near-White (SP10) or White Metal (SP5) depending upon the conditions under which the topcoat will be subjected on a specific project. Wet or water vapor sandblasting is not recommended.

The following cleaning procedures are provided for guideline use only. Occasions will arise where the specified method of blast cleaning will not result in achievement of the type of cleaning required. It is suggested that UNITED’S Technical Service Department be contacted for recommendations on each specific application.

Cleaning procedures as hereinafter specified shall be in strict conformance with the following applicable Steel Structures Painting Council (SSPC) – Surface Preparation Specifications:

| SSPC –SP1 | Solvent Cleaning |
| SSPC – SP5 | White Metal Blast Cleaning |
| SSPC – SP10 | Near-White Blast Cleaning |

All oil, grease, weld flux, and other surface contaminants shall be removed prior to blast cleaning by use of a solvent wash as defined in SSPC – SP1 Solvent Cleaning.

Excessive rust-scale shall be removed by mechanical means prior to blast cleaning.

Abrasive blast cleaning shall not be performed when surface temperature of the steel is less than 5°F (3°C) above the dew point of the ambient air, when relative humidity exceeds 80%, or when there is a possibility that the blasted surface will become wet before the primer can be applied.

The blast cleaned surface shall be primed by the end of the same work day, but in any event before any visible rusting occurs. If rusting occurs after blast cleaning, the surface shall be reblasted before priming. If the steel surface is subjected to chemical contamination, priming of the blast cleaned surface must take place as soon as possible.

For inspection purposes, the visual standards contained in the Pictorial Surface Preparation Standards For Painting Steel Surfaces, SSPC-VIS 1-67T shall be used as a guide in determining the minimum degree of surface preparation.

STEEL SUBJECT TO DRY ABRASION

1. Lightweight Abrasive Materials:
   Blast Cleaning – Surfaces shall be blast cleaned to a Near-White Blast Cleaned Surface Finish (SP10) with a minimum surface profile of 2 mils (51 microns).
   Primer – Surfaces shall be primed with PRIMER 302 to a minimum thickness of .80 and a maximum of 1.2 dry mils (20 to 30 dry microns).

2. Lightweight to Medium Abrasive Materials:
   Blast Cleaning – Surfaces shall be blast cleaned to a Near-White Blast Cleaned Surface Finish (SP10) with a minimum surface profile of 2+ mils (51+ microns).
   Primer – Surfaces shall be primed with PRIMER 302 to a minimum thickness of .80 and a maximum of 1.2 dry mils (20 to 30 dry microns).

3. Heavy Abrasive (Larger than 1"):
   Blast Cleaning – Surfaces shall be blast cleaned to a White Blast Cleaned Surface Finish (SP5) with a minimum surface profile of 3+ mils (76+ microns).
   Primer – Surfaces shall be primed with PRIMER 302 to a minimum thickness of 1.5 and a maximum of 2.0 dry mils (38 to 50 dry microns).

STEEL SUBJECT TO LIQUID SLURRY:

1. Plain Water and Mineral Solids:
   Blast Cleaning and Priming requirements as specified above for Lightweight Abrasive Materials.

2. Light Slurry with Lightweight to Medium Particles:
   Blast Cleaning and Priming requirements as specified above for Lightweight to Medium Abrasive Materials.

3. Heavy Slurry:
   Blast Cleaning and Priming requirements as specified above for Heavy Abrasive (Larger than 1").

Prior to the application of PRIMER 302, all loose dust and blast particles shall be removed from the surface by use of a power vacuum. Dry air blow off and brush cleaning are not recommended.

Note: The above surface preparations as defined by the National Association of Corrosion Engineers are comparable to SSPC Surface Preparation Specifications: NACE No. 1 (SSPC-SP5); NACE No. 2 (SSPC-SP10) and NACE Standard TM-01-70 (SSPC-VIS1-67T).
**APPLICATION**

**PRIMER 302** may be applied by conventional or airless spray. Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6,890 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used. A reversible self-cleaning spray tip with orifice size of .013" to .019" (.33 to .48 mm) and minimum 40 degree fan angle is recommended.

Coverage rate will depend upon the surface profile. For surfaces that have been abraded to a 2 mil (51 micron) profile, **PRIMER 302** should be applied at a minimum rate of 1 gallon per 250 to 300 sq. ft. (6.1 to 7.3 m²/l) of surface area. This coverage rate should result in 1 to 1.5 dry mils (25 to 38 dry microns). Surface profile and application conditions will affect coverage rate.

Consult UNITED’S Technical Service Department for minimum dry mil thickness recommendations when steel surfaces are abraded to a surface profile greater or less than 2 mils (51 microns).

Spray gun should be held not more than 24" (61 cm) from, and at a perpendicular angle to, the surface being primed. As **PRIMER 302** is an ultra-fast drying primer, it will begin to dry or “powder” if the spray gun is held too far away from, or at a severe angle to, the surface. Primer that is powdered onto a substrate does not wet into the surface adequately to achieve proper adhesion. If powdering is exhibited on a particular **PRIMER 302** application, it can be eliminated by adjusting spray technique and/or thinning with up to equal parts of M.E.K.

When **PRIMER 302** is applied over stainless steel or aluminum, apply primer to a small test area to ensure proper adhesion. Due to the various types of stainless steel and aluminum, preparation of these surfaces to receive **PRIMER 302** may require a different procedure from that stated above. For any primer to function as it was designed, proper surface preparation is essential in attaining optimum adhesion.

**PRIMER 302** should be topcoated on the same day. If topcoating cannot be achieve within 48 hours, consult UNITED’S Technical Service Department for recommendations.

**CLEAN UP**

Clean equipment with Methyl Ethyl Ketone (MEK).

**LIMITATIONS & PRECAUTIONS**

**PRIMER 302** Part B component is affected by moisture prior to catalyzation and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening and if all components are not to be used, containers must be purged with nitrogen gas or dry air and tightly sealed.

Solvents are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flame and lighted cigarettes. Use explosion-proof application equipment that has been grounded and bonded.

Avoid prolonged or repeated breathing of vapor or spray mist. Approved (MSHA/NIOSH) chemical cartridge respirators must be worn by applicator. Avoid contact with eyes and contact with skin.

For additional information on safety requirements, refer to OSHA guidelines and **PRIMER 302** Material Safety Data Sheet.

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**Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.**
PRIMER 708
EXTERIOR ADVANCED ACRYLIC PRIMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION

PRIMER 708 is a resinous, single component, exterior acrylic latex primer that is blister resistant, permanently flexible and highly durable. It exhibits excellent alkali resistance for use over concrete and masonry substrates. Because of its penetration ability, PRIMER 708 is able to “wet” into caulk, or previously painted surfaces. It can be topcoated with a wide variety of finish coats. PRIMER 708 is fast drying, remains permanently flexible and exhibits excellent weatherability characteristics.

PRIMER 708 is a water-based product, and conforms to all local, state and federal environmental and VOC requirements. It is also highly alkali resistant, meeting the requirements of ASTM C315.

BASIC USES

PRIMER 708 can be used to increase the bond over new or unpainted wood substrates. It is also effective at locking down residual chalkiness on previously painted exterior surfaces. Over concrete and masonry substrates, the alkali resistance of PRIMER 708 make it an ideal choice for use under UNITED’S Acryclad and Aquathon Systems.

PACKAGING & MIXING

PRIMER 708 is a single component, ready to use material available in 1-gallon (3.8 liter) cans and 5-gallon (19 liter) pails.

Mix the material thoroughly prior to use until an even consistency is achieved. Use a power mixer or other mechanical method that is capable of mixing the contents of the entire container. Reducing the material is not normally required, however a small amount of water can be added if necessary.

PROPERTY DATA

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<thead>
<tr>
<th>Property</th>
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<tr>
<td>Solids by Weight</td>
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<td>ASTM D2369</td>
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<tr>
<td>Solids by Volume</td>
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<td>Viscosity</td>
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<td>ASTM D2196</td>
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<td>Weight per Gallon</td>
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<td>Dry Time to Touch</td>
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<td>Cure Time for Recoating</td>
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</tbody>
</table>

ADVANTAGES

• APPLICATION VERSATILITY: PRIMER 708 exhibits excellent adhesion over a wide variety of properly prepared surfaces including new and weathered wood, previously painted surfaces, concrete, masonry, brick and exterior wallboard.

• HIGH RESIN CONTENT: PRIMER 708 contains a high ratio of resin to filler pigments, providing excellent cold temperature performance. This also allows it to wet into bare substrates as well as existing finishes, providing maximum adhesion.

• EXCELLENT FLEXIBILITY: The acrylic resins utilized in PRIMER 708 allow for maximum penetration and flexibility characteristics. It will not become brittle with age.

• VOC COMPLIANT: PRIMER 708 is a water-based product and conforms to all local, state and federal environmental regulations and VOC requirements. Cleanup is easily accomplished using soap and water.

COLORS

PRIMER 708 is available in standard Off-White. It can also be tinted to a wide range of custom colors to meet specific jobsite requirements. Color chips or samples must be furnished to UNITED for all custom colors.

UNITED COATINGS
ONE, QUALITY BY DESIGN
a Subsidiary of Quest Specialty Chemicals™
**SURFACE PREPARATION**

All surfaces must be clean and dry, and free from dirt, grease, oils, soapy films, pollution fallout, surface chemicals, rust, scale and other foreign contaminants that may interfere with optimum adhesion.

All loosely adhering paint or coating shall be completely removed by scraping, pressure washing, blasting or other mechanical means. Any existing paint or coating, if not completely removed, shall be checked to verify that it is tightly adhered to the substrate. Prior to coating over any existing paint or coating, a test area must first be applied to verify compatibility and adhesion.

Glossy surfaces must by dulled by abrading the surface using brush blasting, sanding or other mechanical means. Chalky, oxidized or other contaminated surfaces must be washed with United Cleaning Concentrate (UCC) or equivalent biodegradable cleaner.

**WOOD SURFACES:** Wood shall be free from dust, ridges and projections. All pits, gouges, knotholes and other depressions shall be filled and leveled using exterior grade wood putty. Degraded, deteriorated or unsound surfaces shall be repaired or replaced. If tannin or stain-blocking qualities are required over wood substrates, Acrylex 400 Primer should be utilized.

**CONCRETE SURFACES:** Concrete surfaces must be free from curing agents, form release agents, surfactants, sharp projections, ridges and loose aggregate. New concrete shall be water-cured in lieu of using a curing compound. Restore any loose aggregate to a reasonable condition using Uni-Crete, Wall-Bond or similar cementitious patching or resurfacing compound.

Sandblasting of concrete will be necessary if the surfaces are contaminated to the point that acid, chemical cleaning or power washing is not sufficient for removal. Concrete surfaces having a smooth, steel trowelled finish should be acid etched or sandblasted. PRIMER 708 provides excellent alkali resistance over concrete and masonry substrates.

**OTHER SURFACES:** PRIMER 708 adheres directly to most clean fiberglass and plastic surfaces. New or dense surfaces should be scuff-sanded prior to priming.

PRIMER 708 can be topcoated as soon as it has thoroughly dried, and should normally be topcoated within 48 hours of application. Surfaces that have become contaminated must be recleaned prior to topcoating.

**APPLICATION**

PRIMER 708 may be applied by brush, conventional or airless spray. Any airless spray capable of 1,000 psi (6,980 kPa) and ½ gallon per minute (1.9 l/minute) can be used. A reversible, self-cleaning spray tip with an orifice size of .015” to .021” (.38 to .53 mm) and minimum 40 degree fan angle is recommended. Before spraying, flush equipment with clean water.

Coverage rate will vary depending upon the substrate, its surface profile and porosity. One coat is usually sufficient for priming most surfaces. The following chart should be used as a guideline only for determining approximate application rates:

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Coverage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>250-300 ft²/gal (6.1-7.3 m²/l)</td>
</tr>
<tr>
<td>Smooth Concrete</td>
<td>250 ft²/gal (6.1 m²/l)</td>
</tr>
<tr>
<td>Standard Concrete Block</td>
<td>200 ft²/gal (4.9 m²/l)</td>
</tr>
<tr>
<td>Lightweight or Textured Block</td>
<td>150 ft²/gal (3.7 m²/l)</td>
</tr>
</tbody>
</table>

When using PRIMER 708 as a spot primer over previously coated surfaces, abrade the existing material to a feather edge so that the topcoat makes a smooth transition over the primed areas. Apply using multi-directional spray passes to assure positive coverage. On porous or textured surfaces requiring more than one coat, subsequent coats should be applied in a direction perpendicular to the previous coat after it has dried.

When used as a shop primer, the surfaces should be thoroughly washed with UCC or equal, and spot primed as necessary prior to topcoating.

Use water and UCC to thoroughly flush the equipment. Purge the water from the system using a mild solvent. Leave the solvent in the lines until next use.

**LIMITATIONS & PRECAUTIONS**

PRIMER 708 will freeze and become unusable below 32°F (0°C). Do not ship or store unless protection from freezing is available.

Do not apply if conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply PRIMER 708 at temperatures below 50°F (10°C), or when there is a possibility of temperatures falling below 32°F (0°C) within a two hour period after application.

PRIMER 708 may be an irritant to skin. Avoid breathing of vapor or spray mist. Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and skin. For additional information, refer to OSHA guidelines and PRIMER 708 Material Safety Data Sheet.
UNISEAL
PENETRATING WATER-BASED EPOXY PRIMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION

UNISEAL is a clear, single-component epoxy primer/sealer. It incorporates state of the art water-based technology to produce an extremely versatile product that penetrates and seals porous substrates. It is effective at increasing the bond of acrylic, polyurethane, butyl and epoxy topcoats to a variety of surfaces. It will also help to "solidify" punky or chalky surfaces. UNISEAL is safe to use, has very little odor, and is easy to clean up.

BASIC USES

UNISEAL is designed to penetrate and seal porous substrates and to improve the adhesion of high performance topcoats. It develops a tenacious bond to concrete, wood, fiberglass, steel, galvanized and aluminum surfaces. Although UNISEAL will greatly enhance the adhesion of various topcoats over metal surfaces, it is not designed to add to the corrosion resistance of the system, beyond what the topcoat provides. UNISEAL Black is also effective at increasing the bond of polyurethane foam to a wide variety of substrates.

UNISEAL will effectively solidify punky or chalky concrete or masonry surfaces when used as a primer prior to topcoating. It is also designed to be used on its own as a transparent sealer over interior concrete floors to provide dustproofing and enhanced cleanability characteristics. UNISEAL will amber slightly when used on exterior surfaces without a topcoat.

COLOR

UNISEAL is manufactured in standard Clear. Black is also available when UNISEAL is applied beneath polyurethane foam. The black surface will absorb the sun's radiant heat, enhancing the ability of the polyurethane foam to achieve its maximum yield.

TYPICAL PROPERTIES

1. Solids By Weight: 10.6% (±1) [ASTM D2369]
2. Solids By Volume: 10.4% (±1) [ASTM D2697]
3. Weight Per Gallon: 8.4 lbs. (3.8 kg) (±0.2) [ASTM D1475]
4. Dry Time To Touch: 30 minutes @ 75°F (24°C) [ASTM D1640]
5. Cure Time: 8+ hours @ 75°F (24°C). Cure and recoating time will vary from 2 to 48 hours depending upon ambient conditions and the type of topcoat being applied.
   *High humidity and/or low temperature will retard cure and recoat times.
6. Volatile Organic Content (VOC): 90 grams/liter
7. Low & High Temperature Limits: -30°F to 150°F (-34°C to 66°C)

ADVANTAGES

1. ADHESION: UNISEAL penetrates and "wets" into porous surfaces, imparting a tenacious chemical and physical bond between the substrate and subsequent topcoat. It is also effective over damp concrete or wood surfaces.
2. NON DUSTING: UNISEAL penetrates deeply to eliminate concrete dusting, providing for easy cleanup and minimum maintenance.
3. DEEP PENETRATION: Its low viscosity allows UNISEAL to penetrate into and preserve dense surfaces such as smooth-troweled concrete floors, oriented strandboard, fiberglass and various types of metal surfaces.
4. ANTI-SPALLING: Applied to concrete decks, walkways, industrial areas, etc., UNISEAL will effectively protect against the intrusion of destructive salts, oils, solvents and gasoline. It also prevents spalling and pitting caused by freeze/thaw cycling.
PACKAGING & MIXING

UNISEAL is a single-component material available in 1-gallon (3.8 liter) cans, 5-gallon (19 liter) pails and 55-gallon (208 liter) drums.

Stir material prior to application. UNISEAL may be reduced with water for increased penetration over dense substrates. Shelf life in unopened containers is one year from date of manufacture. Store at temperatures between 50°F and 100°F (10°C and 38°C). Do not open containers until ready to use the material.

SURFACE PREPARATION

All surfaces must be clean and free of any dirt, oil, grease, soapy films, surface chemicals or other foreign contaminants. Slightly damp surfaces will not affect the performance of UNISEAL, provided there is no standing water or frost. New concrete should be water-cured in lieu of using a curing compound. Any form of curing compound or release agent on any surface to be sealed with UNISEAL must be completely removed, along with any laitance.

Prior to applying UNISEAL, all loose material, dirt and dust must be removed by use of a power vacuum, stiff-bristled broom or compressed air. If concrete is badly spalled, restore surface to a reasonable condition using UNITED’S Uni-Crete or other cementitious patching or resurfacing compound. Fiberglass surfaces should be scuff-sanded prior to priming. Metal surfaces must be free of oily residue and loose rust. Previously painted surfaces should be brush blasted or mechanically abraded to remove the existing finish.

New concrete that has been previously cured with a curing compound, or concrete that has been smooth trowelled, shall be cleaned and etched with 10% Muratic Acid solution. Wash with United Cleaning Concentrate (UCC), and follow with a rinse of clean water.

Existing concrete must be cleaned using United Cleaning Concentrate or similar biodegradable chemical cleaner and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the chemical cleaner. If general cleaning is not adequate, then surfaces should be cleaned and etched as recommended for new concrete.

If surfaces are highly contaminated, or if surfaces are to be subjected to unusual service conditions, consult UNITED’S Technical Service Department for recommendations.

APPLICATION

UNISEAL may be applied by brush, roller or spray. Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6,980 kpa) and ½ gallon per minute (1.9 l/minute) delivery can be used. A reversible, self-cleaning spray tip with an orifice size of .015” to .027” (.4 mm to .7 mm) and minimum 40 degree fan angle is recommended. Before spraying, flush equipment with clean water to prevent contamination.

Coverage rate will vary depending upon surface porosity. One coat is usually sufficient for sealing substrates when UNISEAL is used as a primer. When used as a sealer/finish, two coats are required to achieve a uniform sheen. Two coats may also be required when sealing lightweight concrete or other highly porous surfaces. The following are approximate application rates:

Concrete: 250 to 300 sq. ft./gallon (6.1-7.3 m²/l)
Lightweight Concrete: 100 to 150 sq.ft./gal (2.4-3.7 m²/l)
Wood: 300 sq. ft./gallon (7.3 m²/l)
Fiberglass: 300 to 400 sq. ft./gal (7.3-9.8 m²/l)
Metal: 300 to 400 sq. ft./gallon (7.3 - 9.8 m²/l)

Thin as necessary with water to achieve adequate penetration of the surface being sealed. When used as a sealer/finish apply a second coat of UNISEAL at approximately 50% greater coverage rate than those listed above. When used as a primer on exterior applications, UNISEAL should be topcoated within 48 hours to ensure optimum bonding characteristics. Do not permit UNISEAL to puddle or “glaze” over on top of the substrate. Allow to dry thoroughly prior to topcoating. On interior applications, the dry time is dependant on the ability of the water to evaporate from the film. Use fans to generate maximum air movement. Covered tanks and vessels may require a dehumidification unit to accelerate the dry time.

Use water and United Cleaning Concentrate or equal to thoroughly flush equipment. Purge the water from the system using solvent. Leave solvent in the lines and equipment until next use.

LIMITATIONS & PRECAUTIONS

UNISEAL is a thin penetrating sealer. It is not designed for use as a high-build surface coating. Do not use over metal under immersion conditions.

UNISEAL will freeze and become unusable below 32°F (0°C). Do not ship or store unless protection from freezing is available. Do not apply if conditions will not permit complete cure before rain, dew or freezing temperatures occur. Do not apply in the late afternoon if moisture condensation can appear during the night. Do not apply UNISEAL at temperatures below 50°F (10°C).

UNISEAL may be an irritant to skin. Avoid breathing of vapor or spray mist. Approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator. Avoid contact with eyes and skin.

For additional information, refer to OSHA guidelines and UNISEAL Material Safety Data Sheet.

Our products are guaranteed to meet established quality control standards. Information contained in our technical data is based on laboratory and field testing, but is subject to change without prior notice. No guarantees of accuracy are given or implied, nor does UNITED assume any responsibility for coverage, performance or injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement or, if applicable, to the terms stated within the executed project warranty.
UNI-TILE SEALER LV
PENETRATING EPOXY PRIMER/SEALER

Technical Data & Application Instructions

PRODUCT DESCRIPTION

UNI-TILE SEALER LV is a two-component, epoxy polyamide penetrating primer/sealer. This unique industrial maintenance coating is especially formulated to penetrate, prime, and seal porous surfaces.

BASIC USES

UNI-TILE SEALER LV is used to seal porous substrates and to improve adhesion when applying epoxy and polyurethane topcoats. It is also manufactured in a black dye version for use in sealing wood and concrete substrates before application of polyurethane foam.

UNI-TILE SEALER LV is a superior concrete floor finish for use in food and meat processing plants, animal holding facilities, and industrial or warehouse floors where chemical and abrasion resistance, as well as cleanability, are required. If used on exterior surfaces without an approved topcoat, UNI-TILE SEALER LV will amber or darken on aging.

TYPICAL PROPERTIES

1. Mixing Ratio: 1 to 1 by volume (1A:1B)
2. Mixed Usable Pot Life: 8 hours @ 75°F (24°C), 50% R.H. 4 hours @ 95°F (35°C), 50% R.H.
3. Solids by Weight (Mixed): 58% (+/-1) [ASTM D 2369]
4. Solids by Volume (Mixed): 53% (+/-1) [ASTM D 2697]
5. Dry Time to Touch: 60 minutes at 75°F (24°C), 50% R.H.
6. Cure Time: 6 hours at 75°F (24°C), 50% R.H.
7. Low & High Temperature Limits: -70°F to 150°F (-56°C to 66°C)
8. Volatile Organic Content (VOC): 380 grams/liter

ADVANTAGES

1. ADHESION: The penetrating action of UNI-TILE SEALER LV imparts a tenacious chemical and physical bond to concrete, brick, wood, fiberglass, plaster or drywall. This sealer creates an excellent bond with most topcoats to these substrates.
2. NON-LIFTING: Any of UNITED’S coatings may be applied over cured UNI-TILE SEALER LV without lifting or bubbling this solvent-resistant primer/sealer.
3. DEEP PENETRATION: The thin viscosity of the liquid allows UNI-TILE SEALER LV to penetrate very small crevices and preserve dense, steel troweled concrete, float finish concrete, sandblasted concrete or similar surfaces.
4. ELIMINATES CONCRETE DUSTING: Indepth protection eliminates concrete dusting and affords years of minimum maintenance.
5. ANTI-SPALLING: Applied to concrete decks, walks, industrial areas, etc., UNI-TILE SEALER LV effectively protects concrete from intrusion of destructive salts, oils, solvents and gasoline. It prevents damage from freezing and spalling, preserving concrete in a stable condition.

COLORS

UNI-TILE SEALER LV is manufactured in standard clear. Black is available when the sealer is applied to wood and concrete substrates beneath polyurethane foam. The black surface will absorb the sun’s radiant heat, enhancing the ability of the polyurethane foam to achieve its maximum yield.
PACKAGING & MIXING

UNI-TILE SEALER LV is a two-component material available in 1-gallon (3.8 liter) can, 5-gallon (19 liter) pails and 55-gallon (209 liter) drums.

Mix Part A with an equal amount of Part B Catalyst. Stir thoroughly for five (5) minutes. Do not reduce the mixture. After mixing, allow a minimum of thirty (30) minutes for sweat-in before using.

Shelf life of Part A and Part B components in unopened containers is 2 years. Store at temperatures between 50°F and 100°F (10°C to 38°C). Do not open containers until ready to use the material.

SURFACE PREPARATION

All surfaces must be clean and dry, and free of any dirt, oil, grease, soapy films, release or curing agents, surface chemicals or other foreign contaminants. UNITED recommends that new concrete be water-cured in lieu of using a curing compound.

Prior to applying UNI-TILE SEALER LV, all loose material, dirt and dust shall be removed by use of a power vacuum. If concrete is badly spalled, restore loose aggregate to a reasonable condition utilizing UNITED’S Uni-Crete.

New concrete that has been previously cured with a curing compound shall be cleaned prior to acid etching with a proper chemical solvent. Follow directions and safety precautions on label. New concrete shall be cleaned and etched with 10% Muriatic Acid Solution. Dilute in proportion of 1 part acid to 8 to 10 parts clean water. Muriatic Acid Solution shall be sprinkled onto the concrete surface. After the solution has stopped bubbling or foaming (normally 5 to 10 minutes), the area shall then be scrubbed thoroughly by hand or by using mechanical scrubbers. After scrubbing, surfaces shall then be thoroughly rinsed with liberal amounts of fresh water. The surface may require additional rinsing or a high pressure water rinse to remove all traces of the acid solution.

Concrete surfaces that are contaminated with oil, grease, dirt, etc., shall be cleaned using United Cleaning Concentrate (UCC) and water. Cleaning shall be accomplished using mechanical scrubbers. Rinse thoroughly with fresh water to remove all traces of the UCC cleaner.

APPLICATION

UNI-TILE SEALER LV may be applied by brush, roller or spray. Airless spray is the preferred method. Any airless spray equipment capable of 1,000 psi (6,890 kPa) and ½ gallon per minute (1.9 l/minute) delivery can be used. A reversible self-cleaning spray tip with orifice size of .015” to .025” (.38 mm to .64 mm) and minimum 40 degree fan angle is recommended. For maximum production on large projects, airless spray equipment capable of 2,000 psi (13,790 kPa) and 1 gallon per minute (3.8 l/minute) delivery can be used.

Before spraying, flush Xylol or Methyl Ethyl Ketone (MEK) solvent through the hoses and spray gun to prevent contamination.

Coverage rate will vary depending upon surface porosity. One coat is usually sufficient for sealing of concrete and wood surfaces prior to topcoating. Two coats may be required if the substrate is extremely porous or when the UNI-TILE SEALER LV is being used on its own as a floor sealer. Apply UNI-TILE SEALER LV at the following approximate rates:

Concrete: 400 to 500 sq. ft./gallon (9.8 to 12.2 m²/l)
Wood: 500 sq. ft./gallon (12.2 m²/l)
Lightweight Concrete: 200 to 250 sq. ft./gallon (4.9 to 6.1 m²/l)

UNI-TILE SEALER LV should be topcoated, if appropriate, within 24 hours of application. At no time shall any topcoat be applied after 48 hours following application, as it will not achieve a chemical bond with the UNI-TILE SEALER LV.

Clean equipment with Methyl Ethyl Ketone (MEK).

LIMITATIONS & PRECAUTIONS

UNI-TILE SEALER LV is a thin penetrating sealer. Do not use as a high-build surface coating. Substrate temperature must be a minimum of 50°F (10°C).

UNI-TILE SEALER LV has been tested for chemical resistance against many common industrial chemical cleaners and solvents. For floors subjected to acids or unusual chemical spillage, consult UNITED’S Technical Service Department for recommendations.

Solvents in UNI-TILE SEALER LV are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flame, or lighted cigarettes. Use explosion-proof application equipment that has been grounded and bonded. Avoid prolonged or repeated breathing of vapor or spray mist. Approved (MSHA/NIOSH) chemical cartridge respirator should be worn by applicator. Avoid contact with eyes and contact with skin.

For additional information on safety requirements, refer to OSHA guidelines and UNI-TILE SEALER LV Material Safety Data Sheet.
UNITED CLEANING CONCENTRATE (UCC)  
ROOF, WALL & DECK SURFACE CLEANER

Technical Data & Application Instructions

PRODUCT DESCRIPTION:

UNITED CLEANING CONCENTRATE is a highly effective cleaning agent that, when combined with water, penetrates the existing coating or substrate and allows contaminants to be flushed from the surface. Formulated with penetrants from wetting agents and surfactants found in certain organic compounds, UCC performs at a very high level, with cleaning and pore-penetrating capabilities far exceeding most products available today. UCC is non-toxic and leaves no pollutants or contaminating by-products to damage the environment.

BASIC USES:

UNITED CLEANING CONCENTRATE was especially developed for the proper cleaning of existing elastomeric coating on roofs, metal surfaces, concrete and masonry substrates, as well as uncoated roof, deck and wall surfaces. UCC has excellent cleaning capabilities with all types of coatings including acrylic, polyurethane silicone and Hypalon®. UNITED CLEANING CONCENTRATE is biodegradable and is environmentally friendly when used in accordance with National, State and Local regulations. Properly applied, UCC penetrates the old coating, lifting oxidized material, dirt, grease, and other contaminants into suspension for easy flushing from the substrate, leaving behind an acceptable surface for (re)coating.

PACKAGING:

UNITED CLEANING CONCENTRATE is packaged in 5-gallon (19 liter) pails and 55-gallon (209 liter) drums.

TYPICAL CHARACTERISTICS:

UNITED CLEANING CONCENTRATE is biodegradable and is environmentally friendly when used in accordance with National, State and Local regulations. The UCC Material Safety Data Sheet (MSDS) supplies pertinent information and is considered an integral part of this document. UCC complies with all known VOC regulations and requirements.

ADVANTAGES OF UNITED CLEANING CONCENTRATE

1. Biodegradable:
   UNITED CLEANING CONCENTRATE is biodegradable, allowing for proper cleaning of substrates where washing with hazardous cleaning products would not be permitted prior to (re)coating.

2. Open Dry Time:
   UNITED CLEANING CONCENTRATE will remove dirt, pollutants and other contamination build-up even if the product dries prior to rinsing.

3. Environmentally Safe:
   UNITED CLEANING CONCENTRATE will not harm ground vegetation, water collection ponds, septic tanks or treatment plants even in its concentrated form, nor will accidental ingestion by animal life cause adverse side effects.

4. Agency Approvals:
   UNITED CLEANING CONCENTRATE meets all the requirements of U.S.D.A. and FDA standards, and is also OSHA compliant.

® Hypalon is a Registered Tradmark of the Dupont Corp.
APPLICATION INSTRUCTIONS

1. For optimum results, UNITED CLEANING CONCENTRATE should be diluted at a 1 to 10 ratio with water. Accordingly, 5-gallons (19 liters) should be mixed with 50-gallons (189 liters) of water in a 55-gallon (209 liter) drum.

2. Apply the diluted cleaning solution to the substrate under low pressure at the rate of 150 to 200 sq. ft. per gallon (3.7 to 4.9 m²/l). Allow the solution to stand for a minimum of 15 minutes. Low areas and depressions in the substrate having excessive dirt build-up may require additional solution and/or scrubbing with a stiff-bristled broom. Extremely stubborn areas may require treatment with a more concentrated dilution.

3. For best results, rinse the surface with water under high pressure, utilizing either conventional spray or pressure washing equipment. Attach a wand or extension to the high pressure hose and use a standard coating spray tip to achieve maximum cleaning of the substrate. Repeat rinsing as required to remove all cleaning solution.

4. Allow the substrate to completely dry prior to the application of any coating materials.

UNITED COATINGS requires thorough cleaning of existing substrates prior to the application of new elastomeric coatings. Accordingly, UNITED COATINGS strongly endorses the use of approved cleaning procedures for warranties issued by the manufacturer upon completion and acceptance of the project. UNITED CLEANING CONCENTRATE is recommended in lieu of all other types of cleaning solutions, detergents, TSP or simple high pressure water washing.

USE UNITED CLEANING CONCENTRATE TO CLEAN:

- Existing roof coatings
- Existing deck coatings
- Existing wall coatings
- Metal roof and wall surfaces
- Concrete deck surfaces
- Concrete and masonry wall surfaces

For additional information, guidelines or recommendations please contact UNITED COATINGS’ Technical Service Department. For precautions consult product label and Material Safety Data Sheets.
UNI-CRETE
POLYMER-MODIFIED CONCRETE
SURFACING & REPAIR MATERIAL

Technical Data & Application Instructions

PRODUCT DESCRIPTION
UNI-CRETE is a ready-mixed, single component formulation of cement, sand and proprietary additives, designed as an economical alternative to the replacement of existing concrete, asphalt, wood and metal surfaces. When mixed with water it forms a cementitious coating, providing adhesion and strength in thicknesses from 1/32" to 12". As an overlay system, it will not delaminate, even at a feather edge. UNI-CRETE can be used to regrade, relevel, renovate, re-surface, add slip-resistance and create decorative patterns and designs. It can also be used to provide below-grade waterproofing on foundation walls, planter boxes, etc. UNI-CRETE is an excellent alternative to “sacking” rough or porous concrete surfaces prior to topcoating with UNITED’S Elastuff polyurethanes or other coatings systems. It achieves a superior bond and cures more rapidly than typical sacking compounds, and eliminates the need for a sweep-blast prior to application of the subsequent topcoat. This durable finish will resist gas, oils, water, salts and ultraviolet rays. Standard color is gray, however, UNI-CRETE can be tinted or can also be topcoated with Canyon Tone Stain to achieve a wide range of pastel and earth-tone shades.

SURFACE PREPARATION
Surfaces must be structurally sound. Remove any loose, soft or contaminated materials completely from areas to be repaired or resurfaced. Any existing coatings, sealers, curing agents, etc., must be cleaned from the surface, providing direct contact with the original substrate to assure tight adhesion. Remove dirt, grease, oil and other contaminants from the surface using United Cleaning Concentrate (UCC) reduced with 10 parts clean water, followed by a high pressure water rinse. Acid etch with 10% Muriatic Acid solution to remove glossy areas on concrete. Rinse thoroughly with clean water.

TYPICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Set Time</td>
<td>5 to 10 minutes [ASTM C191]</td>
</tr>
<tr>
<td>Final Set Time</td>
<td>10 to 20 minutes [ASTM C191]</td>
</tr>
<tr>
<td>Compressive Strength @ 2 hours</td>
<td>250 psi (1.7 MPa) [ASTM C109]</td>
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<tr>
<td>Compressive Strength @ 24 hours</td>
<td>3,000 psi (20.7 MPa) [ASTM C109]</td>
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<tr>
<td>Compressive Strength @ 7 days</td>
<td>5,000 psi (34.5 MPa) [ASTM C109]</td>
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<tr>
<td>Compressive Strength @ 28 days</td>
<td>6,000 psi (41.4 MPa) [ASTM C109]</td>
</tr>
<tr>
<td>Adhesive Strength (over concrete)*</td>
<td>200 psi (1.08 MPa) [ASTM D4541]</td>
</tr>
<tr>
<td>Adhesive Strength (with Uni-Tile Sealer)*</td>
<td>300 psi (2.07 MPa) [ASTM D4541]</td>
</tr>
<tr>
<td>Freeze/Thaw</td>
<td>96 Cycles - No Effect [ASTM C666]</td>
</tr>
<tr>
<td>Compressive Strength after Freeze/Thaw</td>
<td>6,430 psi (44.3 MPa) [ASTM C109]</td>
</tr>
<tr>
<td>Scaling Resistance</td>
<td>Excellent [ASTM C672]</td>
</tr>
<tr>
<td>Specific Gravity (Average Mix)</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*Adhesive strength greater than cohesive strength of the concrete substrate.
PACKAGING & MIXING

UNI-CRETE is packaged in either 50 pound (22.6 kg) bags (minimum pallet-load quantities), or 5-gallon (19 liter) plastic pails containing 50 pounds (22.6 kgs). It is mixed at the jobsite to achieve the desired consistency. Always add UNI-CRETE to the water, mixing constantly to achieve a uniform mix. Consistency can be varied depending on the amount of water, from a heavy paste for vertical walls and overheads, to a self-leveling slurry for flooring applications. Small amounts of material can be mixed manually or mechanically, while a mortar mixer is most efficient for large batches. Suggested mix is as follows:

- **Overhead:** Add 50 lbs. (22.6 kgs) UNI-CRETE to 4.5 quarts (4.3 liters) water.
- **Vertical:** Add 50 lbs. (22.6 kgs) UNI-CRETE to 5.0 quarts (4.8 liters) water.
- **Horizontal:** Add 50 lbs. (22.6 kgs) UNI-CRETE to 5.5 quarts (5.2 liters) water.

UNI-CRETE must always be double-mixed prior to use to achieve the true consistency. After the initial addition of UNI-CRETE to the water, wait approximately 5 minutes for the mix to achieve an initial “set”. Remixing the material will break the initial set to “wet out” the mix so that it becomes much more fluid. Add water sparingly to adjust the viscosity, if necessary. After remixing the material, the working pot life will be approximately 30 minutes at 75°F (24°C).

APPLICATION

Surfaces to be repaired shall be pre-dampened with clean water. Wipe away any standing water prior to application. Spall repairs, as well as vertical and horizontal repairs, should be hand-packed and finished with a damp brush or trowel. Do not apply at temperatures below 50°F (10°C). The final physical properties of the UNI-CRETE will be enhanced by keeping the surface damp using a water mist during the initial hour of cure.

UNI-CRETE may be applied using a trowel or squeegee to achieve the desired thickness. A wide variety of finish textures can also be created by using a hopper gun to spatter-spray a topcoat of UNI-CRETE. The spatter can be “knocked-down” or left as is depending on the desired finish.

At an average consistency, UNI-CRETE will yield a combined volume of 4.5 gallons (17 liters), resulting in a total coverage of 980 cubic inches (16,066 cubic cm). This translates into a coverage rate of 17 sq. ft. (1.6 m²) at .4” (1 cm) thickness. For repairs over 1” (2.5 cm) in depth, add pea gravel or minimum 8 mesh sand at the rate of 25% by volume (3 parts UNI-CRETE to 1 part pea gravel).

UNI-CRETE is designed to be primed with UNITED’S Uni-Tile Sealer prior to topcoating with UNITEDS’ Elastuff urethane systems. Apply Uni-Tile Sealer at the rate of 300 sq. ft per gallon (7.3 m²/l) after allowing the UNI-CRETE to cure a minimum of 24 hours. Apply Elastuff topcoat within 48 hours of primer application, or within 24 hours if surface is exposed to direct sunlight or high temperatures.

STORAGE

Store bags off the floor in a dry, low humidity area. Securely reseal any partially used containers.

PRECAUTIONS

After use, wash hands thoroughly. If there is eye contact, flush with water for 15 minutes. If irritation persists, call a physician immediately. Do not take internally. Keep away from children. This material contains no ingredients that are required to be listed by OSHA per 29 CFR 1910.1200. For additional information, refer to Material Safety Data Sheet (MSDS) for this material.
Technical Data & Application Instructions

PRODUCT DESCRIPTION

WALL-BOND 90 is a 100% acrylic polymer that, when mixed at the jobsite with Portland Cement and a small amount of water, forms a water-repellent base coat for use in conjunction with the UNI-TEX Exterior Wall System. WALL-BOND 90 can be used to embed UNI-TEX reinforcing mesh, or on its own either as a leveling compound or to adhere EPS board to various substrates. It trowels easily, filling and leveling irregular surfaces, yielding a durable, flexible finish.

BASIC USES

WALL-BOND 90 was specifically developed for use as a base coat for embedding UNI-TEX Field Fabric in UNITED’S Exterior Insulation and Finish System (EIFS). It can also be used as an adhesive to affix insulation board to approved substrates, such as concrete, masonry and approved exterior wallboard products. WALL-BOND 90 can also be used to relevel, fill, renovate and/or re-surface these substrates.

TYPICAL PROPERTIES

1) Weight per Gallon (Density)…………… 12.8 lbs. (5.8 kgs) (+.2) [ASTM D 1475]
2) Tensile Strength……………………… 500 psi (3.5 MPa) (+ 50) [ASTM C 190]
3) Flexural Strength…………………….. 1,300 psi (9.0 MPa) (+ 100) [ASTM D 790]
4) Shearbond Adhesion………………….. 150 psi (1.0 MPa) 50) [R&H Method]
5) Compressive Strength………………… 5,700 psi (39.3 MPa) (+ 100) [ASTM C 109]
6) Flash Point…………………………… 205°F (96°C) [ASTM D 56]
7) V.O.C. ……………………………….. 0.02 lb./gal. [EPA RM-24]
8) Pot Life……………………………… ~ 2 Hrs. @ 75°F (24°C), 50% R.H.
9) Shelf Life……………………………. One (1) Year From Date of Shipment

PACKAGING & MIXING

WALL-BOND 90 is packaged in 5-gallon (19 liter) plastic pails containing 60 lbs. (27 kgs) of acrylic polymer. To use, pour ½ of the contents (30 lbs./13.6 kgs) into a second, clean 5-gallon (19 liter) container. To each container add approximately 1/3 bag (31 lbs./14 kgs) of Type I or Type II Portland Cement, mixing constantly. Once blended, allow the mixture to stand for approximately five (5) minutes to allow the viscosity to stabilize. Mix once again to break the initial set, then slowly add water until the desired consistency is achieved. Do not add more than ¾ gallon (2.8 liters) of water, as excess water will decrease the strength and vertical hold of the WALL-BOND 90. Likewise, do not add more than 33 lbs. (15 kgs) of cement to the acrylic polymer in either container, as additional cement will decrease water resistance and flexibility properties, as well as the working time of the mixture.
APPLICATION

All surfaces must be clean and dry, free of dirt, dust, oil, efflorescence, form or release agents, and other contaminants that may interfere with optimum adhesion. When applying WALL-BOND 90 as a base coat, all insulation board irregularities greater than 1/16" (1.6 mm) from plane must be sanded flush. Apply WALL-BOND 90 to the entire surface of the insulation board at a thickness of approximately 1/16" (1.6 mm), or 1½ times the thickness of the Field Fabric being used. Trowel over the Field Fabric until it is completely encapsulated by the WALL-BOND 90. Any ridges or rough areas on the surface shall be removed with a rasp or heavy grit sandpaper after the WALL-BOND 90 has thoroughly dried. The coverage rate will be approximately 110 sq. ft. (10.2 m²) per 5-gallon (19 liters) pail of blended material (30 lbs./13.6 kgs) of WALL-BOND 90 mixed with (31 lbs./14 kgs) of Portland cement) when embedding standard Field Fabric. Since each 5-gallon (19 liters) pail of polymer mix will make 2 pails of blended material, each pre-blended pail of WALL-BOND 90 will cover approximately 220 sq. ft. (20.4 m²). The overall minimum base coat thickness shall be sufficient to fully embed and encapsulate the mesh, so that no mesh is visible once the WALL-BOND 90 has dried. Areas requiring higher impact performance and/or using heavier mesh will require additional material.

When using WALL-BOND 90 as an insulation board adhesive, apply the product using a stainless steel notched trowel (½" x ½" x 2'/1.3 cm x 1.3 cm x 5 cm) to the entire back side of the insulation board. Immediately place the insulation board onto the wall surface and slide into place, tightly abutting adjacent insulation boards, and taking care to ensure there is no WALL-BOND 90 between the panels. Press firmly over the entire face of the insulation board to ensure maximum adhesion. Mechanical fasteners can be utilized to overcome any contours in the substrate, or if there is any doubt as to adequate initial bond. When using the recommended notched trowel, one pail of blended material will adhere approximately 30 sheets of 2' x 4' (.6 x 1.2 m) insulation board.

The workable pot life of WALL-BOND 90 is approximately 2 hours, depending upon ambient conditions, including temperature and humidity. WALL-BOND 90 should be protected from rain or other adverse weather conditions for a period of 24 hours or until thoroughly dry. Complete cure will require approximately 28 days.

Clean tools and equipment, as well as any adjacent areas to which the WALL-BOND 90 is inadvertently applied, with water while the material is still wet.

LIMITATIONS & PRECAUTIONS

WALL-BOND 90 will freeze and become unusable at temperatures below 32°F (0°C). Do not ship or store without protection from freezing. Do not apply at ambient temperatures below 40°F (4°C) or when the surface temperature is below 40°F (4°C).

Avoid contact with eyes and skin. For additional information on safety requirements, refer to OSHA guidelines and WALL-BOND 90 Material Safety Data Sheet.
### UNITED COATINGS RECOMMENDED SOLVENTS FOR REDUCING AND CLEANING

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<thead>
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*NR - Not Recommended. Normally, reducing is not recommended or required. UNITED’S coatings are formulated for ease of application. Unusual job conditions may require that material be reduced. Refer to product application instructions and precautions.  

1 - After cleaning spray equipment with water, flush with Mineral Spirits, Lacquer Thinner, Ketone Solvent or Glycol Ether.  

2 - In areas requiring a non-combustible solvent, use Methylene Chloride. Do not leave Methylene Chloride in fluid hoses or pump for prolonged periods, as swelling and deterioration of hoses, and corrosion of pump may result. After cleaning, flush with Mineral Spirits.