QUEST CONSTRUCTION PRODUCTS

ELASTUFF 101/102 & 101/103

Technical Data Sheet

UNITED COATINGS

PRODUCT DESCRIPTION

ELASTUFF 101/102/103 is a high solids, moisture-catalyzed, single-component polyurethane coating system. The system consists of **ELASTUFF 101**, an aromatic polyurethane basecoat, and **ELASTUFF 102/103**, a UV-resistant, color stable aliphatic polyurethane topcoat. **ELASTUFF 103**, a low VOC aliphatic topcoat is also available to meet VOC regulations in specific areas. This combination provides an excellent balance of tensile strength, elongation and hardness, resulting in superior durability, dirt and mildew resistance, chemical resistance and weatherproofing. High abrasion and impact resistance also offer protection from maintenance traffic and severe weather conditions.

ELASTUFF 101/102/103 sytem is a permanently flexible "breathing" membrane, allowing moisture vapor to pass through the film while remaining impervious to mass water penetration from the exterior.

WARRANTY

ELASTUFF 101/102 or **101/103** qualifies for QCP's Warranty Programs. Standard Warranty Program guarantees the coating system will not leak water due to deterioration as a result of ordinary weather conditions. System Warranty Program guarantees the total roof membrane system (coating and labor) against water leakage as a result of deterioration from ordinary weathering. Consult QCP's Warranty Explanation Forms for details.

PACKAGING & SHELF LIFE

ELASTUFF 101, **102** and **103** are single component materials available in 5 gallon (19 liter) pails and 55 gallon (208 liter) drums. **ELASTUFF 102** and **103** are supplied with a separate booster unit, which must be thoroughly mixed into the topcoat to ensure optimum cured properties.

Store material indoors at temperatures between 40°F and 90°F (4°C and 32°C). Shelf life in unopened containers is 6 months from date of shipment.

QCP Industrial Solutions

March 2015, supercedes October 2013

BASIC USES & INFORMATION

The **ELASTUFF 101/102/103** System is designed for protecting a wide range of substrates from the effects of weathering and moisture intrusion. It is particularly effective as a protective membrane over new or existing roof substrates, including concrete, metal, polyurethane foam, and asphaltic substrates. It provides a barrier to the effects of degradation caused by normal weathering, aging, and ultraviolet exposure.

ELASTUFF 101/102/103 is also effective when used on other horizontal or vertical applications requiring a tough, abrasion, and chemical-resistant membrane, such as secondary containment and hot or ambient storage tanks.

The **ELASTUFF 101/102** system also achieves excellent adhesion to primed concrete, masonry, metal and wood surfaces. **ELASTUFF 102** or **103** are very effective when used on their own in a wide variety of applications requiring a tough, abrasion resistant finish.

ELASTUFF 101, **102** and **ELASTUFF 103** are single-component elastomers that are catalyzed through exposure to moisture in the air. They are designed for application through standard airless spray equipment.

ELASTUFF 101 is available in standard Light Gray only. **ELASTUFF 102** and **103** are available in standard White, which is certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria, as well as California Title 24 requirements.

PHYSICAL PROPERTIES

ELASTUFF 101 BASECOAT	
Solids By Weight	82% (±2) [ASTM D2369]
Solids By Volume:	80% (±2) [ASTM D2697]
Flash Point	75°F (24°C) [ASTM D3278]
Dry Time to Walk On	Basecoat: 6-8 hours @ 24 wet mils Dry Times at 70°F (21°C), 50% RH
Tensile Strength	1,000 psi (±100) [ASTM D412]
Elongation	500% (±50) [ASTM D412]
Tear Strength	125 lbs. per inch (±20) [ASTM D1004]
Hardness	65–70 Shore A [ASTM D2240]

ELASTUFF 102/103 TOPCOAT	
Solids By Weight	ELASTUFF 102 Topcoat: 77% (±2) ELASTUFF 103 Topcoat: 68% (±2) [ASTM D2369]
Solids By Volume:	ELASTUFF 102 Topcoat: 65% (±2) ELASTUFF 103 Topcoat: 58% (±2) [ASTM D2697]
Flash Point	75°F (24°C) [ASTM D3278]
Dry Time to Walk On	8-12 hrs @ 16 wet mils with booster Dry Times at 70°F (21°C), 50% RH
Tensile Strength	2,500 psi (±200) [ASTM D412]
Elongation	400% (±50) [ASTM D412]
Tear Strength	285 lbs. per inch (±25) [ASTM D1004]
Hardness	90–95 Shore A [ASTM D2240]

ELASTUFF 101/102 or 101/103 SYSTEM	
Abrasion Resistance	Less than 35 milligrams weight loss using CS-17 abrasive wheels and 1000 gram weights after 1000 cycles on Taber Abraser. [ASTM D4060]
High Temperature Stability	Tested in thermostatically controlled heat chamber. Will not age harden or slump at temperatures up to 200°F (93°C). [ASTM D794]
Low Temperature Flexibility	Passes 180 degree flex over 1/8" (3 mm) mandrel at -7°F (-22°C), Federal Test Method No. 141a-6221.
Low Temperature Impact Resistance	No surface cracks or breaks when impacted with 4.6 oz (130 gram), 1¼" (3.18 cm) steel ball dropped from a height of 5' (1.5 m) at -12°F (-25°C).
Temperature Limits For Normal Service Conditions	Tested from -30°F to 200°F (-34°C to 93°C).
Fire Resistance	UL-790 Class "A" listed system. Consult UL Building Material Directory.
Ponded Water Adhesion	5" (12.7 cm) column of water over polyurethane foam coated with the ELASTUFF 101/102/103 system. No significant loss of adhesion after 30 days of continuous testing. No blistering or other deleterious effects. No migration of water into the substrate.
Standard Colors	ELASTUFF 101 is available in standard Light Gray only. ELASTUFF 102 and 103 are available in standard White.

PERFORMANCE PROPERTIES & ADVANTAGES

Building Code Acceptance: These UL-790 Class "A" roofing systems are accepted by all major model building code authorities for class "A" construction. The code authorities include the Uniform Building Code (UBC), Building Officials and Code Administrators (BOCA) and Southern Building Code Authority (SBCA).

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APPROVALS	
UL 790 Class A	UL-790 Class "A" Systems: ELASTUFF 101/102 is UL-790 Class "A" Classified over spray-applied polyurethane foam. Refer to UL Building Materials Directory for foam manufacturers and types, foam thicknesses and densities, inclines and coating requirements of rated roof systems.
CA Fire Marshal	4175 767:0102
CRRC (Cool Roof Rating Council coolroofs.org	*ELASTUFF 102/103 White* Initial Solar Reflectance 0.81 Initial Thermal Emittance 0.89 Initial SRI 101 Product ID 0614-0003
Department of Energy, ENERGY STAR®	Approved: ELASTUFF 102/103 white
California Title 24	Meets all Title 24 reflectivity & emissivity criteria.

PERFORMANCE PROPERTIES & ADVANTAGES

Resistance to Accelerated Weathering: 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 U.V. radiation. A water bath at the bottom of the unit is maintained at 100°F (38°C) to create a constant high humidity condition. After 3,000 hours of continuous testing, the **ELASTUFF 101/102** system showed no surface checking or cracking, no delamination, no loss of flexibility and no chalking. Tested in accordance with ASTM G53.

Resistance to Freeze-Thaw: ELASTUFF 101/102 test panels were exposed to freeze-thaw cycles under complete immersion in deionized water. Cycles consisted of 16 hours at 0°F (-18°C) and 8 hours at 70°F (21°C). After 4 complete cycles, the physical integrity of the coating remained unaffected. There was no loss of adhesion, and no blistering or softening.

Water Absorption: 3" (7.5 cm) free film discs were immersed in deionized water at 70°F (21°C). After 7 days immersion, **ELASTUFF 101** showed less than 1% weight gain, while **ELASTUFF 102** and 103 showed less than 2.5% weight gain. No visual effect was observed and all elastomeric properties were retained. Tested in accordance with ASTM D543.

Resistance to Salt Spray: Coated polyurethane foam test panels were placed in the Harshaw Salt Spray Cabinet and maintained at a temperature of 95°F (35°C), utilizing a fog solution of not less than 5% sodium chloride by weight. After 500 hours of continuous testing, the **ELASTUFF 101/102** system had no loss of adhesion, no blistering or softening and no loss of flexibility. ASTM B 117.

Bond Strength: Instron Universal Testing Instrument—50 to 60 lbs./in² (0.34–0.41 MPa) breaking strength. There was no adhesive failure between the **ELASTUFF 101** coating and the polyurethane foam substrate. **ELASTUFF 101** remained totally bonded to the polyurethane foam under all stress conditions. Breaking point occurred within the polyurethane foam itself. ASTM C297.

Impact Resistance: Steel Ball Drop Procedure using a 12 ounce (340 gram), 1¾" diameter (4.45 cm) steel ball dropped from a height of 20 ft (6.1 m) onto 2.7 lb/ft³ polyurethane foam coated with the **ELASTUFF 101/102/103** system. No surface cracks or breaks were observed in the coating. Test is adapted from National Bureau of Standards "Falling Hailstone Test".

APPLICATION INFORMATION

Mixing: ELASTUFF 101, **102** and **103** are single component materials. **ELASTUFF 102** and **103** are supplied with a separate booster unit that must be added to ensure proper cure and adhesion. Thoroughly mix all containers of **ELASTUFF 101, 102** and **103** with an air-driven power mixer for a minimum of 5 minutes prior to application. Avoid sucking air into the coating while mixing. Once the booster unit is added to the **ELASTUFF 102** or **103** the pot life will be 3 to 5 days depending upon ambient conditions. Previously opened containers, or containers that have been stored for an extended length of time, may develop a skin on top of the coating. This should be removed prior to mixing. **Thinning the material is not recommended.**

Spray Equipment: ELASTUFF 101/102/103 have been applied over a wide variety of substrates utilizing many different brands, types and sizes of conventional and airless equipment. Airless equipment is best suited for field applications, although roller application can be used for confined areas or where spray application is not practical. The following minimums are recommended for spray application:

- PUMP: 1 gallon per minute (3.8 l/minute) output and 2,000 psi (13,790 kPa) pressure capability.
- GUN: Any airless spray gun compatible with the pump used.
- SCREEN SIZE: Filter screens should be 30 mesh or larger.
- TIP SIZE: A reversible, self-cleaning tip with orifice size of 0.021"–0.035" (0.5–0.9 mm) and a fan angle of 40°–50°.
- FLUID HOSE: Use 3/8" (1 cm) inside diameter, nylon high-pressure hose for lengths up to 75 ft (23 m) from pump. From 75 ft–200 ft (23–51 m) use ½" (1.3 cm) inside diameter hose added to pump side of existing 3/8" (1 cm) hose to maintain pressure and delivery. Over 200 ft (51 m) use 5/8" to ¾" (1.6–1.9 cm) inside diameter hose added to pump side of existing hose.

Larger equipment will increase production capabilities. Larger diameter spray hoses will extend distances and heights to which **ELASTUFF 101/102/103** may be pumped.

Surface Preparation: All surfaces shall be dry and clean, free from any dirt, grease, oil, pollution fallout, loose rust, form release agents, surface chemicals or other foreign contaminants that could interfere with adhesion. Previously painted or coated surfaces must have any oxidation, chalking and/or loose paint or coating removed by water blasting. Surfaces shall be free of sharp projections, ridges and loose aggregate. Any cracks, splits, tears, seams, holes, protrusions, blisters, drains, scuppers, vertical/horizontal interfaces, etc. must be reinforced using either Roof Mate Mesh or Uni-Tape, as per guidelines for each individual substrate.

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APPLICATION INFORMATION, CONT'D.

BUILT-UP & MODIFIED BITUMEN – Any loose gravel or granules 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 coating application. New asphalt shall be exposed to ambient conditions for 45–60 days prior to coating. Under cold, cloudy and/or rainy conditions a longer period of time may be required. Apply a tack-coat of **ELASTUFF 101** thinned 100% with Xylol over Built-Up roofs to solidify the surface.

CONCRETE – All concrete surfaces must be dry, clean, and free of dirt, oil, soapy films, surface chemicals or other foreign contaminants. Allow new concrete to cure a minimum of 28 days prior to coating. Concrete surfaces that are contaminated with oil, grease, dirt, etc., shall be cleaned using a biodegradable chemical cleaner such as United Cleaning Concentrate (UCC). 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 coating application. Chalky, spalled or punky concrete shall be primed with Uni-Tile Sealer LV penetrating polyamide epoxy, applied at the rate of approximately 400–500 ft² per gallon (9.7–12 m²/l).

Non-moving cracks in concrete surfaces shall be filled with a high quality urethane caulk as per manufacturer's instructions. Moving cracks, splits and/or voids must be repaired and reinforced using Roof Mate Mesh encapsulated into a strip-coat of **ELASTUFF 101**. Embed an appropriate length of 4", 6" or 12" (10, 15 or 30 cm) fabric – depending on the detail area – into a strip-coat of **ELASTUFF 101**, centered over the crack, while it is still wet. Apply additional material over the top of the fabric to ensure it is totally encapsulated, taking care to remove any wrinkles, gaps or air pockets.

METAL – 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. Prior to coating application, thoroughly wash roof surfaces with UCC or other biodegradable cleaner. Rinse thoroughly using fresh water under high pressure to remove all traces of the chemical cleaner.

Steel surfaces shall be sound and free from rust scale and other contamination. Rusted areas shall be mechanically abraded to remove all loose rust. Metal roofs exhibiting sound rust shall be primed using Lockdown rust inhibitive primer at approximately 300 ft² per gallon (7.3 m²/l).

ELASTUFF 101/102/103 is self-priming over most existing roof substrates. Prime bare wood surfaces with Uni-Tile Sealer LV applied at the rate of approximately 400–500 ft² per gallon (9.7–12 m²/l). Contact QCP's Technical Service Department for specific primer recommendations over other substrates.

POLYURETHANE FOAM – Polyurethane foam and adjacent surfaces to be coated shall be completely dry, and free of any degraded foam, grease, oil, dirt or other contaminants that will interfere with proper adhesion. Any physical damage to the polyurethane foam shall be repaired before coating application commences.

FOAM REQUIREMENTS

THIS SECTION ONLY APPLIES TO PUF SUBSTRATES. IF APPLYING TO OTHER SUBSTRATE(S), SKIP THIS SECTION. Polyurethane foam components shall be metered and sprayed in accordance with foam manufacturer 's directions and specifications. Polyurethane foam should not be sprayed during inclement weather or when the following conditions exist:

1. If surface temperature is above 120°F (49°C) or below 35°F (2°C), or when the dew point is less than 5°F (3°C) above the surface temperature. Temperatures shall be measured with a surface thermometer. For surface temperatures between 35°F and 50°F (2°C and 10°C), special catalyzed foam with short cream time must be used.
2. If surface moisture is present, or where moisture meter readings are in excess of 10% (this may vary slightly depending on geographic location).
3. If wind velocity is above 12 miles (19 km) per hour (unless adequate windscreens are provided).
4. If relative humidity is above 80%.

The finished surface texture of the applied polyurethane foam shall range from a smooth to medium "orange peel" finish. Surface textures defined as "popcorn" or "tree bark", or surfaces which exhibit crevices, voids or pinholes are not acceptable. The finished surface shall not have any soft or spongy areas or areas of improperly proportioned material. Polyurethane foam shall be a minimum of 1" (2.5 cm) thickness and 2.5 lbs. (1.1 kg) density.

Foamed-in-place cants and crickets shall be smooth and uniform to allow positive drainage. Filleting of foam to parapet walls, vents, roof mounted equipment, etc., shall provide a smooth transition to the roof deck and be of uniform thickness.

If uncoated polyurethane foam is exposed to ultraviolet light for an extended length of time, a fine powder (oxidation) will form on the surface of the foam. Applying **ELASTUFF 101** within 72 hours of the foam application will eliminate this potential problem. Not all polyurethane foams have the same ultraviolet stability. Some will require topcoating in less than 72 hours. Should oxidation of the polyurethane foam occur, the foam insulation surface shall be brushed with a stiff bristle broom or mechanically scarified or sanded. A light pass of foam must then be applied to reseal the surface.

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COATING APPLICATION

The **ELASTUFF 101/102/103** system is best suited for application through airless spray equipment. Utilize a pump with a minimum output of 2 gallons (7.6 l) per minute and 2,500 psi (17,241 kPa) pressure capability. A natural bristle brush or a medium nap roller may be utilized for touch-up and edging work, or for small areas that are not practical for spray application.

Each coat of **ELASTUFF 101/102/103** shall be applied in a direction perpendicular to the previous coat. Edges of flat roof areas shall be precoated in a "picture frame" configuration. The System must be applied in two or more separate coats to ensure proper coverage and cure rate, and a pinhole-free continuous film. **ELASTUFF 101** Gray Basecoat must always be applied as the first coat over polyurethane foam. **ELASTUFF 102** or **103** Topcoat can be used with or without **ELASTUFF 101** over properly primed wood, metal or concrete. All surfaces must be uniformly coated and free of voids, blisters and pinholes. **ELASTUFF 102** or **103** shall be applied over **ELASTUFF 101** within a 48 hour period following application of **ELASTUFF 101**.

Successive coats of **ELASTUFF 101** or **102/103** should be applied as soon as the previous coat has dried sufficiently to allow the applicator to walk on. This can normally be accomplished on the next working day, but in any event before contamination occurs. If contamination in the form of dirt, dust, pollution fallout, etc. does occur on the basecoat surface, it must be pressure washed before an additional coat of **ELASTUFF 101**, **102** or **103** is applied.

The **ELASTUFF 101/102/103** system should not be applied when the ambient temperature is below 50°F (10°C), or if rain is anticipated within 4 hours of application. Store material for a sufficient length of time in a warm area prior to application to bring material temperature to 70°F (21°C). The sprayability of **ELASTUFF 101, 102** and **103** will depend on the combination of proper equipment and temperature of the coating at time of application.

ELASTUFF 101 applied at the rate of 1 gallon per 100 ft² (0.4 l/m) will theoretically yield 12.8 dry mils (325 microns). **ELASTUFF 102** applied at this rate will theoretically yield 10.4 dry mils (264 microns), and **ELASTUFF 103** will theoretically yield 9.3 dry mils (236 microns).

Recommended coverage rates and dry film thicknesses are minimum requirements for issuance of QCP's various Warranty Programs on typical roofing substrates and are for guideline use only. Contact QCP's Technical Service Department or QCP Specifications for recommended application rates for other specific project requirements or over other substrates.

RECOMMENDED COVERAGE RATES

	WARRANTY TERM / COVERAGE RATE		
SUBSTRATE	5-year Standard Warranty	10-year Standard or 5-year System Warranty	10-year System Warranty
Polyurethane Foam	**24 dry mils (610 microns)** ELASTUFF 101: 1 or 2 coats at 1.25 gallons/100 ft² (0.5 l/m²) ELASTUFF 102 or 103: 1 or 2 coats at 1.25 gallons/100 ft² (0.5 l/m²)	**30 dry mils (762 microns)** ELASTUFF 101: 1 or 2 coats at 1.5 gallons/100 ft² (0.6 l/m²) ELASTUFF 102 or 103: 1 or 2 coats at 1.5 gallons/100 ft² (0.6 l/m²)	**38 dry mils (965 microns)** ELASTUFF 101: 1 or 2 coats at 2 gallons/100 ft² (0.8 l/m²) ELASTUFF 102 or 103: 1 or 2 coats at 1.75 gallons/100 ft² (0.7 l/m²)

SUBSTRATE	5-year Standard Warranty	10-year Standard or 5-year System Warranty	15-year Standard or 10-year System Warranty	15-year System Warranty
Modified Bitumen & Built-Up	**25 dry mils (635 microns)** ELASTUFF 101: 2 coats at 0.8 gallon/100 ft² (0.32 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1 gallon/100 ft² (0.4 l/m²)	**33 dry mils (838 microns)** ELASTUFF 101: 2 coats at 1 gallon/100 ft² (0.4 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.25 gallons/100 ft² (0.5 l/m²)	**40 dry mils (1,016 microns)** ELASTUFF 101: 2 coats at 1.2 gallons/100 ft² (0.48 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.5 gallons/100 ft² (0.6 l/m²)	**48 dry mils (1,829 microns)** ELASTUFF 101: 2 coats at 1.4 gallons/100 ft² (0.56 l/m²) per coat ELASTUFF 102 or 103: 2 coats at 0.9 gallon/100 ft² (0.36 l/m²) per coat
Concrete	**25 dry mils (635 microns)** ELASTUFF 101: 2 coats at 0.8 gallon/100 ft² (0.32 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1 gallon/100 ft² (0.4 l/m²)	**33 dry mils (838 microns)** ELASTUFF 101: 2 coats at 1 gallon/100 ft² (0.4 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.25 gallons/100 ft² (0.5 l/m²)	**40 dry mils (1,016 microns)** ELASTUFF 101: 2 coats at 1.2 gallons/100 ft² (0.48 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.5 gallons/100 ft² (0.6 l/m²)	**48 dry mils (1,829 microns)** ELASTUFF 101: 2 coats at 1.4 gallons/100 ft² (0.56 l/m²) per coat ELASTUFF 102 or 103: 2 coats at 0.9 gallon/100 ft² (0.36 l/m²) per coat
Metal	**20 dry mils (508 microns)** ELASTUFF 101: 1 coat at 1 gallon/100 ft² (0.4 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1 gallon/100 ft² (0.4 l/m²)	**25 dry mils (635 microns)** ELASTUFF 101: 1 coat at 1.25 gallons/100 ft² (0.5 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.25 gallons/100 ft² (.5 l/m²)	**30 dry mils (762 microns)** ELASTUFF 101: 2 coats at 0.75 gallon/100 ft² (0.3 l/m²) per coat ELASTUFF 102 or 103: 1 coat at 1.5 gallons/100 ft² (0.6 l/m²)	**35 dry mils (889 microns)** ELASTUFF 101: 2 coats at 0.9 gallon/100 ft² (0.36 l/m²) per coat ELASTUFF 102 or 103: 2 coats at 0.9 gallon/100 ft² (.36 l/m²) per coat

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COATING APPLICATION, CONT'D.

As work proceeds the Applicator must periodically check the number of gallons (liters) used and compare to area coated. If adequate material has not been used according to QCP's Warranty Requirements or Project Specifications, adjust accordingly and apply additional material to previously coated areas. Allow additional material for roofs exhibiting a rough surface profile or texture.

The **ELASTUFF 101/102/103** system shall extend a minimum of 4" (10 cm) up all parapet walls, vent pipes and other protrusions, creating a self-terminating flashing.

ELASTUFF 101/102/103 shall not be applied when one or more of the following conditions exist:

1. If ambient or surface temperatures are below 40°F (4°C).
2. If relative humidity is in excess of 95%.
3. If there is a thread of rain 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 **ELASTUFF 101** or topcoats 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.

If any form of dirt, sand, pollution or other contamination is detected on any **ELASTUFF** surface, it is necessary to remove this contamination prior to applying an additional coat. Surfaces should be washed using UCC or other biodegradable cleaner only after the film has fully cured. Rinse thoroughly with clean, fresh water to remove all traces of the chemical cleaner and allow to dry.

Each coat of **ELASTUFF** must be allowed to adequately cure prior to application of any subsequent coats. Initial cure or dry time will normally require several hours, depending on temperature and humidity. Low temperatures and/or humidity will retard cure and additional cure time must be allowed under these conditions.

LIMITATIONS & PRECAUTIONS

ELASTUFF 101, **102** and **103** components are 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. For further storage after opening, containers must be purged with nitrogen gas or dry air and tightly sealed to protect from moisture contamination.

ELASTUFF 101/102/103 is slippery when wet, as are loose roofing granules. Exercise caution when walking on a roof under these conditions. Adequate precautions must be taken when applying **ELASTUFF 101/102/103** to occupied buildings to ensure that air conditioners and ventilation units are turned off and covered to prevent solvent 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.

SAFETY & HANDLING

Solvents in **ELASTUFF 101**, **102** and **103** are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flames 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) 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 regarding safe handling of this material, refer to product Material Safety Data Sheet (MSDS). For specific information on safety requirements, refer to OSHA guidelines.

CLEAN UP

Clean equipment with MEK or Methylene Chloride. Do not leave Methylene Chloride in fluid hoses or pumps for prolonged periods. It can cause swelling and deteri- oration of hoses and corrosion in the pump.

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