

# POLYGUARD UNDERSEAL™

## PROTECTED WALL WATERPROOFING MEMBRANE

### Membrane with Built-In Protection Course

(Formerly known as Underseal™ XT 750 Positive Side Vertical Waterproofing)



#### PRODUCT FEATURES:

**BASIC USES:** *Underseal™ Protected Wall Membrane* is applied to the exterior sides of vertical concrete foundation walls, tunnels, and related applications where waterproofing is critical.

**DESCRIPTION:** *Protected Wall Membrane* is a strong, self adhering sheet membrane with a 20 mil thick, high strength polyethylene backing laminated to a 45 mil thick layer of rubberized asphalt compound. *Protected Wall Membrane* adheres tightly and permanently to concrete. The 20 mil thick backing forms a continuous barrier to water and moisture vapor entry. Total membrane thickness is factory controlled at 65 mils.

**ATTRIBUTES:** *Protected Wall Membrane* allows for faster waterproofing applications by eliminating the step to install an additional protection course prior to backfilling operations. *Protected Wall Membrane* also provides a barrier to termites, methane and radon gas intrusion into the structure.

**LIMITATIONS:** *Protected Wall Membrane* requires mechanical attachment to secure the top edge of the sheet. *Polyguard Termination Bar* is recommended for this application. It is pre-punched for easy and secure attachment. *Protected Wall Membrane* is manufactured to be used on vertical surfaces. However, occasionally it may be used horizontally, consult Polyguard for horizontal recommendations. For any detailing use the *Underseal™ Seal Tape*. *Protected Wall Membrane* should only be installed when application temperatures are above 40°F (4.44°C). This membrane should only be installed on dry surfaces that are not frozen.

**REFERENCES:** *Underseal™ Protected Wall Membrane* qualifies under LEED IAQ Credit 5 - Indoor Chemical and Pollutant Source Control (below grade toxin barrier/reduced pesticide usage). SS3 - Brownfield redevelopment (can be used for pesticide contaminated sites). Can be considered for ID-1 - Innovation in design.

# Polyguard

This Information is based on our best knowledge, but POLYGUARD cannot guarantee the results to be obtained.

POLYGUARD PRODUCTS, INC • ENNIS, TEXAS 75120-0755

PH: 214-515-5000 • 800-541-4994 • FAX: 972-875-9425

Web Site: [www.polyguardproducts.com](http://www.polyguardproducts.com)

ISO 9001  
BUREAU VERITAS  
Certification

LYE  
D'AFRICA

ANAB

Polyguard has been ISO 9000 certified since 1996. Current certifications are:  
- American Natl. Standards Institute  
- Dutch Council for Certification  
- Deutscher Akkreditierungs Rat

## PACKAGING:

	ROLL SIZE	ROLL/CTN.	SQ.FT./ CTN.	LBS. /CTN.	CTNS / PALLET
Underseal™ Protected Wall Membrane	39.36" x 61'	1	200	75	25
Underseal™ Seal Tape	12" x 50'	4	200	75	25
Termination Bar	1" x 50'	4 - Coils	200 Lin Ft.	28	---

**SAFETY:** *Polyguard* liquid adhesives, mastics and liquid membrane products can contain varying amounts of solvents and other substances which could be hazardous if not handled safely. Hazards can include breathing vapors, flammability, skin irritation, and toxicity. It is important that users obtain from *Polyguard* current Material Safety Data Sheets, and follow with care all safety instructions related to the products. Of particular importance is the presence of adequate ventilation, and the absence of excessive heat, flame, or sparks in areas where the products are stored, handled, or applied. **CLOSE CONTAINER AFTER EACH USE. KEEP OUT OF REACH OF CHILDREN.**

## PRODUCT PLACEMENT:

**PREPARATION:** Concrete walls must be cured for 7 days, minimum. Lightweight structural concrete is more porous and retains more water so a 14 day cure is required. Lightweight insulated concrete is **not** an acceptable substrate for this membrane system. Application of the waterproofing membrane before adequate concrete curing may cause excessive concrete outgassing resulting in unacceptable blistering of the membrane. Foundation walls of concrete and block must be smooth and monolithic. Broomed surfaces are not recommended. Surfaces must be free of voids, spalled areas, sharp projections, loose aggregate and form release agents. Concrete compounds containing oil, wax or pigments should not be used. Form releases must be self dissipating type which will not transfer to the concrete. Surface holes or cavities (honeycombs) should be filled and finished flush with non-shrink grout or concrete. Top surfaces of projecting ledges, below grade, except footings, should be finished to a bevel with portland cement mortar. Concrete block walls or brick require a well adhered parge coat before application of membrane. Striking off joints flush with surface is also required. **NEVER** apply Polyguard products to frozen concrete.

## INSTALLATION:

*Vertical and Horizontal Inside corners detailing* – All vertical and horizontal inside corners must be clean and smooth. All inside and base corners must have a 3/4" (19mm) face fillet/cant of **Polyguard LM-95 Liquid Membrane** and cured a minimum of 24 hours prior to application of **Protected Wall Membrane** (do not prime surfaces to receive **LM-95** prior to application). **DO NOT use wood or fiber cant strips.** After application of full sheet, detail all inside and outside corners using a 12" (305mm) wide strip of **Underseal™ Seal Tape**.

*Membrane installation* - All surfaces to receive the **Protected Wall Membrane** must be primed with **650 LT Liquid Adhesive, California Sealant, or Shur-Tac Waterbase Liquid Adhesive** at a minimum rate of 250 - 350 sq. ft. per gallon (6-8.5 m<sup>2</sup>/l). **650 LT Liquid Adhesive, California Sealant, or Shur-Tac Waterbase Liquid Adhesive** must only be applied with a lambs wool roller or brush. **Shur-Tac Waterbase Liquid Adhesive** can be applied with either short nap roller, brush or approved sprayer. Primed surfaces must be reprimed if the substrate is allowed to become dirty or if membrane is not applied within the same working day. The **650 LT Liquid Adhesive, California Sealant Liquid Adhesive, or Shur-Tac Waterbase Liquid Adhesive** must be tacky to touch prior to application of membrane.

Application of **Protected Wall Membrane** should be done in lifts up to 8' (2.4 M). Walls over 8' (2.4 M) should be installed in shingle-fashion starting from the lowest point on the wall and rising to the top of the waterproofing effort. The self-adhering side laps of membrane must be 2 ½" (64mm) wide while end laps must be 6" (152mm) wide and staggered. Roll membrane securely in place with a wall roller. Detail terminations of **Protected Wall Membrane** must be sealed with **Polyguard 650 Mastic** or other approved sealant prior to application of **Polyguard Termination Bar**.

*Pipe penetrations* - If the annular space of pipe through an opening is ½" or less **Polyguard LM-95 Liquid Membrane** may be used to seal penetration. If the annular space of the pipe through the opening exceeds ½" a backer rod and approved urethane sealant must be used to seal the opening. Allow **LM-95** to cure for 24 hours. A patch of **Protected Wall Membrane** extending 4" beyond the opening is required to finish the detail. All membrane patches must be sealed with **Polyguard 650 Mastic**.

Note: If pipes or penetrations are in tight clusters and a more flowable detailing liquid is required LM-95 should be used, contact Polyguard for more details.

**Cracks** – If cracks are more than 1/16" (1.5mm) wide they should be properly sealed in accordance to the sealant manufacturer's instruction and pre-stripped with a 12" (305mm) wide strip of **Protected Wall Membrane**.

**Cold Joints, T-Joints and evident working cracks** - should be properly sealed with joint fillers, waterstop or approved sealant. A 12" (305mm) wide strip of **Underseal™ Seal Tape** should be placed directly over and centered on the crack with the final sheet of **Protected Wall Membrane** applied on top providing double strength at the joint location.

**All expansion joints and control joints** - should be properly sealed with joint fillers, waterstop or approved sealant. An inverted 8" (203 mm) wide strip of **Seal Tape**, covered by a subsequent 12" (305 mm) wide strip of **Seal Tape** should be placed directly over the joint before the final application of **Protected Wall Membrane**. If more than ½" movement is anticipated, an appropriate expansion joint system must be specified. Contact your local Polyguard Representative for recommendations.

Visually inspect membrane for tears, punctures, air blisters and "fishmouths" prior to backfilling or covering with a drainage system. Make repairs by removing all damaged membrane so that only well bonded membrane remains. Clean adjoining membrane and reprime any exposed concrete. After **650 LT Liquid Adhesive** has been allowed to cure to a tacky state, apply a new sheet of the membrane extending at least 6" (152 mm) onto previously applied membrane. **Protected Wall Membrane** should be used for large area patches where the original membrane has been removed. Use the **Seal Tape** for small patch areas that still have the original **Protected Wall Membrane** intact but damaged. Slit all "fishmouths", overlap the pieces, place a patch of **Seal Tape** over the area and roll the patched membrane securely with a wall roller to obtain good adhesion between the membranes. Seal all edges of patch with the **Polyguard 650 Mastic**.

**Polyguard 650 Mastic** should be applied to all permanently exposed terminations. **Polyguard 650 Mastic** should **NEVER** be applied underneath **Polyguard Membranes**.

Protection board is not required with **Protected Wall Membrane** but an optional drainage composite such as the **Polyguard Flow 15 P** drainage composite may be applied over the vertical membrane to provide drainage for the structure.

**Drainage systems** – Polyguard Products provides a complete drainage system featuring the **Polyguard Flow 15 P** in combination with the **Total Flow** perimeter drainage system. Consult your local Polyguard Representative for details on various systems available to provide foundation wall and perimeter drainage.

**COVERAGE:**

Underseal™ Protected Wall Membrane	200 Sq. Ft. per roll
Underseal™ Seal Tape	4 rolls per carton - 200 Sq. Ft. per carton
650 LT Liquid Adhesive or California Sealant	250-350 Sq. Ft. per gallon
Shur-Tac Waterbase Liquid Adhesive	350-400 Sq. Ft. per gallon
650 Mastic	100 L.F./Gal. of 1" wide bead Tubes cover 65 L.F. of ½" bead
LM-95 Liquid Membrane	Flashing 90 mils - 17 Sq. Ft./Gal Filletts: 65-75 L.F./Gal. Fillet plus 6" on horizontal: 14 L.F./Gal.
Flow 15-P Drainage Composite	200 Sq. Ft. per roll
Total Flow Perimeter Drainage	24" X 50' – 100 SF per roll
Total Flow Connectors	Outlets and connectors are available in various sizes
Termination Bar	1" x 50' coil 4 per carton

**MAINTENANCE:** No maintenance is required, if installed according to instructions.

**OWNER INSTRUCTIONS:** This material is offered for sale by POLYGUARD PRODUCTS, INC. only for the expressed purposes as described in this literature. Any use of the products other than taught therein by

POLYGUARD PRODUCTS, INC. shall be the responsibility of the purchaser, and POLYGUARD PRODUCTS, INC. does not warrant, nor will be responsible for any misuses of these products.

POLYGUARD PRODUCTS, as described, herein, are for industrial use ONLY. The application procedures should be performed by workmen who are skilled in the application of materials described herein in accordance with manufacturer specifications.

Material Safety Data sheets and precautionary labels should be read and understood by all user supervisory personnel and employees before using. Consult POLYGUARD PRODUCTS, INC. Material Safety Data Sheets and OSHA regulations for additional safety and health information for the products, described herein. Purchaser is responsible for complying with all applicable Federal, State and local laws and regulations covering use of the product, including waste disposal. This is not a Material Safety Data Sheet and is not to be used as such. POLYGUARD PRODUCTS, INC. has prepared separate Material Safety Data Sheets on each product.

**WARRANTY:** Polyguard Products are warranted to be free of defects in manufacture for five years. Material will be provided at no charge to replace any defective products.

**PRODUCT PROPERTIES:**

PROPERTY	TEST METHOD	ENGLISH	METRIC
Color		Black/White	
Thickness	ASTM-D-1000	.065 in.	1.65
Low temperature flexibility	ASTM D-146 180° bend over 1" mandrel at -25°F.	No effect	No Effect
Resistance to hydrostatic head, minimum	ASTM D-5385	231 ft.	70 m
Elongation, minimum	ASTM D-412	>850%	>600%
Tensile strength, film minimum	ASTM D-412 (Modified Die C)	2000 psi	13.8 MPa
Crack cycling at -10°F (-23°C), 100 cycles	ASTM C-836 Tested @-15°F	No effect	No effect
Puncture resistance, minimum	ASTM E-154 Membrane using 1" (24mm) Rod Lb. (N)	>120 lbs.	>534
Peel adhesion to concrete	ASTM D-903 Lb/in	31.3	5481 N/m
Lap peel adhesion	ASTM D-1876 (modified <sup>1</sup> )	8.0 lb./in. width	1.4
Permeance to water vapor transmission, maximum	ASTM E-96-B US grains/sq.ft./in. HGF (ng/(Pa x s x m <sup>2</sup> ))	.01	1.48x10 <sup>-9</sup>
Water absorption, maximum	ASTM D570	.18%	.18%
Methane Permeability	ASTM D-1434 tested using 99.99% purity methane ft <sup>3</sup> /(ft <sup>3</sup> • hr • psi) (mol/m <sup>3</sup> • s • Pa)	6.3 x 10 <sup>-7</sup>	3.5 x 10 <sup>-13</sup>
Resistance to Penetration by Termites	Texas A&M Method percentage of penetration	0.0 %	0.0%
Resistance to Penetration by Pesticides	ASTM F- 2130 percentage of penetration	0.0 %	0.0%
Resistance to Fungi in Soil	GSA-PBS 07115 - 16 Weeks	No effect	No effect

<sup>1</sup> Test is done using smaller sample than recommended and at room temperature