

## 650 MEMBRANE

Sheet Waterproofing Membrane

## Product Data Sheet

### PRODUCT NAME

650 Membrane

### MANUFACTURER

Polyguard Products, Inc.  
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[www.polyguardproducts.com](http://www.polyguardproducts.com)

### PRODUCT DESCRIPTION

#### BASIC USES

650 Membrane is used on concrete foundation walls, mud slabs, sills and spandrel beams, tunnels, plaza decks, parking garages and related applications where waterproofing is critical. Polyguard 650 Membrane may also be used on wood, concrete masonry (CMU) structures and Insulated Concrete Forms (ICF).

**Balconies:** Please consult Polyguard Balconyguard™ Data Sheet and details for description and installation instructions.

#### PRODUCT FEATURES

- Factory bonding assures 60-mil uniform thickness
- Wide membrane width allows for fast and easy application, with reduced seams on continuous flat surfaces
- Detail Tape available for trim corners, construction joints, and other applications.
- Release film does not tear like paper release
- Extended selvage edge provides asphalt-to-asphalt adhesion at the seam
- White color to help reflect heat

650 Membrane conforms to the following specifications:

- Corps of Engineers CEGS-0711
- AIA MasterSpec Section 07111
- Federal Construction Guide FCGS 07111
- General Service Administration PBS (PCD) 07111
- Department of the Navy NAV FAC TS 07111
- Veterans Administration 14-08-1 Section 07311
- American Railway Engineering Association (AREA) 29-2

#### COMPOSITION & MATERIALS

650 Membrane is a strong, pliable, self-adhesive sheet consisting of a 4 mil cross-laminated, high-density polyethylene (HDPE) backing, bonded to 56 mils of rubberized asphalt waterproofing compound.

650 Membrane is produced in both summer- and winter-grade formulations; use 650 Membrane for temperatures 40°F and rising, use 650 Membrane Winter for temperatures 25°F to 65°F.

#### TECHNICAL DATA

See physical properties table.

### INSTALLATION

#### SURFACE PREPARATION

- Prior to starting work, check that all horizontal surfaces to be waterproofed slope towards drainage or refer to balcony details for zero-slope applications. This material is not designed to be applied in areas where water will pond.
- A smooth monolithic concrete surface is required. Provide a Concrete Surface Profile (CSP) 1 thru 3. Broom surfaces are not recommended.
- Concrete should be dry, frost free and cured a minimum of seven days prior to application of Polyguard membrane and Liquid Adhesive.
- Surface must be free of voids, spalled areas, sharp projections, loose aggregate and form release agents.
- Do not use concrete curing compounds containing oil, wax or pigments.
- Form release agents must be the self-dissipating type which will not transfer to the membrane.
- Surface defects; such as cracks, holes, or cavities; should be filled and finished flush with a Portland cement grout or concrete.
- Finish below-grade (except footings) and the top of projecting ledge surfaces to a beveled or rounded edge.
- Concrete masonry walls or brick require a well-adhered parge coat before application of membrane. Striking off joints flush with surface is also required.
- Clean all surfaces to remove debris, dust and loose stones before application begins. DO NOT apply system to frozen concrete.

#### Penetration/Inside Corner/Fillet/Detail Liquid Membrane

LM-95 LIQUID MEMBRANE: Two-component pail  
DETAIL SEALANT PW™: Single-component tube or pail.

- Apply fillets formed by Detail Sealant PW, LM-95 Liquid Membrane, latex modified cement mortar or epoxy mortar at the base of foundation walls, footings, and inside corners. Provide a 3/4" fillet face.
- DO NOT use wood or fiber cant strips.
- DO NOT prime underneath Detail Sealant PW or LM-95 Liquid Membrane when applied to concrete.
- Cover all inside corners and the base of the foundation wall to footing joint using a 12-inch wide strip of Detail Tape centered along the axis. Press or roll firmly to achieve a complete seal. Detail Sealant PW or LM-95 Liquid Membrane may be substituted for the initial 12-inch wide strip of Detail Tape on inside corners by applying a minimum of 90 mils, 3/4" fillet (cant) 6" vertically and horizontally away from the fillet (cant).
- Treat drains and projections with a second ply of 650 Membrane for a distance of 6" away from drain or projection. Seal all terminations with Detail Sealant PW or LM-95 Liquid Membrane.

- Complete detail work prior to mixing LM-95 Liquid Membrane. Pot life of this product is approximately 60 minutes after mixing at 70°F. Detail Sealant PW™ can also be used, allowing a minimum 2 hours to cure prior to waterproofing membrane application.

### Priming

Stir Liquid Adhesive before use.

- 650 LT Liquid Adhesive, California Sealant or Shur-Tac Liquid Adhesive provides a tacky adhesive surface.
- 650 LT Liquid Adhesive, California Sealant or Shur-Tac Liquid Adhesive should be applied over the entire surface at a rate of 250-350 Sq. Ft. per gallon.
- Re-prime if membrane is not applied to the Liquid Adhesive within the same working day.
- Use brush or sort nap lamb's wool roller for Liquid Adhesive application.
- Liquid Adhesive must be tacky to touch, but not wet, prior to application of 650 Membrane.
- Metal surfaces may require Liquid Adhesive to obtain bond of membrane to substrate.
- Field test to determine adhesion to substrate(s) prior to 650 membrane application.

### Sheet Membrane

Apply Polyguard 650 Membrane in any width up to 48-inches. Side laps must be a minimum of 2-1/2 inches. Staggered end laps should be minimum 6 inches.

When applying Polyguard 650 Membrane on vertical walls, a determined effort must be made to assure complete adhesion of membrane to the primed surface. Use heavy hand pressure while smoothing out the membrane surface as it is applied. Roll installed membrane with a hand roller to ensure complete bond.

On horizontal surfaces, apply membrane from low to high pitch for maximum drainage. Use a minimum 75 lb. linoleum roller to roll membrane immediately after application, with special attention at overlaps and "T-Joints". Seal all end laps with Detail Sealant PW™ or LM-95 Liquid Membrane.

When vertical walls that are more than 8-feet high, which are to be waterproofed, apply 650 Membrane in sections no longer than 8-feet, starting from the lower foundation base and rising to the top with the 6-inches overlap, shingling down on each ply of membrane. Apply Polyguard 650 Membrane on the horizontal footing and terminated with Detail Sealant PW or LM-95 Liquid Membrane. If the footing is smooth and otherwise properly prepared, it is acceptable to extend the 650 Membrane down the exterior face of the footing and terminate with Detail Sealant PW or LM-95 Liquid Membrane. Follow these measures for membrane termination when bottom of interior floor height is:

- Even to 6": Apply 650 Membrane across the top of footer and terminate on vertical face of footer, sealing terminal edge with Detail Sealant PW or LM-95 Liquid Membrane. For a poured-in-place footer, terminate the membrane within 3" of outer edge and finish with a termination (term) bar. Seal term bar, fasteners and

terminal edge of membrane with Detail Sealant PW™ or LM-95 Liquid Membrane.

- 6" – 12": Terminate 650 Membrane on top of footer a minimum of 12 inches, and seal with Detail Sealant PW or LM-95 Liquid Membrane. Vertical face terminations are preferred.
- 12" or higher: Terminate 650 Membrane at vertical-to-horizontal juncture and seal with Detail Sealant PW or LM-95 Liquid Membrane.

Complete the upper terminating edge of Polyguard 650 Membrane applied to a vertical wall over the top of the wall. If terminated on the vertical surface, use a reglet, counter flashing or termination bar. Firmly press the terminated edge with a hand roller, and protect with a troweled bead of Detail Sealant PW or LM-95 Liquid Membrane.

Properly seal static cracks more than 1/16-inch wide on horizontal or vertical surfaces in accordance with the sealant manufacturer's instruction, apply a 12-inch wide strip of 650 Membrane.

Seal cold joints, T-Joints, and evident working cracks, with joint fillers, water-stop or sealant. Place a 12-inch strip of 650 Membrane centered directly over and along the crack. Overlay the 12-inch strip with the 650 Membrane field application, providing double strength at the area of movement.

650 Membrane does not function as an expansion joint material, only as a waterproofing cover for expansion joint materials. All expansion joints should be properly sealed with joint fillers or an expansion joint as primary waterproofing. Then apply an 8" inverted piece of 650 Membrane centered over and across the joint, followed by a 12" strip adhered directly over joint. Full width 650 Membrane should follow. Construction joints, control joints, and cold joints should be sealed with joint fillers and Detail Tape, then apply 650 Membrane over the joint.

### INSPECTION AND REPAIRS

Visually inspect membrane for tears, punctures, air blisters and "fishmouths," prior to water tests, placement of protection board and backfilling. Make repairs by removing all damaged membrane so only well-bonded 650 Membrane remains. Re-prime any exposed concrete. After Liquid Adhesive is dry, apply a new sheet of membrane over the concrete, extending 6-inches onto previously-applied 650 Membrane. Care should be taken to obtain good adhesion between membrane used for repairs and originally-applied 650 Membrane. Seal edges with Detail Sealant PW™ or 650 Mastic.

Slit all "fishmouths," overlap the pieces, place patch over area and roll in place. Puncture air blisters, expel the air, prime and cover with patch. Extend the patch material minimum 6 inches in all directions beyond the repair area, then seal the patch edges with Detail Sealant PW or 650 Mastic.

### MEMBRANE TERMINATION

Apply Detail Sealant PW or LM-95 Liquid Membrane at all terminations at the end of each day's work. Never apply 650 Mastic underneath the Polyguard membrane. Detail Sealant PW should be allowed to cure 2 hours when used under the 650 Membrane.

#### **MEMBRANE PROTECTION/DRAINAGE BOARDS**

Protection board is required over 650 Membrane. Extruded polystyrene is acceptable for vertical applications. Lowflow™ and Polyflow® 15 or 15P drainage boards can be used in place of protection board. Use 1/8-inch Asphalt Protection Board to protect membrane on horizontal surfaces subject to normal construction traffic. Use 1/4-inch Asphalt Protection Board to protect the membrane on horizontal surfaces subject to heavy construction traffic. Apply protection board systems according to the manufacturer's application and guide specifications.

Membrane surfaces should be free of stones and dirt prior to protection board installation. When adhering protection board systems to Polyguard 650 Membrane, use a Polyguard approved adhesive system. Spot adhesion, rather than full adhesion, should be used so that in the event of backfill settlement exerting downward pressure, the protection system will detach from the membrane and slip downwards.

#### **Drainage Board**

Use Polyflow 15 or 15P and Lowflow Protection/Drainage Board with built-in protection for vertical surfaces or Polyflow 18 for horizontal surfaces to expedite water dispersion. Consult Polyguard for specific recommendations.

#### **Drainage Systems**

Perimeter drainage system should be Totalflow with appropriate connectors/outlets.

#### **Backfill Requirements**

No waiting is required before backfilling. Backfill material should be select fill:

- free of large dirt clods, rock, tree roots and debris.
- a type readily compactable upon deposit.
- be compacted per project specifications in 12-inch lifts.
- installed in lifts.
- not have a high water content that would cause the soil to shrink upon drying.

Use mechanical compaction in horizontal layers to achieve these results.

#### **Topping Systems Requirements**

On horizontal areas Polyguard recommends a flood test or appropriate leak detection methods.

#### **STORAGE AND HANDLING**

##### **Material Handling**

Membrane and accessories should be unloaded and stored carefully. Protect cartons and containers from weather,

sparks, flames, excessive heat, cold and lack of ventilation. DO NOT stack membrane material higher than 5' vertically, nor double stack pallets. Store cartons on pallets and cover to prevent water damage. For best results, store membrane above 50°F prior to application.

#### **PRECAUTIONS**

- The Liquid Adhesive is an industrial coating and would be harmful or fatal if swallowed. It is marked as red label from the stand-point of flash point.
- Prohibit flames, sparks, welding and smoking during application.
- Refer to product label for handling, using and storage precautions.
- Solvents could be irritating to the eyes; flush with water and contact physician.
- Avoid prolonged contact with skin and breathing of vapor or spray mist from liquid adhesive. In confined areas, use adequate forced ventilation, fresh air masks, explosion-proof equipment and clean clothing.
- Avoid solvent contact with light bulbs or other high temperature surfaces.

#### **Ultraviolet Protection**

650 Membrane is adversely affected by ultraviolet light. Cover the waterproofing system as soon as possible; DO NOT leave exposed to sunlight for over 30 days.

#### **SAFETY**

MSDS sheets for all Polyguard products can be obtained at our website [www.polyguardproducts.com](http://www.polyguardproducts.com). Call Polyguard Products, Inc. at (214) 515-5000 with questions.

#### **WARRANTY**

We, the manufacturer, warrant only that this product is free of defects, since many factors which affect the results obtained from this product are beyond our control; such as weather, workmanship, equipment utilized and prior condition of the substrate. We will replace, at no charge, proven defective product within twelve (12) months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided. A five (5) year material or system warranty may be available upon request. Contact Polyguard Products, Inc. for further details.

#### **TECHNICAL SERVICES**

Technical assistance, information and Polyguard's products are available through a nationwide network of distributors and architectural representatives, or contact Polyguard Products, Inc.

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PROPERTY	TEST METHOD	TYPICAL VALUE
FILM COLOR		Black/White
MEMBRANE THICKNESS	ASTM D 1000	60 mils
TENSILE STRENGTH - MEMBRANE	ASTM D 412 Modified Die C	325 PSI
TENSILE STRENGTH - FILM	ASTM D 882	6500 PSI
ELONGATION - ULTIMATE FAILURE OF RUBBERIZED ASPHALT	ASTM D 412	600%
PERMEANCE	ASTM E 96 Method B	0.03 grains/sq.ft./hr./in. HGF
CRACK CYCLING	ASTM C 836 Tested @-15°F	No effect
PEEL ADHESION	ASTM D 903	> 12.0 lb./in. width
PEEL ADHESION	ASTM D 1000	10.0 lb./in. width
OVERLAP BOND	ASTM D 1000	8.0 lb./in. width
PLIABILITY	ASTM D 146 180° bend over 1" mandrel at -25°F (-29°C)	No effect
PUNCTURE RESISTANCE - MEMBRANE	ASTM E 154 Blunt Instrument	50 lbs.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385-93	231 ft.
EXPOSURE TO FUNGI IN SOIL	GSA-PBS 07115 (16 weeks)	No effect
WATER ABSORPTION	ASTM D 570	0.1%

PACKAGING	PART NUMBER	UNIT SIZE
<b>Polyguard 650 MEMBRANE</b> (Also available in Winter Grade)	650L48	48" x 50' roll
<b>Polyguard 650 MEMBRANE METRIC</b> (Also available in Winter Grade)	650L1M	39.36" x 61' roll
<b>Required Accessories:</b>		
DETAIL TAPE	650L12	12" x 50' rolls (4/ctn)
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 5 GA	5 gallon pail
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 1 GA	4 - 1 gal pails/ctn
CALIFORNIA SEALANT	CALSEAL5	5 gallon pail
SHUR-TAC LIQUID ADHESIVE	SHUR-TAC5	5 gallon pail
SHUR-TAC LIQUID ADHESIVE	SHUR-TAC1	4 - 1 gal pails/ctn
LM-85 SL	LM85-5	5 gallon pail
LM-95	LM952	2 gallon pail
DETAIL SEALANT PW™ 20 OZ. SAUSAGE	DETAIL SEALANT PW - SAU 20 OZ	20 sausages/ctn
DETAIL SEALANT PW™ 3 GAL. PAIL	DETAIL SEALANT PW - 3 GAL	3 gallon pail
<b>Possible Accessories:</b>		
650 MASTIC <i>a topping material, not for use under a membrane sheet</i>	650-5-MASTIC	5 gallon pail
650 MASTIC <i>a topping material, not for use under a membrane sheet</i>	650-QTUBES-MASTIC	12/30 oz. tubes
<b>Drainage Accessories:</b>		
LOWFLOW™	LOWF	4' x 200' roll
POLYFLOW® 10	POLYFLOW10	4' x 50' roll
POLYFLOW® 15	POLYFLOW15	4' x 50' roll
POLYFLOW® 18	POLYFLOW18	4' x 50' roll
TOTALFLOW™	TOTAL FLOW	24" x 50' roll
TOTALFLOW™ END OUTLET (4")	OUTLET4-UNIV	sold each
TOTALFLOW™ TEE OUTLET (4")	TEE4-UNIV	sold each
QUICK GRIP SPRAY ADHESIVE	PWAQGADHES23	23# canister covers approximately 1000 SF

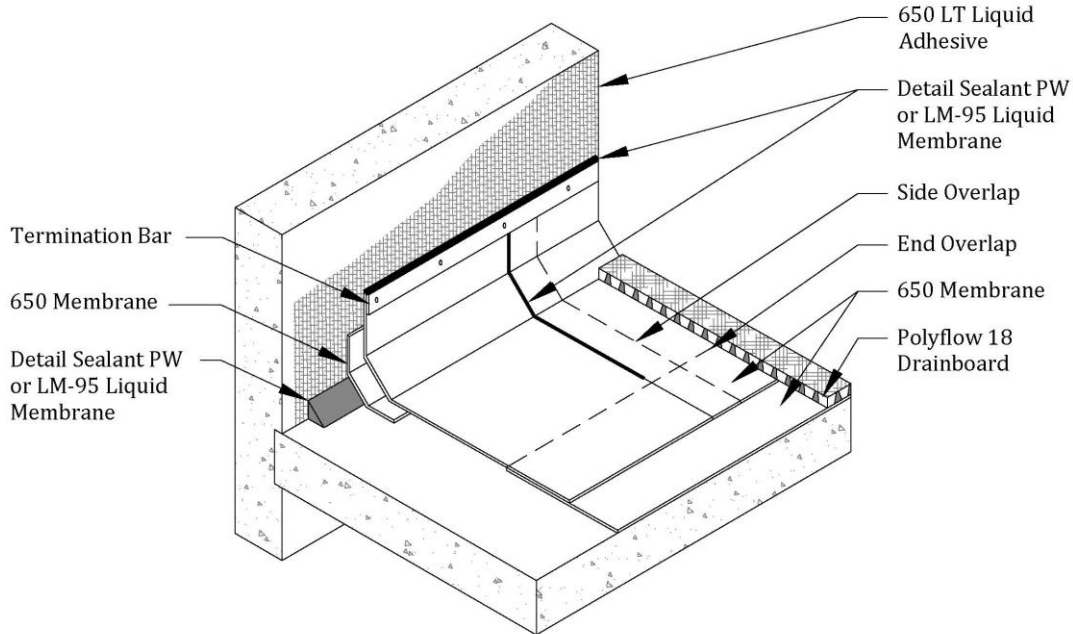
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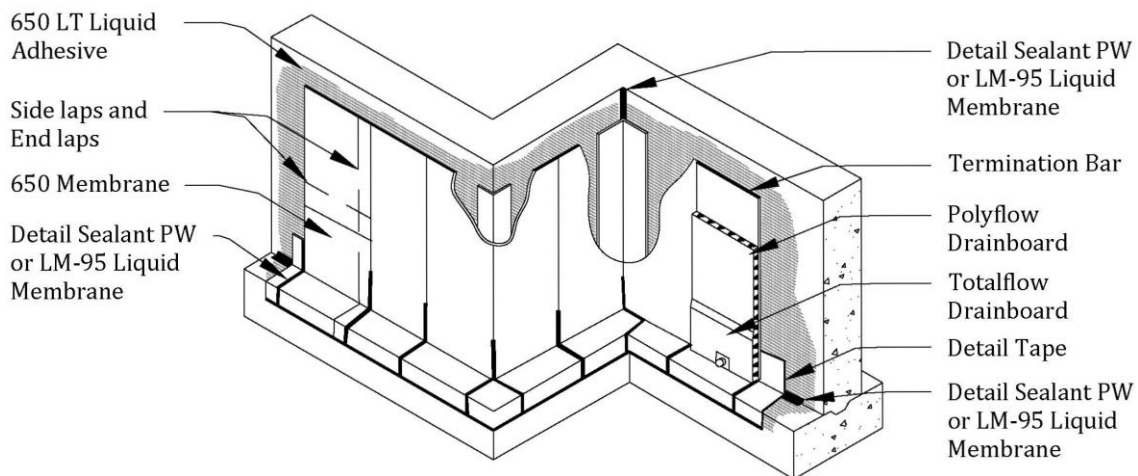


## Common Polyguard® 650 Membrane Applications

These diagrams are not intended to be application instructions, simply illustrations



650 Membrane Horizontal Slab Wall Termination



650 Membrane Vertical Wall Application

**Please Note:** Not intended to be full details. For full application detail on these configurations, see Polyguard details WP3, WP4, WP7, or contact Polyguard Products.