PRODUCT NAME

Waterproofing Membrane, Liquid Adhesive and Mastic

MANUFACTURER

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PRODUCT DESCRIPTION

Basic Use: *POLYGUARD 650 MEMBRANES* are used on concrete for foundation waterproofing, mud slabs, sills and spandrel beams, tunnels, plaza decks, parking garages and related applications where waterproofing is critical. *POLYGUARD MEMBRANES* may also be used on wood, concrete block structures and insulated concrete forms. Wide membrane widths allow fast and easy application to continuous flat surfaces. Narrow width material is available for trim corners, construction joints and other applications. *POLYGUARD MEMBRANES* should be applied according to specifications. Remedial work can offer special problems in the use of waterproofing materials. Specifiers should discuss remedial work with *POLYGUARD* prior to specification and detailing.

POLYGUARD MEMBRANES are cold applied and selfadhered to poured concrete over *POLYGUARD LIQUID ADHESIVES.*

POLYGUARD 650 MASTIC is used with *POLYGUARD SHEET MEMBRANE* at all T-joints and terminations. It is used as a night seal at the top edge of the membrane and to seal the bottom termination edge of the membrane at the base of the foundation.

POLYGUARD LM-95 LIQUID MEMBRANE is used with *POLYGUARD SHEET MEMBRANES* to eliminate double-ply sheet on inside and outside corners. As a fillet on inside corners, *POLYGUARD LM-95 LIQUID MEMBRANE* insures adhesion to concrete in difficult areas to seal. It is also recommended for planter boxes and all slab penetrations.

Substitutions of components to the *POLYGUARD System* may compromise the quality and performance of the installation. Therefore, substitutions are not allowed.

No other use of these materials can be made without prior approval of *POLYGUARD* as to service and method of application.

Limitations: Porous surfaces may adversely affect adhesion.

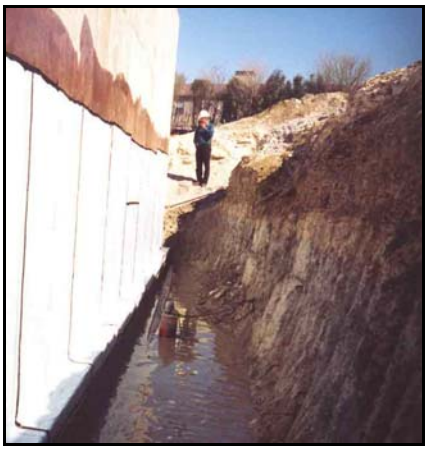
POLYGUARD MEMBRANES are not recommended for pond or tank liners except when applied between two concrete slabs.

Waterproofing of T-beam structures requires placing a 12" *(305 mm)* wide strip of *POLYGUARD MEMBRANE* centered over the joint. *POLYGUARD MEMBRANE* should then be placed over the entire surface.

Caution should be taken to prevent contact of the rubberized asphalt element with any product containing fresh coal tar or coal tar pitch. Sealants and liquid waterproofing products containing polysulfide polymer or silicone may be incompatible. Contact *POLYGUARD* for specific information.

Composition of Materials:

POLYGUARD 650 MEMBRANE is a strong, pliable, self-adhesive sheet consisting of high density polyethylene film bonded to a layer of rubberized asphalt waterproofing compound. Factory bonding assures uniform membrane thickness of 60 mils. *POLYGUARD 650 MEMBRANE* is formulated for low temperature application down to 25°F *(-4°C). MEMBRANE* is wound on a disposable treated release sheet to prevent blocking in the rolls. Standard roll size is 48" x 50' *(1.22m x 15.2m),* and 39.36" x 61' *(1m x 18.59m).*



650 Foundation Wall Application

POLYGUARD 650 LT LIQUID ADHESIVE is a fast drying, high tack rubber-based adhesive in solvent solution used on horizontal and vertical surfaces at temperatures above 25°F *(-4°C).*

TYPICAL PROPERTIES OF POLYGUARD 650 WATERPROOFING MEMBRANES

Property	Test Method	English	*Metric*
Film Color		Blk./White	*Blk./White*
Membrane Thickness	ASTM D 1000 inch *(mm)*	.060	*1.5*
Tensile Strength - Membrane	ASTM D-412 (Modified Die C) PSI *(N/mm2)*	325	*2.24*
Tensile Strength - Film	ASTM D-882 PSI *(N/mm2)*	6500	*44.82*
Elongation - Ultimate failure of rubberized asphalt	ASTM D-412	600%	*600%*
Permeance	ASTM E-96-B grains/sq.ft./hr./in.HGF *(grains/hr/m2)*	.03	*.02*
Cycling Over Crack @ -15°	ASTM C836	No effect	*No effect*
Peel Adhesion	ASTM D-1000 lb/in. width (N/mm)	10.0	*1.75*
Overlap Bond	ASTM D-1000 lb/in. width (N/mm)	8.0	*1.4*
Pliability	ASTM D-146 - 180° bend over 1" mandrel at -25°F *(-32°C)*	No effect	*No effect*
Puncture Resistance - Membrane	ASTM E-154 (Blunt Instrument) lb *(N)*	50	*182*
Resistance to Hydrostatic head	ASTM-D 5385-93 ft *(M)*	231	*70.4*
Exposure to Fungi in Soil	GSA-PBS 07115-16 Weeks	No effect	*No effect*
Water Absorption	ASTM D-570	.1%	*.1%*

POLYGUARD SHUR-TAC WATER-BASE LIQUID ADHESIVE is available where VOC limitations may apply.

POLYGUARD 650 MASTIC is a rubberized asphalt mastic with a low solvent content.

POLYGUARD LM-95 LIQUID MEMBRANE is a two-component elastomeric extended rubber urethane, mixed prior to application. *POLYGUARD LM-95 LIQUID MEMBRANE* is formulated to be compatible with the *POLYGUARD* rubberized asphalt compound.

Applicable Standards: *POLYGUARD 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

TECHNICAL DATA

Typical properties of *POLYGUARD 650 MEMBRANE* are shown in the table below.

INSTALLATION

Material Storage: Membrane and accessories should be unloaded and stored carefully. Cartons and containers must be protected from weather, sparks, flames, excessive heat, cold and lack of ventilation. DO NOT stack membrane material higher than 5' *(1.5m)* vertically, nor double stack pallets. Cartons should be stored on pallets and covered to prevent water damage. For best results, membrane should be stored 50-75°F prior to application.

Application Temperatures: Apply *POLYGUARD 650 LT LIQUID ADHESIVE* on both vertical and horizontal surfaces at temperatures above 25°F *(-4°C).*

Apply *POLYGUARD SHUR-TAC WATERBASE LIQUID ADHESIVE* by sprayer, when temperature is 25°F *(-4°C)* and rising. At this temperature the weather conditions and substrate must be dry.

Apply POLYGUARD 650 MEMBRANE at temperatures above 25°F *(-4°C).*

Preparatory Work: Prior to starting work, check that all horizontal surfaces to be waterproofed slope towards drainage. This material is not designed to be applied in areas where water will pond. *Surface Preparation:* A smooth monolithic concrete surface is required. 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. Concrete curing compounds containing oil, wax or pigments should not be used. 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. 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.

Clean all surfaces to remove debris, dust and loose stones before application begins. DO NOT ap*ply LIQUID ADHESIVE or* MEMBRANE to frozen concrete.

Priming: Stir *LIQUID ADHESIVE* before use. *POLYGUARD 650 LT LIQUID ADHESIVE* should be applied over the entire surface at a rate of 250-350 square feet, per gallon *(6-8.5 m^2/l).* Primed surfaces must be re-primed if membrane is not applied to the *LIQUID ADHESIVE* within the same working day. Use brush or lambs wool roller for application. *LIQUID ADHESIVE* must be dry prior to application of membrane. *POLYGUARD 650 LT LIQUID ADHESIVE* retains a tacky adhesive surface.

Primed surfaces should be immediately covered or protected to prevent contamination occurring on the *LIQUID ADHESIVE*. Metal surfaces may require *LIQUID ADHESIVE* to obtain bond of membrane to substrate. Field test to determine adhesion level. Surface must be free of contaminates.

Liquid Membrane: Apply fillets formed by *POLYGUARD LM-95 LIQUID MEMBRANE*, latex modified cement mortar or epoxy mortar at the base of foundation walls and footings. DO NOT use wood or fiber cant strips. Fillets or *POLYGUARD LM-95 LIQUID MEMBRANE* should be applied to provide a 3/4" *(19mm)* face and extend 6" *(152mm)* vertically and horizontally, 90 mils *(2.286 mm).*

DO NOT prime underneath *POLYGUARD LM-95 LIQUID MEMBRANE*.

Cover all corners, joints and the base of the foundation wall and footing using a 12" *(305 mm)* wide strip of membrane centered along the axis. Press or roll firmly to achieve a complete seal. Apply a second ply of membrane. *POLYGUARD LM-95 LIQUID MEMBRANE* may be substituted for the initial 12" *(305 mm)* wide membrane strip on inside corners.

Pretreat inside corners with *POLYGUARD LM-95 LIQUID MEMBRANE* 6" *(152 mm)* in each direction from corners, and form a fillet with *POLYGUARD LM-95 LIQUID MEMBRANE* and apply a 12" *(305 mm)* strip of membrane centered on the corners.

POLYGUARD LM-95 LIQUID MEMBRANE may be substituted for the initial layer of sheet membrane on drains and protrusions by applying a 90 mil *(2.286 mm)* thick layer from the drain or protrusion out and extending 6" *(152 mm)* underneath sheet membrane. Apply *POLYGUARD LM-95 LIQUID MEMBRANE* vertically to be level with height of wearing surface. Flash drains and projections with a second ply of *MEMBRANE* for a distance of 6" *(152 mm)* from drain or projection. Seal all terminations with *POLYGUARD 650 MASTIC*.

Two coats, 45 mils *(1.1430 mm)* each, of *POLYGUARD LM-95 LIQUID MEMBRANE* should be used for waterproofing irregular shapes or circular structures such as planter boxes.

Detail work should be completed prior to mixing *POLYGUARD LM-95 LIQUID MEMBRANE*. Pot life of this product is approximately 60 minutes after mixing at 70°F *(21°C).*

Sheet Membranes:

POLYGUARD MEMBRANE can be applied in any width up to 48" *(1.2 M)* wide. Side laps must be a minimum of 2-1/2" *(64 mm).* Staggered end laps should be minimum 6" *(152 mm).*

When applying *POLYGUARD MEMBRANE* on vertical walls, a determined effort must be made to assure complete adhesion of membrane to the primed surface. Hand roll over lap seams with a wall type narrow roller. Use heavy hand pressure while smoothing out the membrane surface, as it is applied.

On horizontal surfaces, apply membrane from low to high pitch for maximum drainage. Use linoleum

roller or water filled garden roller, covered with two plies of indoor-outdoor carpet to roll membrane immediately after application, with special attention at overlaps and "T-Joint". Seal all end laps with *POLYGUARD 650 MASTIC*.

It is recommended that when vertical sections of more than 8' *(2.4 M)* are to be waterproofed, membrane should be applied in sections no longer than 8' *(2.4 M)*, starting from the lower foundation base and rising to the top with the 6" *(152 mm)* overlap, shingling down on each ply of membrane. *POLYGUARD MEMBRANE* should be applied over the edge of the footing at the foundation base.

The upper terminating edge of *POLYGUARD MEMBRANE* applied to a vertical wall should be completed over the top of the wall. If terminated in the vertical surface, such termination should be at a reglet or counter flashing. The terminated edge should be pressed firmly with a silicone roller and protected with a troweled bead of *POLYGUARD 650 MASTIC.*

Cracks of more than 1/16" *(1.5 mm)* on horizontal or vertical surfaces should be properly sealed in accordance to sealant manufacturer's instruction and prestripped with a 12" *(305 mm)* wide strip of membrane.

Cold joints, T-Joints and evident working cracks should be properly sealed with joint fillers, waterstop or sealant. A 12" *(305 mm)* strip should be placed directly over and centered in the crack with the final applied membrane providing double strength at the area of movement.

All expansion joints, contraction joints and control joints should be properly sealed with joint fillers, waterstop or sealant. An inverted 8" *(203 mm)* strip, covered by a 12" *(305 mm)* strip, shall be placed directly over the joint, before the final membrane application.

All intersections must be reinforced, including footings as well as projections, such as drains, pipe, conduit, etc.

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 that only well bonded membrane remains. Reprime any exposed concrete. After *LIQUID ADHESIVE* is dry, apply a new sheet of membrane over the concrete, extending 6" *(152 mm)* onto previously applied membrane. Care should be taken to obtain good adhesion between membrane used for repairs and originally applied membrane.

Slit all "fishmouths", overlap the pieces, place patch over area and roll or press in place. Puncture air blisters, expel the air, prime and cover with patch. Seal edges with *POLYGUARD 650 MASTIC.*

Mastic Application: *POLYGUARD 650 MASTIC* should be applied at all terminations at the end of each day's work. *POLYGUARD 650 MASTIC* should never be applied underneath the *POLYGUARD MEMBRANE*.

Flashing: Finish vertical wall membrane on top edge under flashing or in reglet. Seal T-Joints and terminations with a toweled bead of *POLYGUARD 650 MASTIC*.

Ultraviolet Protection:
POLYGUARD 650 MEMBRANE can be adversely affected by ultraviolet light. The waterproofing system must be covered as soon as possible and not left exposed to sunlight for over 30 days.

Testing: On horizontal areas, a 24 hour flood test with minimum of 2" *(51 mm)* head of water is recommended. Leaks in membrane must be repaired before any slabs or wearing surfaces are applied. Before flooding, make sure structure will withstand the dead load.

Membrane Protection: Protection board is required over *POLYGUARD 650 MEMBRANE*. Extruded polystyrene is actable for vertical applications. *POLYGUARD LOWFLOW*™ and *POLYGUARD FLOW 15-P* as well as some other drainage boards have built in protection which is adequate for vertical surfaces. *POLYGUARD 1/8" (3 mm) ASPHALT PROTECTION BOARD* should be used to protect membrane on horizontal surfaces subject to normal construction traffic. *POLYGUARD 1/4" (6 mm) ASPHALT PROTECTION BOARD* should be used to protect the membrane on horizontal surfaces subject to heavy construction traffic. Protection board systems are to be applied according to the manufacturer's application and guide specifications.

Protection board should be installed over the membrane the same day the membrane is installed or immediately after a 24 hour flood test. If flood testing is not going to be performed the same day membrane is applied, a temporary covering should be applied over the membrane to protect it from damage by traffic, other trades, and to prevent outgassing of moisture in the concrete under the membrane that is exposed to direct sunlight. Membrane left exposed on top of foundation walls or parapets should be covered with weather resistant flashing.

Membrane surfaces should be free of stones and dirt prior to protection board installation.

When adhering protection board systems to *POLYGYARD 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.

The use of chairs with rolled feet or plastic tips are required to prevent holes being punctured in the protection board and membrane surface. Wire mesh must be supported to prevent the concrete weight from pushing the cut ends of the mesh into the membrane.

Drainage Board: *POLYGUARD's FLOW 15-P* and *LOWFLOW*™ *PROTECTION / DRAINAGE BOARD* with built in protection for vertical surfaces or *POLYGUARD 18-H* for horizontal surfaces are used to expedite water dispersion. Most require a protection course or slip sheet to be placed before application over *POLYGUARD 650 MEMBRANE*.

Consult *POLYGUARD* for specific recommendations.

Drainage: Drainage systems should be designed with pipe sizes large enough to prevent water accumulation against the foundation. Perforated pipe should be covered with fabric to prevent fines or dirt from plugging perforations. Pipe should be of sufficient strength to prevent deformation due to soil weight or movement. Consideration should be given to provide drain outlets to the interior of the building when the water table level is above the base of the waterproofing membrane.

Backfill: No waiting is required before backfilling. Backfill material should be dry sand or dry soil dirt as following:

- Fill material must be free of large dirt clods, rock, tree roots and debris.
- Backfill should be of a type readily compactable upon deposit.
- It should be placed against the protection board in 6" *(152mm)* to 8" *(203mm)* compacted layers to avoid vertical settlement.
- Backfill should not have a high water content that would cause the soil to shrink upon drying.
- Mechanical compaction in horizontal layers should be used to achieve these results if necessary.

- Avoid sharp impact to the protection board when backfilling.

Topping Systems: Topping, such as concrete, soil or pavers, may be used to finish a horizontal application. Multi level drainage systems are recommended at both topping and POLYGUARD 650 MEMBRANE elevations.

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.

CLOSE CONTAINER AFTER EACH USE. KEEP OUT OF REACH OF CHILDREN.

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 the manufacturer specifications.

Material Safety Data: All 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 or 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.

AVAILIBILITY AND COST

Contact *POLYGUARD PRODUCTS Inc.,* for further information.

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 product.

MAINTENANCE

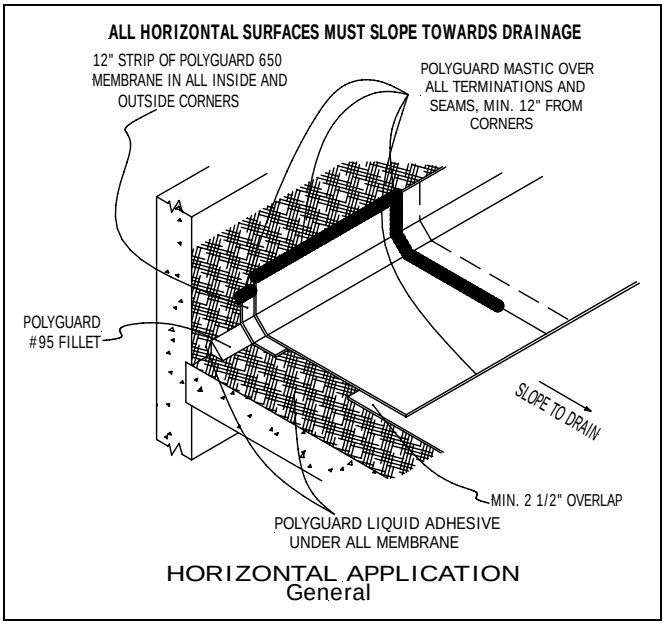
None required, if installed according to instructions.

TECHNICAL SERVICES

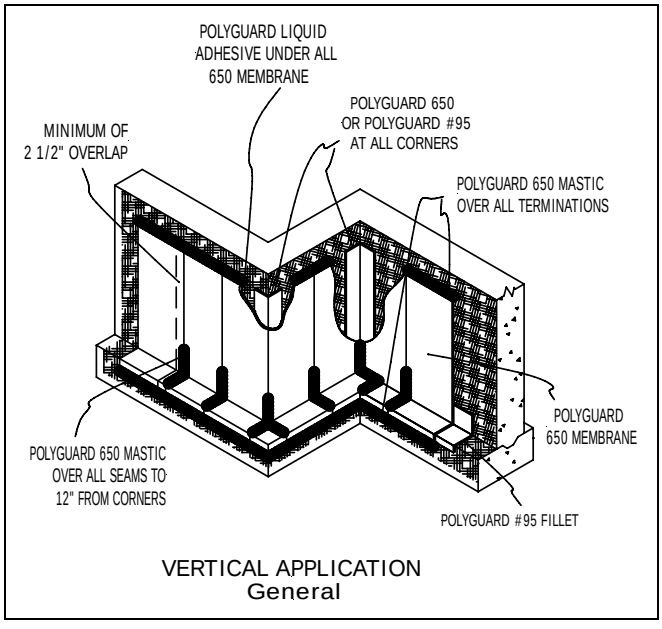
Technical assistance and information are available from any *POLYGUARD* dealer, or contact *POLYGUARD PRODUCTS, INC.*

FILING SYSTEMS

POLYGUARD brochures are available from *POLYGUARD* dealers, website, or the manufacturer.



HORIZONTAL APPLICATION
General



VERTICAL APPLICATION
General