

# POLYGUARD 665 MEMBRANE SPECIFICATION FOR WATERPROOFING BRIDGE DECKS

## PART 1 - GENERAL

### DESCRIPTION:

The work in this section includes requirements for membrane waterproofing of highway bridge decks.

Related work specified elsewhere:

- Concrete Work: Section
- Prefabricated Expansion Joints: Section
- Sealants and Caulking: Section
- Drains: Section

### SUBMITTALS:

- Submit the following samples for approval:
  - 1) One square foot sample of **POLYGUARD 665 MEMBRANE**
  - 2) One pint of **POLYGUARD LIQUID ADHESIVE** (*which is applicable for use on the project*).
- Submit copies of manufacturer's product description, product usage, and product application for all materials proposed for use on the project.

### DELIVERY AND HANDLING:

**Delivery:** Materials should be delivered in manufacturer's original, unopened packaging with labels attached.

**Handling:** All materials must be handled in a manner to prevent damage. Any material damaged must be removed from the project area and replaced with new material.

**POLYGUARD** products must be handled in accordance with **POLYGUARD PRODUCTS, INC.** guidelines. **LIQUID ADHESIVES** and **MASTICS** are solvent based liquids and are flammable. No open flames, sparks, or smoking should be allowed in the immediate area.

### JOB CONDITIONS:

**POLYGUARD WATERPROOFING MATERIALS** should only be applied under proper weather conditions. **665 MEMBRANE** should be applied at temperatures of 40° and above.

All concrete must be cured a minimum of seven days and be dry to the touch before applying **POLYGUARD WATERPROOFING**. Lightweight structural concrete must be dried a minimum of 14 days prior to waterproofing application.

All drains, curbs, and protrusions must be in place before waterproofing application begins.

Surfaces to receive the **POLYGUARD WATERPROOFING SYSTEM** materials must be smooth, dry, and free of dust, dirt, loose aggregate or other foreign materials. Surfaces must be free of voids, spalled areas, loose aggregate, and sharp protrusions. Surfaces must be free of contaminants from release agents that contain wax, oil, silicone, or pigment.

## PART 2 - PRODUCTS

### MATERIALS:

**POLYGUARD 665 WATERPROOFING MEMBRANE** is self-adhering membrane consisting of rubberized asphalt laminated to polypropylene mesh to form a minimum 65 mil membrane. **665 MEMBRANE** is 4 feet wide by 50 feet long. The membrane is delivered on a silicone release liner. The release liner is removed prior to application of the membrane. **665 MEMBRANE** is completely cold-applied and requires no special adhesives or heating equipment.

# Polyguard

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

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

**665 MEMBRANE** will meet the following physical properties:

PROPERTY/UNIT	TEST METHOD	TYPICAL VALUE
Thickness		65 mils
Tensile Strength	ASTM D 882 ( <i>Method A</i> )	90 lbs./in. Width
Puncture Resistance	ASTM E 154	200 lbs.
Permeance - Perms	ASTM E 96 ( <i>Method B</i> )	0.1 max
Elongation	ASTM D 4632	15%
Pliability at low temperatures (0°F., -15°F., -25°F)*	ASTM D 146 ( <i>Modified</i> )	No cracks in fabric or rubberized asphalt
* <b>POLYGUARD 665</b> is manufactured to the specifications of D.O.T's. Most material shipped meets a -15° specification. However, if an agency has specified a higher or lower pliability specification, the product will be produced with a formulation meeting those requirements.		

## INSTALLATION:

### PRIMING:

- 1) Never apply **Polyguard Liquid Adhesive** to wet or frozen surfaces.
- 2) When substrate is ready, apply **Polyguard Liquid Adhesive** at a rate of 400 square feet per gallon (250 square feet on milled surfaces) using lambswool roller, brush, squeegee, or spray apparatus.
- 3) Allow primer to dry until tack-free.
- 4) Prime only the area which can be covered with membrane in the same working day. Areas primed and not covered with membrane within 24 hours should be reprimed. Smoothness and porosity of the concrete will effect coverage rate.
- 5) Do not apply liquid adhesive at heavier rates than recommended. Excessive material build-up will delay drying and membrane application.

### MEMBRANE INSTALLATION - HORIZONTAL SURFACES:

- 1) **POLYGUARD MEMBRANE** should be applied to the primed surface starting at the low point and working to the high point in a shingling technique.
- 2) Side laps should be a minimum of 2 ½ inches and end laps a minimum of 6 inches.
- 3) At parapet walls, apply membrane to extend vertically a minimum of 1" - 2" up the parapet wall. Press that portion of the membrane at the parapet/deck interface firmly into the concrete, with the objective being to eliminate any voids or tented areas. The horizontal edge of the membrane on the parapet wall is to receive a bead of **Polyguard 650 Mastic**. This mastic bead should then be tooled firmly along the edge so that a continuous edge seal is created.
- 4) At drains, apply a double layer of **665 MEMBRANE**.
- 5) Inadequately lapped seams and damaged areas should be patched with small sections of **POLYGUARD MEMBRANE**. The patch area should extend at least 6 inches beyond the defect.
- 6) Fishmouths and severe wrinkles should be slit, flaps overlapped, and repaired as above.
- 7) Double ply all non-working joints or cracks over 3/16" width with a 6" to 12" piece of **665 MEMBRANE**.
- 8) Perform any additional detailing as required by D.O.T. specifications.
- 9) Limited construction traffic can be allowed on the membrane prior to paving. Especially when membrane has been installed on milled surfaces, this will help insure adhesion and minimize air pockets between the substrate and membrane. However, any bridge traffic should be kept to lower than normal speeds because the polypropylene backing of this membrane, in the event of rain, can be more slippery than a normal pavement surface.
- 10) A tack coat of asphalt or asphalt emulsion is applied prior to the bituminous overlay.
- 11) It is recommended that the bituminous overlay be not less than 2" in thickness and not above 300° at time of application.
- 12) The use of vibratory rollers over Polyguard membrane is not recommended.

**Limitations:** If a Superpave overlay requiring higher paving temperatures than 300°F is specified, contact Polyguard for technical advice. Polypropylene backings are subject to high shrinkage at over 300°F