

## INSULRAP™ 50

A LAMINATED DIRECT BURIAL VAPOR BARRIER MEMBRANE



**INSULRAP 50 and I-50-SJ** ARE the premier direct burial membranes in the insulation market as a waterproofing and vapor-proofing coating. **Insulrap 50**, is a "peel and stick" protective membrane, is a rubberized asphalt laminated to a 10 mil white scrim reinforced polyethylene film, but also available with smooth polyethylene film. Using "cigarette wrap" application, **Insulrap** can be shop applied or field applied.

### APPROVALS

- Approved by DuPont Company engineering specification SN 700 Code 741.
- Approved by Dow Chemical Company global engineering specification G158-4005-00.
- Approved by Cell-U-Foam *Specification for Cellular Glass Insulation in Underground Direct Burial Application* - June 1996 and July 2002.
- Laminated membranes are recommended in Dow Chemical Company's publication *TRYMER Pipe Insulation - Your Guide to Features, Installation, and Use* - 1997 edition.

### ADVANTAGES

- Factory controlled product thickness is uniform. Jobsite labor does not control the thickness.
- Speeds up the project - no cure time.
- Significant labor savings from speed and elimination of cleanup.
- Maximum resistance to water and vapor transmission.
- In either warm or cold conditions, the membrane will stretch and flex to accommodate movement of the substrate.
- Resistance to chemicals, acids, and alkalis.
- 25/50 flame/smoke rating.

## REPRESENTATIVE PROJECTS

<b>Auburn University</b>	<i>Auburn, AL</i>	Chilled water lines.
<b>Conoco</b>	<i>Ponca City, OK</i>	10,000 lineal feet underground chilled water line.
<b>Dow Chemical Co.</b>	<i>Freeport, TX</i>	Above ground vapor barrier application under aluminum and CPVC jacket.
<b>Dow Chemical Co.</b>	<i>Hanging Rock, OH</i>	Underground process piping.
<b>DuPont, Ingleside Plant</b>	<i>Corpus Christi, TX</i>	2,000 lineal feet pipe.
<b>LA State University</b>	<i>Baton Rouge, LA</i>	2,000 lineal feet chilled water loop.
<b>NASA</b>	<i>Titusville, FL</i>	Underground chilled water at hanger AO and the Orbital Modification Refurbished Facility at Cape Canaveral Air Force Station.
<b>Norenc Corporation</b>	<i>St. Paul, MN</i>	This 5-1/2 mile long, 18" diameter cellular glass insulated steam line installed in 1981, is the longest underground high temperature steam line serving a single customer in the U.S.
<b>NRC</b>	<i>Oak Ridge, TN</i>	Underground chilled water lines.
<b>Pinellas County School Board</b>	<i>Clearwater, FL</i>	Over 20,000 lineal feet of chilled water lines throughout the school system.
<b>Sea World</b>	<i>Orlando, FL</i>	2,500 lineal feet of chilled brine and chilled water at the Shamu stadium.
<b>Sun Refining</b>	<i>Tulsa, OK</i>	Vapor barrier under aluminum jacket on MEK line. Replaced fab and mastic.
<b>Union Pacific Resource Co.</b>	<i>Brookeland, TX</i>	Vapor barrier on vessel equipment and 5,000 lineal ft. of pipe.
<b>Veterans Administration Hospital</b>	<i>Johnson City, TX</i>	Heating hot water and chilled water lines.

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



Polyguard is ISO 9001 certified since 1996.

TECHNICAL DATA:			
NOMINAL PROPERTIES:	TEST METHOD:	TYPICAL RESULTS:	METRIC:
Total Thickness	ASTM D 1000	0.050"	1.27 mm
Film Thickness	ASTM D 1000	0.010"	0.254mm
Flame Spread Index	ASTM E 84	4	
Smoke Index	ASTM E 84	50	
Overlap Adhesion	ASTM D 1000	>12.0 lb/in width	2.10 N/mm
Ultimate Elongation (%)	ASTM D 882 (MODIFIED)	>400%	>400%
Water Vapor Transmission (perms @ 77°F)	ASTM E 96 PROCEDURE B	U.S. Perms 0.015	0.85 g/Pa-s-m <sup>2</sup>
Low Temperature Pliability	ASTM D 146	No Cracks at -15°F	No Cracks at -25°C
Puncture Resistance	ASTM 154	>40 lbs	18.1 kg

**MATERIALS:** *INSULRAP™ 50 or I-50-SJ* is a self-adhesive membrane for waterproofing and vapor-retarding. *Low Temperature Activator* is used to improve low temperature adhesion or adhesion to porous or dusty insulation surfaces. *INSULSHIELD™* is a rock shield material designed to protect buried systems from rock or other backfill damage. Large pipe sizes require *Outerwrap* to prevent soil stress.

**HANDLING OF MATERIALS:** *Polyguard* materials should be moved and stored so as to prevent injury to the packages. Materials should be stored out of the weather. Recommended storage temperature is 50°F to 80°F.

**SURFACE PREPARATION:** Material should be banded according to insulation manufacturer's instruction. Surface should be clear of dust, frost, moisture, and foreign matter. In cool temperatures (below 50°F) *Low Temperature Activator* or a heat gun should be used to improve adhesion. Surface temperature of the insulation should not exceed 150°F. Butt joints and longitudinal seams of insulation should be inspected for gaps so that excess heat from hot lines is not permitted to escape to the membrane.

**APPLICATION:** *INSULRAP 50 or I-50-SJ* can be applied by cigarette wrapping. The silicone treated release sheet should be removed immediately before application. Apply the adhesive surface to the dry insulation. Cigarette wrap applications should overlap a minimum 3" onto itself. If membrane is butted onto itself, cigarette wrapped 4" butt strips should be applied over the joints. Check all seams carefully to ensure waterproofing integrity at overlaps. Use pressure from a roller or otherwise to insure that the lap is well conformed to the surface underneath. In cooler weather, *Polyguard Liquid Activator*, a heat gun, or hair dryer can be used to insure adhesion. Lightly passing the heat source over the adhesive face of the membrane and substrate can greatly improve "grab" in marginal application conditions. *INSULRAP 50 or I-50-SJ* can be used for fitting elbows & joints. 4" width *INSULRAP 50 or I-50-SJ* in a spiral wrap configuration is recommended for insulated pipe outside diameters up to 16". For outside diameters >16", 6" or 12" width *INSULRAP 50 or I-50-SJ* should be used. A 50% overlap should be used at all seams.

**COVERING:** *INSULRAP 50 or I-50-SJ* should not be exposed to ultraviolet light for over 7 days. It should either be covered with jacketing or *INSULSHIELD™*, or should be backfilled promptly.

**DRAINAGE:** The insulated pipe should be installed above the water table level on a gravel base with proper drainage using sand or a geotextile drain system provided by the architect or engineer. *INSULRAP 50 or I-50-SJ* is not designed for long term immersion in water.

**APPURTENANCE DESIGN:** Consult the engineer's application instructions for recommendations on wall penetrations (existing and new construction), insulation supports, line guide, line anchor, expansion-contraction joints, expansion chamber, and ditch configurations for drainage.

**LIMITATIONS:** *INSULRAP 50 or I-50-SJ* is a waterproofing or vapor-proofing membrane only. **DO NOT USE AS A SUBSTITUTE FOR BANDING OR MECHANICAL FASTENING OF INSULATION.** Refer to insulation manufacturers application instructions. The adhesive surface on *I-50* loses a portion of its initial "tack" in cooler weather. Follow instructions above for surface preparation and application to insure maximum adhesion. Insulation surface temperature should be within normal engineering and safety standards (below 120°F) during operation of the system.

**KEEP OUT OF REACH OF CHILDREN**

This material is offered for sale by *POLYGUARD PRODUCTS* only for the expressed purposes as described in this literature. Any use of the products described in this literature for purposes other than taught therein by *POLYGUARD PRODUCTS* shall be the responsibility of the purchaser and *POLYGUARD PRODUCTS* does not warrant nor will be responsible for any misuse of these products. . **Read ALL MSDS's prior to installation.**