Paraseal® W/GM

Waterproofing and Gas

Product Description

Paraseal GM is a composite-sheet waterproofing membrane that combines a thick layer of high density polyethylene (HDPE) with expandable quality granular bentonite. Paraseal GM is manufactured to control thickness of 150-200 mils (3.75-5.0mm) with 1 lb/ft^2 bentonite and is installed as a system with Para JT Tape to form a superior dual membrane barrier to both water and aliphatic gases. It is not a containment membrane.

Basic Uses

Paraseal GM is used with Para JT Tape to waterproof and/or gasproof structures below grade. The Para JT Tape is installed within the Paraseal GM membrane sheet overlaps where it remains protected while providing a flexible, gasproof and waterproof seal. This dual membrane system exhibits outstanding performance in withstanding conditions of high water head and/ or aliphatic gases. The Paraseal GM membrane system is excellent for use on poured concrete or block masonry foundation walls and it may be installed prior to the concrete pour such as on lagging, under floor slabs, in elevator pits, etc.

Packaging

4' x 24' (1.2mx7.3m) standard rolls.

Installation

Examine all surfaces prior to starting application. Dust may be pre-sent however, all debris must be removed. Standing water and sharp protrusions over 1/4" (6.4mm) must be removed. Installation may proceed on uncured, damp or frozen surfaces. Paraseal GM is compatible with all currently used release agents. For installations under slab, prepare grade to smooth substrate with 85 proctor minimum. If compacted granular base is used, place 6 to 10 mil polyethylene sheet. Install preformed or site constructed boots around all penetrations prior to membrane installation.

General Notes

Paraseal GM is provided having a removable lap protector tape installed beneath the bentonite layer along the perimeter edges. This lap protector tape must be removed at the jobsite to clean the edges of the membrane in preparation for insertion of the Para JT Tape. Clean HDPE with solvent. The Para JT Tape is always installed according to instructions in the Para JT Tape data sheet. It is advised that the Para JT Tape be fully in place on any membrane sheet prior to its overlapping, or being overlapped by, another Paraseal GM membrane sheet. All overlapped seams are roll-pressed using a hand-held metal seam roller to effect a complete seal and to fuse the membrane sheets together. Batten-strips are field fabricated to repair slits made in the installed membrane that may occur at penetrations. A batten-strip is fabricated by covering one face of a 6" (15.2cm) wide strip of HDPE liner with tightly abutting, side-by-side strips of Para JT Tape.

Note: Refer to manufacturer specifications and details which describe further techniques and specific requirements for vertical and underfloor installations.

Backfilled Walls

Paraseal GM is installed with the HDPE side facing the installer (bentonite side against the structure). Pour 2" (5.1cm) cove of Paragranular, Paramastic or TREMproof 250GC into horizontal-to-vertical junctures (such as footing-to-wall) prior to covering with membrane. Inside vertical corners receive a cove of Paramastic, TREMproof 201/60T or TREMproof 250GC prior to covering with membrane. Paraseal GM membrane may be installed in horizontal or vertical lifts by nailing along seams which are then overlapped with a subsequent sheet. All nail heads must be covered completely with Para JT Tape. Penetrations are detailed using Para JT Tape that has been removed from its paper backing and folded onto itself several times to be used like putty, firmly hand-pressed into place against the HDPE.

Under Floor Slab

Place into position an unrolled 24' piece (7.3m) of Paraseal GM membrane. With Para JT Tape fully in place and protected by its paper backing, position overlapping membrane sheet to overlap 2" (5.1cm). A 6" Para Stick-n-Dry strip should be installed over all lap seams. Solvent wipe clean HDPE surfaces within the overlap area. Remove the paper backing from the Para JT Tape within the overlap and press the seams together. If placed directly over prepared grade, the membrane must be protected against puncture by placing protective pads beneath the rebar chairs. Just prior to the concrete placement, inspect and patch any damage to the installed membrane. Place concrete as soon as possible after membrane installation and protect bentonite surfaces from rain until covered with concrete. Avoid putting stakes through the membrane.

Protection

The Paraseal GM dual waterproofing system has a PUNCTURE RESISTANCE OF 169lb point load (76.6 kg) and does not require an additional protection course for most applications. For special applications, contact your Tremco Representative for details.

Storage

Protect from moisture. Store on skid or pallet, cover with poly-ethylene or tarp.

Availability

Immediately available from your local Tremco Field Representative, Tremco Distributor or Tremco Warehouse.

Limitations

- Do not apply in standing water or over snow.
- If groundwater is brackish, Saltwater Grade Paraseal GM may be required. Paraseal products require compaction/ confinement to be effective. A minimum 24 psf confinement is required. Contact your local representative or technical services for more information.

Warranty

Tremco warrants its Paraseal Membranes to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Tremco Paraseal Membranes. Tremco's sole obligation shall be, at its option, to replace, or refund the purchase of the quantity of Tremco Paraseal Membrane proved to be defective and Tremco shall not be liable for any loss or damage.

TYPICAL PHYSICAL PROPERTIES

Physical Properties	Value	Test Method
Colors gray/black or gray/transparent white		
Tensile Strength: Membrane	4,000 psi (27.6MPa)	ASTM-D412
Resistance to microorganisms (bacteria, fungi, mold, yeast)	unaffected ASTM D4068	
Elongation-ultimate failure of membrane:	700%	D412 Dumbbell
Puncture Resistance:	169 lbs. (76.6kg)	ASTM E154-88
Resistance to hydrostatic head (ft. (m) of water):	150 ft. (45.6m) Method `	ASTM D751 Footnote #2
Resistance to water migration under membrane:	150 ft. (45.6m) Head zero leakage	Footnote #1
Permeance:	$2.7x10^{-13}$cm/sec or 1.7ng/Pa•s•m^2	E-96
Installation Temperatures:	40˚F to 130˚F (5˚C to 54.4˚C)	
Non-toxic:	Do not ingest	
Freeze/thaw cycles: No effect before or after installation.		
Gas transmission rate of the composite mL (aSTP)/cm2.atm	11.98	
Permeability of HDPE and Para JT in "Barrier" b 10-10mL (aSTP)/cm2.sec.cm Hg	0.50	
Permeance in perms	.03 grains/sq.ft./ hr./in. Hg	ASTM E96-92

Life Expectancy: Both high density polyethylene and bentonite have life expectancy measurable in the thousands-of-years.

FOOTNOTES FOR TECHNICAL DATA:
1. A 1" (2.5cm) diameter hole was cut in the middle of a 3 1/2" (8.9cm) diameter sample of Paraseal. Sample clamped in 3" (7.6cm) diameter permeameter, 150' (45.6m) water head applied.
2. Membrane applied to porous stone and placed in permeameter. Pressure increased to equivalent of 150 ft. (45.6m) water head.

aSTP = Standard temperature and pressure.
bA + unit of permeability normally used for homogeneous materials. The unit probably can be used to reflect the permeability of composite itself if the ratio of the thickness of the two materials is kept constant.
The determination was made at 23˚C and 40 psi methane pressure. The difference in the two sets of values probably effects the difference and irregularity in thickness.

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