

# VM60™ SHEET WATERPROOFING MEMBRANE



### 1. Product Name

VM60™ Sheet Waterproofing Membrane

### 2. Product Description

#### Basic Use

The VM60 membrane is a tough, flexible, self-adhering sheet waterproofing membrane that is typically applied to vertical below-grade substrates such as foundation and tunnel walls of concrete and/or concrete block. Applications to wood and metal surfaces are also acceptable.

4 foot wide sheet widths allow fast and easy installation to relatively flat and even substrates. Narrow pre-cut widths are also available for detailing corners and penetrations, or strips can be field cut from full rolls.

A ½ inch wide selvage edge of rubberized asphalt membrane assures membrane-to-membrane seal at all inside lap edges.

VM60 is formulated to be used in ambient temperatures greater than 25 degrees F (-4°C).

#### Accessories

VM and VM WB Precoat Adhesives are used to prime acceptable substrates prior to the application of the VM60 membrane.

VM Liquid Membrane is used to detail at all inside corners and penetrations to provide a smooth transition for the sheet membrane.

VM Masticseal is used to seal all sheet termination edges (i.e., top and bottom of foundation walls), cut edges and sheet "T"-joints.

#### Limitations

- VM60 is not recommended to be used as pond and/or tank liners and is not to be left exposed for extended periods of time.
- Contact with coal tar or coal tar pitch products or products containing polysulfide polymers should be avoided.
- VM WB Precoat Adhesive is water based and must not be allowed to freeze.
- VM60 is recommended for below-grade, vertical waterproofing applications only. For all other waterproofing (and roofing) applications, Hydrotech recommends Monolithic Membrane 6125®.

#### Composition and Materials

VM60 sheet membrane combines a membrane (56 mils thick), composed

of a specially formulated blend of refined asphalts and rubber polymer compounds, with a high density, crosslaminated, white, polyethylene film (4 mils thick). The membrane extends ½ inch beyond the film along both long sides of each roll.

VM60 membrane is rolled with a disposable, poly film release sheet to prevent blocking in the rolls.

VM Precoat Adhesives are fast drying, high tack, rubber based adhesives in solution. WB is to be used where V.O.C. regulations exist.

VM Liquid Membrane is a two component, elastomeric, extended rubber urethane membrane.

VM Masticseal is a rubberized asphalt mastic.

TABLE 1

Property	Test Method	Results
Color		White/Black
Thickness		60 mils
Tensile Strength (membrane)	ASTM D 412 (mod. Die C)	325 psi
Tensile Strength (film)	ASTM D 882	6500 psi
Elongation (ult. fail of membrane)	ASTM D 412	600%
Permeance	ASTM E 96 (Method B)	0.03 perms
Cycling Over Crack (-15°F)	ASTM C 836	No Effect
Peel Adhesion (from substrate)	ASTM D 1000	10.0 lb/in width
Overlap Bond (memb. to memb.)	ASTM D 1000	8.0 lb/in width
Pliability (180 deg. bend @ -25°F)	ASTM D 146	No Effect
Puncture Resistance (membrane)	ASTM E 154	50 lb
Hydrostatic Head Resistance	ASTM D 5385	231 head foot of water
Shelf Life	Membrane Liquid Membrane Accessories	2 years 1 year 1 year
Water Absorption	ASTM D 570	0.1 %
Chemical Resistance	Excellent resistance to acids, alkalis, salts and fungi in soil	
Pot Life of Liquid Membrane (after mixing)	60 min @ 70°F	

### Container/Weight/Coverage

The standard roll size for VM60™ Sheet Membrane is 48" x 50' (1.22m x 15.2m) and each roll weighs 80 pounds. Smaller pre-cut rolls 12", 16" & 24" x 50' (0.3, 0.4 & 0.6m x 15.2m) are available for detailing corners. Each standard roll covers approximately 180 square feet (16.7m<sup>2</sup>) when the side and end laps are included.

The Precoat Adhesives are packaged in 5 gallon pails (18.9 l), weighing 37 pounds (16.8 kg)/pail. The Precoat Adhesives are to be brushed or rolled to a properly prepared substrate at a rate of 250-350 square feet/gallon (6-8.4 m<sup>2</sup>/l).

The Liquid Membrane is packaged in 2 gallon pails that contain 1.9 gallons (7.2 l) of Part A with a 1 pint can (0.5 l) of Part B. Each pail weighs 18 pounds (8.2 kg). When used as fillets at inside corners, the membrane is spread at a rate of 65-75 lineal feet/gallon (5.2-6 m/l).

When a 90 mil (2.3 mm) thick application is to be applied, the coverage is 17 square feet/gallon (.41m<sup>2</sup>/l).

The Masticseal is packaged in 5 gallon pails (18.9 l) or 12-30 ounce tubes (0.89 l) weighing 48 pounds (21.8 kg)/pail and 27 pounds (12.2 kg)/carton. The pails will cover approximately 100 feet/gallon (8 m/l) with a 1 inch (2.5 cm) wide bead and each tube will cover 65 feet (20m) with a ½ inch (1.27 cm) wide bead.

### 3. Technical Data

Typical physical properties of VM60™ Sheet Waterproofing Membrane are shown in Table 1.

### 4. Installation

#### Material Storage

Membrane and Accessories should be unloaded and stored on site carefully. Cartons and containers must be protected from sparks, flames, excessive heat and cold and stored in a well ventilated area. DO NOT stack membrane cartons higher than 5 feet (1.5m) and DO NOT double-stack pallets. All cartons should be stored on pallets and covered to protect against water damage.

#### Application Temperatures

VM60 Sheet Waterproofing Membrane and all accessories are to be applied at ambient temperatures above 25°F (-4°C). The VM60 membrane should not be applied at temperatures above 105°F (40°C).

### Surface Preparation

All concrete surfaces must be smooth, clean, dry, free of voids, protrusions, loose material, laitance, dust, oil, grease and unapproved curing compounds or form release agents. Hydrotech recommends a concrete cure/dry time of 7 days minimum prior to the application of the membrane. In addition, the membrane should not be installed until at least one full day after the forms are stripped from a concrete foundation wall.

Retrofit/rehab applications require the total removal of the existing waterproofing down to clean, bare concrete.

Joints in concrete block substrates should be struck flush with the block surface, not raked.

Any exposed metal surfaces shall be free of paint, oil, rust or any other contaminant.

Wood substrates should be composed of pressure treated or marine grade materials. Creosote treated wood is not acceptable.

### Detailing

Most detailing will be accomplished using VM Liquid Membrane and VM60 Sheet Waterproofing Membrane pre-cut or field-cut sheet detail strips. The application of the Liquid Membrane is necessary to provide smoother transitions for the sheet membranes and should be done prior to the application of the Precoat Adhesives. *No area to receive the Liquid Membrane should be primed with the Precoat Adhesive.*

Fillets of VM Liquid Membrane should be applied to all inside corners (vertical and horizontal) to provide a minimum ¾ inch (19mm) face at 45 degrees. The Liquid Membrane, Parts A and B, should be thoroughly mixed with a paddle attached to a minimum ½ inch drill for 3-5 minutes. Mix only enough Liquid Membrane that will be used within 60 minutes.

The fillets can be formed using small mason trowels or even wood tongue depressors. The Liquid Membrane should be allowed to cure for a minimum of 45 minutes prior to covering with the sheet membrane. A 12 inch (30.5cm) wide VM60 membrane detail strip should be installed to all inside corners, over the Liquid Membrane fillet, centered into the corner.

In lieu of the 12 inch detail strip, the Liquid Membrane can be applied 6 inches in both directions from the corner fillet at a thickness of 90 mils (2.3 mm).

All outside corners are to be covered with a 12 inch (30.5 cm) VM60 membrane detail strip centered over the corner.

All cracks greater than 1/16 inch (1.6 mm) and cold joints should be sealed with Liquid Membrane and a 12 inch wide sheet membrane detail strip centered over the crack/joint.

Expansion joints (<2 inches) must be filled/sealed with a proprietary joint filler, water stop or sealant flush with the substrates surface. An 8 inch wide strip of sheet membrane should be laid over the joint, centered and inverted (turned upside down). This is to be followed by a 12 inch wide detail strip of sheet membrane also centered over the joint.

Liquid Membrane fillets are to be installed at the base of all penetrations (i.e., pipes, vents).

Liquid Membrane can also be used to correct slight deficiencies in the concrete surface (i.e. bug holes, rough concrete).

### Priming

The VM Precoat Adhesives should be stirred before use. The Precoat Adhesive should be applied to all surfaces to receive the VM60 sheet membranes at a rate of 250-350 square feet/gallon (6-8.4 m<sup>2</sup>/l) with a brush or short nap roller. Apply only as much Precoat Adhesive as will be covered with membrane in the same day. Surfaces primed that are left overnight should be re-primed prior to sheet installation. Allow the Precoat Adhesive to dry prior to the application of the sheet membrane (typically about 20-30 minutes). The Precoat Adhesives will retain an aggressively tacky surface.

### Sheet Installation

VM60 Sheet Waterproofing membrane is typically installed in the full 48 inches width of the rolls but may be cut to narrower widths. All side laps must be a minimum of 2½ inches (6.4 cm) and should be staggered one sheet to the next. *NOTE: "Side" lap seams occur along the 50 foot length of a roll; "End" lap seams occur along the 4 foot width of a roll.*

Vertical wall installations require that a careful effort be made to assure complete adhesion of the sheet membrane to the primed surfaces. At a minimum, the installation is a two-man job.

The sheet membrane may be installed with the roll positioned vertically or horizontally across a wall's surface. When installed vertically, it is recommended for ease of installation that the sheet membrane be installed in 8 foot (2.4 m) high sections. While horizontal applications technically can be installed using the entire length of the roll, it is also recommended that 8-10 foot lengths be cut from the roll to ease installation.

In either case, the first sections of membrane should be installed from the base of the wall such that the laps from one sheet to the next, continuing up the wall, shingle downward. Further, **ALL LAP SEAMS ARE TO BE HAND ROLLED USING A STANDARD SEAM ROLLER.**

**Vertically Positioned:** Start by marking the wall, measuring from the wall's base, with a level line at the height of the first lift of membrane (recommended 8 feet). Cut a length of sheet membrane from the full roll equal to the first lift height plus the distance across the top of the footing down the face. Hold the sheet up, allowing the balance to hang, and begin peeling the release sheet off the back along the horizontal top edge. Peel back approximately 6 inches of the release sheet and set the membrane against the wall, lining the top edge with the level line established on the wall. Use heavy hand pressure to secure the sheet to the wall and smooth out the sheet surface. Once the top edge is adhered to the wall, continue peeling the release sheet down from the backside of the membrane securing and smoothing the membrane to the wall as you work down the wall surface. The membrane should be installed minimizing wrinkles and folds. At the base corner of the wall, extra care should be taken to fully set the membrane tightly into the corner and over the Liquid Membrane fillet. Gaps and "bridging" behind the membrane are to be avoided.

Position and secure adjacent sheets across the wall's surface, as above, being sure to provide a minimum 2 1/2 inch side lap over the previous sheet edge. **NOTE: Be sure to cut every other sheet length 4 - 6 inches shorter or longer than the starting sheet length to assure that all end laps wind up being staggered.** For subsequent lifts of membrane, establish a level line up the wall as before, this time being sure to allow for a 6 inch wide shingled end lap over the sheet edge below.

**Horizontally Positioned:** Start by marking the wall, measuring from the wall's base, with a level line at the height of the first

lift of membrane (equal to the width of the roll - 4 feet). Cut a manageable length of sheet membrane from the full roll and re-roll the cut length. Stand the rolled sheet up and begin peeling the release sheet off the back along the vertical side edge. Peel back approximately 6 inches and set the sheet against the wall using heavy hand pressure to secure the sheet to the wall and smooth out the sheet surface. Once this side edge is adhered to the wall, continue peeling the release sheet from the backside of the membrane, unrolling the sheet as you go, securing and smoothing the membrane to the wall as you work across the wall surface. Be sure to keep the horizontal sheet edge lined up with the level line established.

**NOTE:** *Installing the membrane in this manner (horizontally) requires the installation of 2 membrane detail strips in the corner where the wall and footing meet.*

Position and secure adjacent sheets across the wall's surface, as above, being sure to provide a minimum 6 inch end lap over the previous sheet edge.

For subsequent lifts of membrane, establish a level line up the wall as before, this time being sure to allow for a 2 1/2 inch wide shingled side lap over the sheet edge below. In addition, be sure that the 6 inch end laps are staggered between subsequent lifts.

#### **Mastic Application**

A 1/2 - 1 inch bead of VM Masticseal should be applied at all membrane sheet edges that required cutting (i.e., at flashings, etc.), all horizontal sheet termination edges (i.e., top and bottom of a wall/footing) and along all seam edges (horizontal and vertical) that occur at the junction of the wall and footing extending 12 inches in both directions.

Masticseal should be applied to all terminations at the end of each day's work.

#### **Protection**

VM60 should be protected and backfill placed immediately. Extruded polystyrene insulation, 1/4 inch minimum fanfold, 1 inch minimum expanded polystyrene boards are recommended for vertical installations. Drainage products (i.e., Hydrodrain® 1000, 420 or ThermaFlo™) with integral protection sheets can also be used to provide protection as well as drainage. A construction adhesive compatible with both the protection and the sheet membrane should be used to SPOT ADHERE — not fully adhere— the protection course.

#### **Precautions**

The VM60 Sheet Waterproofing Membrane can be adversely affected by ultra-violet light. The waterproofing sheets must be protected from exposure to the sun as soon as possible.

The VM Precoat Adhesive is an industrial coating and would be harmful or fatal if swallowed. It is marked as a red label product due to its flash point.

Adequate ventilation is essential. When using in confined spaces (i.e., bottom of a foundation) mechanical ventilation is strongly recommended.

Do not use near open flame. Avoid breathing solvent vapors and prolonged contact with skin. Do not take internally. If swallowed, do not induce vomiting. Contact a physician immediately. Keep out of reach of children. Keep containers covered when not in use. Do not thin. Dispose of in accordance with local and state and federal requirements. User must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

#### **5. Availability and Cost**

VM60 is readily available through Hydrotech representatives worldwide.

Contact Hydrotech or a representative for pricing information.

#### **6. Guarantees**

Contact Hydrotech for specific warranty information.

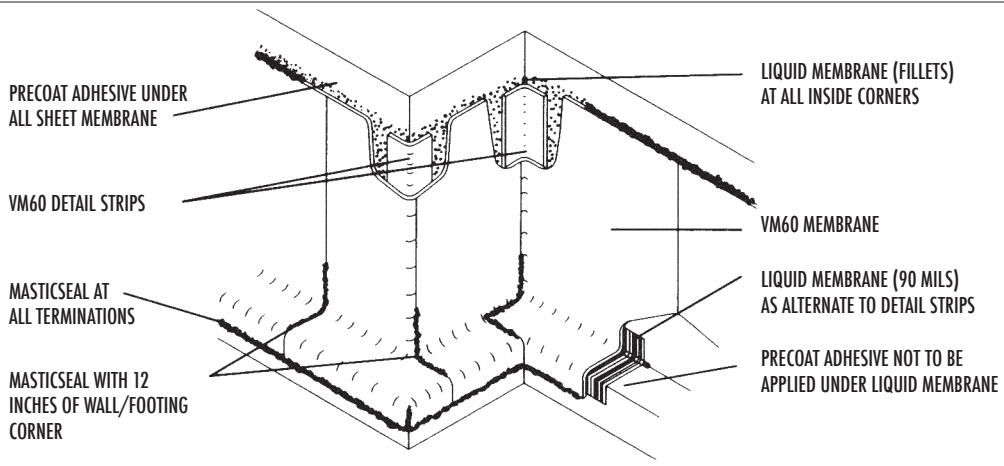
#### **7. Maintenance**

None required.

#### **8. Technical Services**

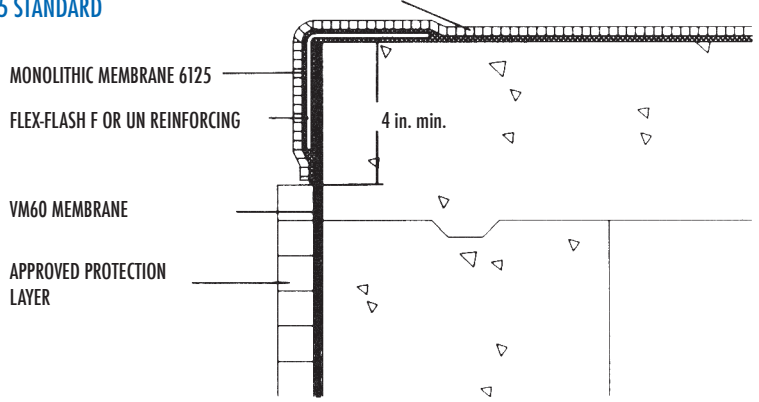
Technical support is provided by a trained network of sales representatives and Hydrotech's Technical Services Department.

**ISOMETRIC**

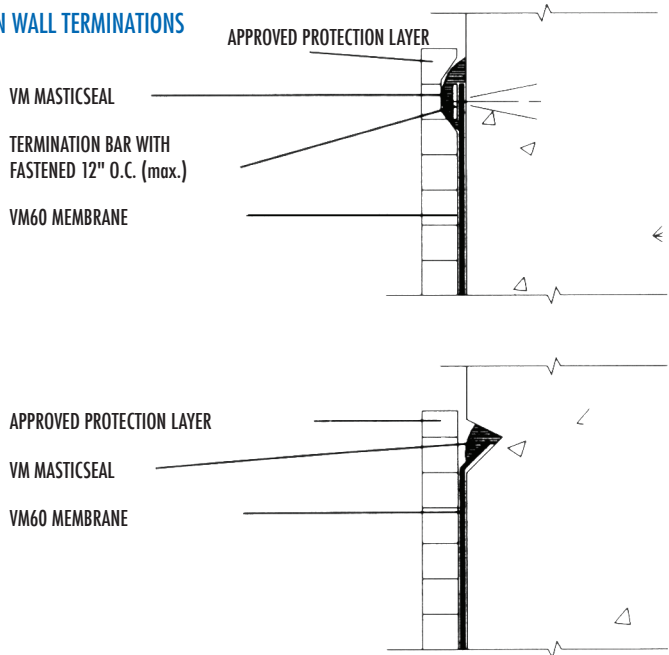


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