LIQUID MEMBRANE 7000

HYDROTECH

A SIKA COMPANY

Tech Data

1. Product Name

Liquid Membrane 7000 (LM7000)

2. Product Description

Basic Use

Liquid Membrane 7000 is formulated for use as a UV stable, tough, flexible, and continuous elastomeric waterproofing membrane available for both horizontal and vertical applications. Liquid Membrane 7000 is designed to withstand constant exposure to full water immersion conditions. ANSI/NSF-61 approval ensures its suitability for contact with potable water.

Composition and Types

Liquid Membrane 7000 (LM7000) is a two-component liquid waterproofing membrane. Engineered with advanced asphalt extended aromatic polyurethane technology, Liquid Membrane 7000 forms a durable membrane that adheres effectively to various substrates. This product is available in two grades: vertical (LM7000-V) and horizontal (LM7000-H).

Accessories

HydroSeal 1K Epoxy Primer is used as a primer for Liquid Membrane 7000 applied over Monolithic Membrane 6125® (MM6125®), concrete, masonry, wood, metal, and other substrates as recommended. Refer to the product's published data sheet for more information.

Sikadur-22 Lo-Mod FS is used as a faster cure primer for Liquid Membrane 7000 applied over concrete, masonry, wood, metal, and other substrates as recommended. Refer to the product's published data sheet for more information.

Sikalastic FTP Lo-VOC is used as primer for potable water applications for plywood and concrete substrates where compliance with NSF61 is required. Refer to the product's published data sheet for more information.

Sikalastic Recoat Primer is used to reactivate applied and cured Liquid Membrane 7000 for proper and strong tie-in with new application of Liquid Membrane 7000. Refer to the product's published data sheet for more information.

Flex-Flash F is used as 6" wide strips to reinforce cracks, small joints, transitions, and other details.
Flex-Flash F can be used in the field if a fully fabric reinforced assembly is required by the design team. Refer to the product's published data sheet for more information.

Tools

- Mixing Drill: Low Speed Mixing Drill (400-600 rpm)
- Mixing Paddle: Jiffy Mixer (5-50 Gallon Model) or Mud Mixing Paddle (9-5/8" WIDE x 6-1/4" DEEP)
- Tape measure
- Masking tape
- Scissors
- Eye protection
- Rubber gloves
- Paint brush or phenolic resin core roller
- Notched squeegee

Limitations

- Applications including immersion in potable water require different primer and cure time of 96 hours or more. **Please contact Hydrotech Technical Service for potable water applications.**
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pin holing may occur.
- Do not apply when substrate is in direct sunlight.
- This product is available only in black color. Can be exposed to direct sunlight. Initially after application it is shiny black then after a few months it will turn dull after being exposed to direct sunlight.
- Precautions should be taken to prevent vapors and/or odors from entering the building/ structure, including but not limited to turning off & sealing air intake vents & through-wall air conditioners, & other means of vapor/ odor ingress during application & cure.
- Any repairs required to achieve a level surface must be performed prior to. Surface irregularities may reflect through the cured system.

Container/Coverage

Liquid Membrane 7000 is packaged in 4.5 gal. (Part A+B) or 1 gal. (Part A+B). For best results Liquid Membrane 7000 should be applied in two coats minimum. Liquid Membrane 7000 is applied in two coats at a rate of 26 sqft/gal for each coat, 60 mil wet film thickness. (total of 13 sqft/gal for both coats, 120 mil)

Physical Properties/Applicable Standards

- Meets California VOC and AQMD Requirements, Including SCAQMD Areas
- ANSI / NSF 61 Approved for contact with Potable Water

3. Installation

Surface Preparation

General: Acceptable substrates include concrete, masonry, metal, wood/plywood, and cement board. All substrates must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and/or resin to the substrate with a maximum moisture content of four (4) by weight. Substrates shall be abrasively cleaned, or ground as required to provide a sound open abraded surface to provide adhesion of the primer and resins to the substrate. Determinations of bond strength and moisture content shall be performed periodically by the contractor throughout the course of work. Minimum ambient and substrate temperature during application and curing of material is 41 °F (5°C); maximum is 95 °F (35°C). Surface temperatures must be no higher than 110 °F (43°C).

Concrete: All concrete substrates and concrete repair materials must be cured a minimum of 28 days in accordance with ACI-308, or as recommended by the concrete/mortar manufacturer, in order to achieve a minimum hardness of 3,500 psi (25 N/mm2) with a maximum moisture content of six (4) percent by weight. Concrete substrates shall be abrasively cleaned (i.e., shot blast) in accordance

with ASTM D4259 to provide a sound substrate free from laitance with an open concrete surface. Areas of minor surface deterioration of 0.50 inch (13 mm) or greater in depth, and/or spalls, voids, bug holes and other deterioration on vertical surfaces or horizontal surfaces shall be repaired. Surface irregularities may reflect through the cured membrane.

Metal: Clean and prepare metal surfaces to near white metal in accordance with SSPC-SP10/NACE 2. Be aware of dew point and check it before every application on metal surface.

Plywood: Plywood shall be 1/2" minimum, CDX exterior grade board identified with American Plywood Association (APA) grade trade marks and shall meet the requirements of product standard PS1. Plywood panels should be installed with no gaps at panel joints. Tongue and groove plywood should be used whenever possible.

Priming

Primer is required on all rubberized asphalt, concrete, wood and metal surfaces. Note: Consumption and yield or primer will vary depending upon smoothness and absorbency of the substrate

HydroSeal 1K Epoxy Primer: Apply a single coat with brush or phenolic resin core roller at the recommended rate,100-250 sf/gal depending on the substrate. Correct amount of primer will saturate the substrate and leave a slight film on the substrate top surface. Apply evenly without puddling. Allow primer to cure until tack-free, typically 9 hours (at 75°F (24°C) 50% R. H). HydroSeal 1K Epoxy Primer should be overcoated within 72 hours after tack-free. Refer to separate primer data sheet for additional information.

Sikadur®-22 Lo-Mod FS: Apply a single coat with a flat squeegee or roller at approximately 80-160 sf/gal. Apply evenly without puddling. Allow primer to cure until tack-free, typically 2-4 hours (at 75°F (24°C) 50% R. H). Sikadur®-22 Lo-Mod FS should be overcoated within 36 hours after tack-free. Refer to a separate product data sheet for additional information.

Sikalastic FTP Lo-VOC: For plywood decks, concrete with a maximum moisture content of 5 % by weight, apply a single coat of Sikalastic FTP LoVOC Primer with a flat squeegee or roller at approximately 175 sf/gal. Work primer well into the substrate to ensure adequate penetration and sealing. Apply evenly without puddling. Refer to separate primer data sheet for additional information.

TECHNICAL DATA

PROPERTY	TEST METHOD	RESULTS
SOLID CONTENT BY MASS	ASTM D-236	95 ± 2%
SOLID CONTENT BY VOLUME	ASTM D-2697	89 ± 2%
VOLATILE ORGANIC COMPOUND (VOC) CONTENT	See Product Safety Data Sheet	
ELONGATION AT BREAK	ASTM D-412 75°F (24°C) 50% R.H.	450% ± 50%
SERVICE TEMPERATURE	-60 - 220°F	
WATER VAPOR TRANSMISSION	ASTM E-96, Procedure B - Wet Cup 75°F (24°C) 50% R.H.	0.03 Perms
CHEMICAL RESISTANCE	Resistance to aqueous chemicals and waste water. Please see chemical resistance chart.	
RESISTANCE TO WEATHERING	ASTM D-822 75°F (24°C) 50% R.H.	Done for > 5000 hrs
BEHAVIOR AFTER ARTIFICIAL WEATHERING		
Weathering	ASTM D-822	Done for > 5000 hrs
Tensile Strength	ASTM D-412	1000 ± 50 psi, 5.86 ± 0.3 Mpa
Tear Strength	ASTM D-624, Die C	180 ± 50 psi
Hardness	ASTM D-2240	60 ± 5 Shore A
Adhersion to Concrete (dry) Elcometer		350 psi
Abrasion Resistance - Weight Loss	ASTM D-4060	1.2 mg loss
Deflection Temperature	ASTM D-648	pass
Elastomeric Waterproofing	ASTM C-836, ASTM C-957	exceeds
Extension to Break	ASTM D-2859	450 ± 100
Liner Performance Crack Bridging	10 cycles @ - 15°F	> 1/8"; After heat aging > 1/4"
Liner Weight (60 mil wet film thickness)		30 lbs / 100 sq.ft
Mullen Burst Strength	ASTM D-751	50 mil 155 psi
Recovery from 100% Extension	after 5 minutes	98%, after 24 hours100%
Softening Point, Ring & Ball	ASTM D-36	>400°F
Deflection Temperature	ASTM D-648	-60°F

Application

Mixing

It is essential that proper mixing methods and tools are used to ensure proper application of Liquid Membrane 7000. Mixing Drill: Low Speed Mixing Drill (400-600 rpm), Mixing Paddle: Jiffy Mixer (5-50 Gallon Model) or Mud Mixing Paddle (9-5/8" WIDE x 6-1/4" DEEP).

Premix each pail of Liquid Membrane 7000 Part B (4.05 gal.) using the recommended drill and mixing paddle at slow speed for a minimum of 1.5 minutes to ensure the content is homogeneous.

With mixing paddle in the Part-B, turn on mixing drill and while the mixing paddle is spinning slowly add one 0.45 gallon can of Part-A to the center of the vortex created by the mixing paddle. Once Part-A has been added, mix continuously for an additional 3 minutes using a very slow up and down motion, making sure full pail is mixed evenly, including the sides of the pail.

Take care not to allow entrapment of air into the material. Do not mix in an aggressive up and down motion. Do not estimate mixing time. Do not thin. Do not hand mix. Mix the whole pail. Do not batch down. If a greenish hue can be seen at the top of the pail, then product has not been mixed properly.

Detailing

For cracks less than 1/16" width: Apply Flex-Flash F with a 20-mil detail coat of Liquid Membrane 7000 H/V centered over the crack, then cover with another 20-mil coat. For cracks 1/16" width or greater and less than 1" width: Must be routed to at least ¼" by ¼", and sealed with an appropriate sealant, installed per sealant Product Data Sheet, and detail with Flex-Flash F set in a 20-mil detail coat of Liquid Membrane 7000 H/V centered over the crack, then cover with 20-mil coat. Non-moving cracks can be filled with compatible rigid repair materials.

For joints 1/16" or greater and less than 1" width, joints should be sealed with the appropriate sealant, installed per sealant Product Data Sheet, and detailed with Flex-Flash F set in a 20-mil detail coat of Liquid Membrane 7000 H/V centered over the crack, then cover with 20-mil coat. Joints 1" or greater width should be treated as expansion joints with the proper choice of prefabricated expansion joint system that can tie-in properly with the membrane.

All transitions and details should be treated with Flex-Flash F set in a 20-mil detail coat of Liquid Membrane 7000 H/V, then cover with 20-mil coat.

Application

Liquid Membrane 7000 is applied in two coats, 60-mil each for a total thickness of 120 mil. Allow coating to cure (4-6 hours or until surface is walkable without damaging the membrane) after initial coat and before proceeding with the second. Liquid Membrane 7000 should be applied in the shade or during evening hours. When applying in direct sunlight it is possible that the surface of the coating can cure too quickly and entrap solvent resulting in blisters. Apply using a 3/8" nap roller or notched squeegee and back-rolled. After application at 75 °F (24 °C) and 50 % R.H, second or multiple coats must be completed within 16 hours from the start of the previous applications of Liquid Membrane 7000.

If a rain event occurs during the 16 hour window or the 16 hour window is exceeded, but less than 72 hours or providing the surface is not exposed to significant dirt or other contamination, it is necessary to solvent wipe with xylene, acetone or other approved solvent, and prime with Sikalastic Recoat Primer. Beyond 72 hours from the start of the previous applications of LM7000 and/or if the surface is subjected to significant dirt or contamination, it is necessary to clean, abrade, solvent wipe with xylene, acetone or other approved solvent, and prime with Sikalastic Recoat Primer.

3. Precautions

Surface may be slippery when wet. For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the current Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current Safety Data Sheets before using any products. This product contains isocyanates, asphalt, and solvents.

Availability and Cost

Availability

Through American Hydrotech, Inc. Sales Representatives.

Costs

Contact your local representative or Hydrotech directly.

Guarantees

Contact American Hydrotech, Inc. for specific warranty information.

Maintenance

Typical roof-top maintenance should be conducted. Damaged membrane should be reported to the installing contractor or Hydrotech for proper repair prior to any overburden installation.

Technical Service

Technical support is provided by Hydrotech's Technical Service Department

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