



Mer-Thane 300SF

Elastomeric Urethane Pedestrian Decking System

MINIMUM DRY FINISHED THICKNESS

52 mils (1.3mm)

MATERIAL STANDARDS

- ASTM D2369-81
- ASTM D2697
- ASTM D624
- ASTM D412
- ASTM D2240

SPECIFICATION CLASSIFICATIONS

- 07 14 16 Cold Fluid-Applied Waterproofing
- 07 35 00 Elastomeric Deck Coatings
- 07 18 13 Pedestrian Traffic Coatings
- 07 19 00 Water Repellents
- 07 55 53 Elastomeric Protected Membrane Roofing
- 07 55 56 Fluid-Applied Protected Membrane Roofing

MATERIALS NEEDED

Joint & Crack Treatment

- Mer-Thane 500 Waterproofing Membrane (1A:1B)
- Mer-Ko Fiber Tape

Decking System

- Mer-Thane 300 SC Primer (1A:1B)
 - Mer-Thane 300 Primer (2A:1B) (option)
- Mer-Thane 300SF Waterproofing Membrane
- Mer-Thane Catalyst CC (option)
- Mer-Thane Accelerator M (option)
- Mer-Thane Aggregate, RF
- Mer-Thane 310 Topcoat
 - Mer-Thane 300G Topcoat (1A:1B) (option)
- Mer-Thane Catalyst CC (option)
- Pigment Paste (if required for colorant)
- Mer-Thane Accelerator T (option)

SUBSTRATES

The Mer-Thane 300SF system can be installed over properly prepared plywood or concrete substrates.

USES/APPLICATIONS

- Commercial & Residential Pedestrian Traffic Areas
- Walkways & Breezeways
- Balconies
- Rooftop Sun Decks & Sports Decks
- Tennis & Basketball Courts
- Over Occupied Space

ADVANTAGES

- Seamless, monolithic waterproofing membrane system
- Low odor
- Excellent adhesion
- Can be installed over new or existing surfaces
- Maintains elastomeric properties at low temperatures
- Elastomeric properties help compensate for normal building movement
- Resists degradation from UV, ozone and weathering
- Superior chemical resistance to oils, fuels and many chemicals
- Outstanding long-term durability and performance
- Meets California VOC & SCAQMD requirements

SYSTEM DESCRIPTION

Mer-Thane 300SF system is a high-performance, single component, low odor, moisture cured, cold fluid applied, elastomeric urethane waterproofing system which uses an integrally colored, polyester, aliphatic, single component moisture cured topcoat approved for use in SCAQMD areas. This seamless system provides superior adhesion, abrasion, impact resistance, flexibility, chemical resistance, and weatherability. Mer-Thane 300SF is specifically engineered to protect plywood and concrete surfaces from deterioration due to water penetration, waterborne chlorides, and exposure to common chemicals and biodegradable materials found in pedestrian traffic applications. It is engineered to seal the substrate from moisture penetration during freeze-thaw cycling or high temperature/high humidity thermal cycling.

Mer-Thane 300SF system installs at a minimum 52 mils (1.3mm) DFT and is designed for use over properly prepared plywood and concrete substrates. The system is applied at flashing areas, drains, trenches, curbs, vertical wall terminations and other surface transition areas to provide seamless waterproofing protection.

COLORS

Mer-Thane 300SF Waterproofing Membrane is available in Grey or Monterey Sand, 310 Topcoat is available in 7 standard colors and 300G Topcoat is available in 2 standard colors. Consult the Color Selection Guide for additional color details. Custom colors are available upon request.

SKID-RESISTANCE

Skid-resistance is incorporated by broadcasting Mer-Thane Aggregate RF (washed, dry, rounded, crystal silica sand, 16/30 mesh, 6.5+ Moh's minimum hardness) into the second membrane application. Skid-resistance and degree of cleanability work inversely. The larger the aggregate size the more difficult it is to clean the finished surface.

INSTALLATION CONDITIONS

The Mer-Thane 300SF system should be installed when surface and ambient temperatures are above 50°F (10°C) and below 100°F (38°C). Temperature should be at least 5°F above the dewpoint. Do not install during inclement weather, when precipitation is occurring or expected within 24 hours.

Mer-Thane 300SF system materials are very sensitive to heat and moisture. Higher temperatures and/or high humidity will significantly accelerate the cure time and shorten the pot life. Use caution in batch sizes and thickness of application. Low temperature and/or low humidity will extend the cure time.

SUBSTRATE PREPARATION

The substrate surface must be clean, dry and free of dust and any other contaminants at the time of material application. A minimum finished deck slope of 2% (1/4 unit vertical in 12 units horizontal) is required for proper drainage. Use No. 26 gage bonderized steel or equivalent flashing around the perimeter; clean and degrease all metal flashings with Xylene or MEK. Do not use copper perimeter flashings. Stainless steel requires scuffing with the use of 100-120 grit sand paper prior to cleaning.

Plywood Surfaces

Plywood substrates shall be a minimum 5/8 inch thick (16mm) exterior grade, PS 1, exposure one, plywood, complying with and installed in accordance with the 2006 International Building Code and or 2009 International Building Code with all edges blocked. Face plies must be perpendicular to the supports. The plywood must be attached to all blocking and end bearings with countersunk wood screws, screw or ring-shank nails equivalent to 8d common nails, spaced 4 inches (101.6mm) on center at sheet perimeters and 8 inches (203.2mm) on center in the field.

Concrete Surfaces

Concrete surfaces must have a finish equivalent to steel troweling with a fine hair brooming. The surface must be clean, sound and provide a

COVERAGES

Coverage rates are approximate only and can vary greatly due to surface conditions, humidity, temperature and installation techniques.

Primer Coat (Optional for New Plywood only)

Mer-Thane 300SC Primer 300 ft² (27.9 m²)/gallon (3.8 L)
Yield 3 mil (0.08mm) DFT

(Optional) Mer-Thane 300 Primer 300 ft² (27.9 m²)/gallon (3.8 L)
Yield 3 mil (0.08mm) DFT

Joint & Crack Treatment

Mer-Thane 500 Waterproofing Membrane... 33 ft² (3 m²)/gallon (3.8 L)
Yield 20 mil (0.5mm) DFT

Mer-Ko Fiber Tape 4 in x 150 LFT/roll
101.6mm x 45.7m/roll

Mer-Thane 300SF Waterproofing Membrane

Coverage rates will vary depending on porosity of substrate.

First Application 57 ft² (5 m²)/1 gallon (3.8 L)
Yield 28 mil (0.71mm) DFT

Second Application 133 ft² (12.4 m²)/1 gallon (3.8 L)
Yield 12 mil (0.31mm) DFT

Mer-Thane Aggregate RF 20 lbs/100 ft² (9.1 kg/9.3 m²)

Mer-Thane 310 Topcoat 100 ft² (9.3 m²)/1 gallon (3.8 L)
Yield 12 mil (0.3mm) DFT

Optional (Two Component 1:1 A & B)

Mer-Thane 300G Topcoat 100 ft² (9.3 m²)/1 gallon (3.8 L)
Yield 16 mil (0.41mm) DFT

TOTAL FINISHED THICKNESS **Minimum 52 mils (1.3mm) DFT**
(Over new plywood, without primer, exclusive of aggregate, using 310 Topcoat)

PACKAGING

Primer

Mer-Thane 300SC Primer Part A 1 & 5 gallon 3.8/18.9 liter
Mer-Thane 300SC Primer Part B 1 & 5 gallon 3.8/18.9 liter
Mer-Thane 300 Primer Part A (2-A:1-B) 5 gallon 18.9 liter
Mer-Thane 300 Primer Part B 5 gallon 18.9 liter

Joint & Crack Treatment

Mer-Thane 500 Waterproofing Membrane, Part A 1 & 5 gallon (Net 0.8 & 4 gallons)
3.8 & 18.9 liter

Mer-Thane 500 Waterproofing Membrane, Part B 1 quart (Net 0.2 gallon) & 1 gallon
0.95 & 3.8 liter

Mer-Ko Fiber Tape 4 in x 150 LFT/roll
101.6 mm x 45.7 m/roll

Waterproof Membrane

Mer-Thane 300SF Waterproofing Membrane 5 gallon 18.9 liter
(Option) Mer-Thane Catalyst CC 1 oz. (net 0.7 oz.) vial and 1 quart
20 gram/0.95 liter can
(Option) Mer-Thane Accelerator M 1 quart 0.95 liter can

Aggregate

Mer-Thane Aggregate RF 50 lb. bag 22.7 kg bag

Topcoat

Mer-Thane 310 Topcoat 5 gallon 18.9 liter
(Option) Mer-Thane Catalyst CC 1 oz. (net 0.7 oz.) vial and 1 quart
20 gram/0.95 liter can

(Option) Mer-Thane Accelerator T 1 quart 0.95 liter
Mer-Thane 300G Topcoat Part A 5 gallon 18.9 liter
Mer-Thane 300G Topcoat Part B 5 gallon 18.9 liter

2. Crack & Joint Treatment

Plywood Surfaces

All plywood substrate joints must be open a minimum of 1/8 inch and clean. Apply a "NEAT" mixture of Mer-Thane 500 Waterproofing Membrane reinforced with Mer-Ko Fiber Tape around all pipes and drains.

Stripe coat all plywood board joints and sheet metal flashing termination/transitions by applying a "NEAT" mixture of Mer-Thane 500 Waterproofing Membrane and reinforce with Mer-Ko 4 inch Fiber Tape embedded for a distance of 2 inches on both sides. **Do not mix more material than can be used in 20 minutes.** Allow the surface to cure for 6 to 8 hours.

Concrete Surfaces

All control joints in the concrete substrate must be clean and open a minimum of 1/8 inch. Stripe coat all concrete control joints, and sheet metal termination/transitions and any other openings with a "NEAT" mixture of Mer-Thane 500 Waterproofing Membrane and reinforce with Mer-Ko 4 inch Fiber Tape embedded for a distance of 2 inches on both sides.

Additionally, stripe coat any other cracks in the concrete using Mer-Thane 500 Waterproofing Membrane and embed Mer-Ko 4 inch Fiber Tape for a distance of 2 inches on either side of the crack. **Do not mix more material than can be used in 20 minutes.** Allow the surface to cure for 6 to 8 hours.

3. Primer Horizontal Surface (Primer is optional on new plywood)

Apply Mer-Thane 300SC or Mer-Thane 300 to the properly prepared surface using a brush or phenolic resin core roller at 1 gallon/300 ft² (3.8 L/27.9 m²). Primer must dry tack free before applying the 300SF waterproofing membrane. Do not mix more material than can be used for the appropriate primers pot life.

4. Waterproofing Membrane – First Application

Mixing

Mer-Thane 300SF Waterproofing Membrane should be thoroughly mixed using a mechanical mixer at slow speed until a homogenous mixture and color is obtained. Use care when mixing to avoid air bubbles. DO NOT entrain air into the mixture. This can result in pinholes, blisters and/or shortened pot life.

uniform surface free of depressions and ridges. All holes must be cleaned and filled with an appropriate Mer-Ko Underlayment. All high spots must be removed by chipping or grinding. Concrete control joints should coincide with stress relief concentration points, with a maximum spacing of 20 ft (6.1 m).

Surface imperfections, if left untreated, will be noticeable in the finished application. Concrete not meeting the above requirements should be prepared and properly abraded by shotblasting and/or hydro-blasting (10,000-20,000 psi). If water is used, allow to dry completely. Neat cement sacking is not an acceptable surface preparation.

APPLICATION INSTRUCTIONS

While material application is in process, all other trade work in the area should be stopped during installation and 72 hours after the application is complete. Read all instructions before starting application.

1. Primer Coat (optional on new plywood)

Prime the necessary surfaces to receive the coating, including all flashings, concrete and other necessary vertical or sloping surfaces, curbs, cants, parapets, etc.

Mixing

The mixing ratio for 300SC is 1 Part A to 1 Part B. The mixing ratio for 300 is 2 Parts A to 1 Part B. Primer Part A and Part B should be thoroughly mixed individually prior to combining them to ensure a homogeneous material. The combined components should be thoroughly mixed using a mechanical mixer at slow speed for 1 to 2 minutes until a uniform color is achieved.

Applying

Apply Mer-Thane Primer using a brush, or phenolic resin core roller. Allow Primer to become tack free prior to applying the coating. Do not mix more material than can be used for the appropriate primers pot life.

Mer-Thane 300SF Waterproofing Membrane must be applied over the 300 primer within 10 hours and over the 300SC primer within 24 hours at 70°F (21°C) 50% RH (within 16 hours if the substrate temperature is 85°F [29.4°C] or above). If more than the allotted time for the particular primer elapses between coats, the surface must be re-primed.

PHYSICAL CHARACTERISTICS - MEMBRANE

VOC Content94 g/L (0.78 lbs/gal) (ASTM D2369-81)
Hardness45-55 (ASTM D2240, Shore A)
Tear Resistance155-205 pli (ASTM D624, Die C)
Elongation475-575% (ASTM D412)
Solids Content (% by Weight)92.7% (ASTM D2369)
Solids Content (% by Volume)87.7% (ASTM D2697)
Specific Gravity1.30 lb/gal
Tensile Strength400-600 psi (ASTM D412)

Applying

Apply Mer-Thane 300SF Waterproofing Membrane to the perimeter flashing using a brush, or phenolic resin core roller and to the deck surface using a squeegee or notched trowel at 28 mil DFT. Apply with continuous coverage to minimize lines and/or streaking, back roll as necessary. Allow Mer-Thane 300SF Waterproofing Membrane to cure a minimum of 16 hours and a maximum of 48 hours at 70°F (21°C) 50% RH prior to proceeding with additional coats to ensure proper adhesion. If more than 48 hours elapses, the surface must be primed. Mer-Thane Catalyst CC can be added to the 300SF waterproofing membrane to allow for normal cure time for applications during temperatures between 40°F to 50°F (4.4°C to 10°C) at the rate of 0.2 oz (min) to 0.6 oz (max) per gallon or 1 oz (min) to 3 oz (max) per 5 gallons, or used in conjunction with Accelerator M for a shortened cure time for rehabilitation or repair projects. Refer to the Accelerator M use Instructions. Pot Life when Catalyst CC is used is approximately 4-6 hours depending upon temperature, humidity and the amount of Catalyst used. Excessive amounts of Catalyst CC will reduce the physical properties and performance of the material. Excessive Catalyst may result in foaming.

5. Waterproofing Membrane – Second Application

Mix and apply a second coat of Mer-Thane 300SF Waterproofing Membrane to the perimeter flashing and deck surface in the same manner as the first, at 12 mil DFT. Apply with continuous coverage to minimize lines and/or streaking.

While the Mer-Thane 300SF Membrane material is still wet, immediately broadcast Mer-Thane Aggregate RF into the wet material at a rate of 20 lbs/100 ft² (9.1 kg/9.3 m²) or as required to achieve the desired skid-resistant finish. Ensure complete and uniform coverage (or to refusal). Allow the 300SF Waterproofing Membrane to cure a minimum 16 hours and a maximum of 48 hours at 70°F (21°C) 50% RH before proceeding with succeeding coats to ensure proper adhesion. Then, remove all loose aggregate, dust or debris and immediately proceed with the topcoat application.

6. Topcoat

Mixing

Mer-Thane Topcoat and Pigment Paste should be thoroughly mixed individually prior to combining to ensure homogeneous material and color. While mechanically mixing the Topcoat using a mechanical mixer at slow speed, add 1 quart of Pigment Paste and thoroughly blend the components until a uniform color is obtained. Then, pour a small amount of the Topcoat into the Pigment Paste container and scrape the sides thoroughly. Pour back into the Topcoat material and again thoroughly blend the combined components, until a uniform color is obtained. Use care when mixing to avoid air bubbles. DO NOT entrain air into the mixture. This can result in pinholes, blisters, fish eyes, and/or shortened pot life. If multiple containers of Topcoat and Pigment Paste are used, it is recommended that the material is “boxed” to ensure a uniform color.

Applying

Using a squeegee and/or a solvent resistant, phenolic core roller, apply Mer-Thane 310 Topcoat in the desired color to all perimeter flashing

PHYSICAL CHARACTERISTICS - TOPCOAT (Pigmented)

VOC Content98 g/L (ASTM D2369-81)
Hardness90-100 (ASTM D2240, Shore A)
Tear Resistance450-550 pli (ASTM D624, Die C)
Elongation175-225% (ASTM D412)
Solids Content (% by Weight)75.6 +/- 2% (ASTM D2369)
Solids Content (% by Volume)73.4 +/- 2% (ASTM D2697)
Specific Gravity1.31 lbs/gal
Tensile Strength3,100-3,900 psi (ASTM D412)

Accelerator M Use Instructions

Accelerator M will shorten the cure time of Mer-Thane 300SF waterproofing membrane by 4 to 8 hours depending upon usage and environmental conditions. Accelerator use level is variable up to a limit of one quart per five (5) gallons of material. The higher the level of addition (to the maximum limit), the faster the cure rate. Proper incorporation of Accelerator M into appropriate Mer-Thane materials will allow a 15 to 20 minute pot life for application at 75°F (24°C) and 50% relative humidity. Typical use levels are:

< 0.5 pint/gallon OR < 1 quart/5 gallon pail

Accelerator T Use Instructions

Accelerator T will shorten the cure time of Mer-Thane 310 Topcoat material by 6 to 8 hours depending upon usage and environmental conditions. Accelerator use level is variable up to a maximum limit of 1 quart per 5 gallon pail. Proper incorporation of Accelerator T into appropriate Mer-Thane materials will allow a 1 to 3 hour pot life for application at 75°F (24°C) and 50% relative humidity.

Mixing Accelerator into Mer-Thane Materials

Mer-Thane Accelerators are added to the moisture-cured urethanes at the job site. Mix the base membrane using mechanical agitation at slow speed and gradually add the accelerator. Mix until a uniform mixture and color is attained. Take care not to entrain air during mixing.

Recoats must be applied within 8 to 12 hours of becoming tack-free.

CAUTIONS:

Excessive addition of Mer-Thane Accelerator will result in a drastic reduction of physical properties of the membrane which could lead to cracking and general premature degradation of the membrane. Mix and apply all Mer-Thane materials in well ventilated areas and observe normal safety precautions. Keep containers tightly sealed when not in use. DO NOT USE accelerator additive if it has been contaminated by water, detectable by a strong acid odor and darkening color.

and horizontal deck areas. Use extra care not to entrain air into the material. Apply evenly over the entire deck surface at 12 mils DFT. Apply with continuous coverage to minimize lines and/or streaking. Allow Mer-Thane 310 Topcoat to cure a minimum of 24 hours and a maximum of 48 hours at 70°F (21°C) 50% RH before proceeding with any additional coats to ensure proper adhesion. Additional/optional coats must be applied within 48 hours. If more than 48 hours elapses between coats, the surface must be primed.

Sloped or pitched surfaces may require additional applications to achieve the desired thickness. When using a notched squeegee, backrolling may be required to achieve the desired finish. Mer-Thane Catalyst CC can be added to the 310 Topcoat to allow for normal cure time for applications during temperatures between 40°F to 50°F (4.4°C to 10°C), at the rate of 0.2 oz (min) to 0.6 oz (max) per gallon or 1 oz (min) to 3 oz (max) per 5 gallons. Catalyst CC can be used in conjunction with Accelerator T for a shortened cure time for rehabilitation or repair projects. Refer to the Accelerator T use Instructions provided within this technical application guide.

Mer-Thane 310 Topcoat, under normal conditions, should be dry to touch within 16 hours. Light traffic service can be introduced 24 hours (minimum) after application. Return to full service after 72 hours. Optional: Mer-Thane 300G Topcoat (1A:1B) allow each coat to cure a minimum of 3-4 hours at 70°F (21°C) and 50% relative humidity. Allow a minimum of 6 hours before permitting light pedestrian traffic.

Additional Topcoat – Optional

Additional topcoats can be applied to provide an exceptionally durable wearing surface. Allow a minimum 24 and a maximum of 48 hours cure time between coats.

CAUTIONS & LIMITATIONS

- The substrate surface must be structurally sound, clean, dry and free of dirt, dust, oil, grease, paint or other contaminants at the time of material application.
- Do not install during damp weather or when rain is expected within 24 hours.
- Mer-Ko waterproof deck systems are designed for professional installation.
- System warranties require installation by currently listed applicators.
- Not designed for vehicular or heavy steel wheeled traffic.
- Not suitable for below-grade, split slab, or slab-on-grade without on-grade vapor barrier
- Not for use on “sandwich” slabs without a vapor barrier or with insulation, slabs over unvented metal pans, suspended pool decks, swimming pools, magnesite, lightweight concrete, asphalt surfaces or asphalt overlays.
- Concrete substrates must have a minimum compressive strength of 3,000 psi tested by “point loading” technique.
- The moisture content of the substrate should be checked and approved by a qualified professional prior to installation.
- When installing a deck system over an unheated enclosed space (e.g., garage, etc.) provision must be made to vent the area.
- Containers that have been opened should be used as soon as possible. The product is moisture-reactive and will gel or set up when exposed to moisture in the atmosphere. A polyethylene sheet must be used as a protective blanketing prior to re-sealing the lid on a partially used container. Keep the lid tightly sealed when the material is not in use.
- Before using Mer-Thane products, read all container labels, MSDS, application instructions and storage and handling information carefully. Applicators should wear an approved respirator, protective glasses, clothing and gloves. Avoid contact of material with skin

or eyes and avoid breathing vapors. Mix and apply materials in well ventilated areas and observe normal safety precautions. Mer-Thane materials are classified as corrosive material and can cause irritation in prolonged exposure. Wash skin thoroughly with soap and water if product(s) contact skin. Consult the Material Safety Data Sheet for additional information and precautions.

- Protect all finished surfaces that are not intended to receive the deck coating system materials.
- Use extra caution in protecting surfaces not to be coated when using spray application methods. Windy conditions or overspray can damage surrounding surfaces.

CARE & MAINTENANCE

Mer-Thane 300SF systems topcoat is designed to provide easy cleanability and low-maintenance.

The colored topcoat is designed to resist direct exposure to environmental elements and withstand normal wear. To extend the life of the wearing surface to its maximum potential, establish a regular cleaning schedule. Use a mild detergent (e.g. Trisodium Phosphate) and water or pressure washing to remove tough stains and contaminants. Use a stiff broom or scrub brush to remove any contaminants on the surface of the deck. Rinse thoroughly with clean water after scrubbing. Never use alcohol or petroleum based products.

Decks should be re-sealed every 5 years for best results, or per the schedule listed on the warranty issued. (*Note: The functionality of the Mer-Thane 300SF system is not impacted by aesthetic imperfections.*) Allow the deck surface to dry prior to re-sealing, then prime and apply a fresh coat of the appropriate Mer-Thane 310/300G Topcoat in the desired color. Refer to Mer-Thane’s Care & Maintenance Instructions for more detailed information on proper care and re-sealing.

STORAGE & HANDLING

Store all Mer-Thane materials in a dry environment at temperatures between 65 to 70°F (18 to 21°C). All materials should be stored in compliance with local fire and safety requirements. Do not store at high temperatures or in direct sunlight. Do not allow uncured materials to freeze. Store materials in tightly closed, original containers, off the ground, on plywood or non-asphaltic insulation board. Avoid moisture contamination. Always wear proper safety equipment, including an approved respirator, eye protection and gloves when mixing and/or applying these products. Do not breathe vapors. Do not keep opened containers in confined spaces. Consult published OSHA (Occupational Safety and Health Administration) regulations for additional information and compliance information.

SHELF LIFE

The shelf life is one (1) year from the date of manufacture in the original, unopened container when the material is properly stored.

WARRANTY

Five (5), ten (10) and fifteen (15) year warranties are available depending upon product selection and project design. Contact Mer-Ko’s Customer Service Department for specific warranty information.

Any recommendation or suggestion relating to the use of MER-KO products made via current technical literature, marketing materials, technical application guides, specifications, and the like, or in response to specific inquiry or otherwise, is based on data believed to be reliable. However, the products and information are intended for use by Buyers having requisite skill and know-how in the industry. Therefore, it is the responsibility of the Buyer to satisfy the necessary requirements of suitability of the products for its own particular use, and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. Mer-Ko believes the information contained herein is true and accurate as of the date of publication. Information contained here is for evaluation only. Mer-Ko reserves the right to modify and/or change products or literature at any time and without prior notice.

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