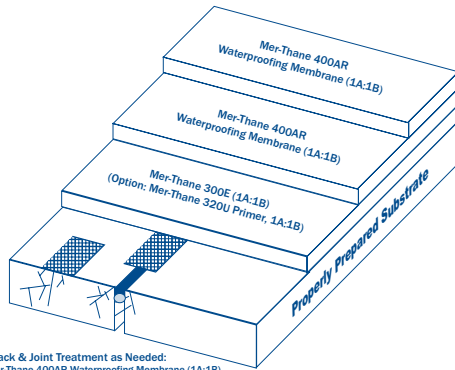




# Mer-Thane 400AR

## Asphalt Extended Aromatic Polyurethane Membrane



Crack & Joint Treatment as Needed:  
Mer-Thane 400AR Waterproofing Membrane (1A:1B)  
+ Scrim (Tietex T272 Polyester or equal)

**MINIMUM DRY FINISHED THICKNESS**  
58 mils (1.47 mm)

### MATERIAL STANDARDS

- ASTM D-2240
- ASTM D-624
- ASTM D-412
- ASTM D-2697
- ASTM D-2369-81

### SPECIFICATION CLASSIFICATIONS

- 07 11 13 Bituminous Dampproofing
- 07 14 16 Cold Fluid-Applied Waterproofing
- 07 19 00 Water Repellents
- 33 01 30.52 Pond & Reservoir Maintenance

### MATERIALS NEEDED

- Joint & Crack Treatment
- Mer-Ko Fiber Tape
  - Mer-Thane 300E Primer, Parts A & B
  - Mer-Thane 320U Primer, Parts A & B (option)
  - Mer-Thane 400AR Waterproofing Membrane
  - Tietex T272 Polyester or equal (option)
  - Mer-Thane 310 Topcoat (option)

### SUBSTRATES

Mer-Thane 400AR can be installed over properly prepared concrete, asphalt, plywood, concrete, steel and metal substrates.

### PRODUCT DESCRIPTION

Mer-Thane 400AR is a monolithic, cold liquid applied, two-component, asphalt extended, aromatic polyurethane waterproofing membrane. This seamless, impact resistant membrane provides superior adhesion, durability, chemical resistance, weatherability and flexibility. Mer-Thane 400AR's superior elongation expands and contracts with normal substrate movement without membrane rupture and is formulated to create an exceptional adhesive bond to various substrates.

Mer-Thane 400AR installs at a minimum 58 mils (1.47mm) DFT and is designed for use over properly prepared concrete, asphalt, plywood, concrete, steel and metal substrates. This versatile system offers a wide range of uses and applications.

### USES/APPLICATIONS

- Pond Liners (with or without scrim)
- Tank Liners
- Containment Areas
- Reservoirs (with scrim)
- Roofing (with scrim)
- Corrosion Protection
- Waterproofing

### ADVANTAGES

- Seamless, monolithic waterproofing membrane
- UV Stable
- VOC Compliant
- Excellent adhesion
- Can be installed over new or existing surfaces
- Maintains elastomeric properties at low temperatures
- Resists degradation from UV, ozone and weathering
- Impervious to water & aqueous chemicals
- Superior chemical resistance
- Outstanding long-term durability and performance
- Superior resistance to flexing and twisting

## COVERAGES

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

### Base Flashing – Primer Coat

Mer-Thane 300E .....	150 ft <sup>2</sup> (13.9 m <sup>2</sup> )/gallon mix
	Yield: 6 mil (0.15mm) DFT
Mer-Thane 320U .....	300 ft <sup>2</sup> (27.9 m <sup>2</sup> )/gallon mix
	Yield: 5 mil (0.13mm) DFT

### Base Flashing – Reinforced Waterproofing Membrane

Mer-Thane 400AR Waterproofing Membrane.....	225 ft <sup>2</sup> ( 20.9 m <sup>2</sup> )/4.5 gallon mix
	Yield: 29 mil (0.7mm) DFT

### Horizontal Deck Surface – Primer Coat

Mer-Thane 300E .....	150 ft <sup>2</sup> (13.9 m <sup>2</sup> )/gallon mix
	Yield: 6 mil (0.15mm) DFT
Mer-Thane 320U .....	300 ft <sup>2</sup> (27.9 m <sup>2</sup> )/1 gallon mix
	Yield: 5 mil (0.13mm) DFT

### Mer-Thane 400AR

**1st. Waterproofing Membrane**.....225 ft<sup>2</sup> ( 20.9 m<sup>2</sup>)/4.5 gallon mix  
Yield: 29 mil (0.7mm) DFT

### Mer-Thane 400AR

**2nd. Waterproofing Membrane** .....225 ft<sup>2</sup> ( 20.9 m<sup>2</sup>)/4.5 gallon mix

**TOTAL FINISHED THICKNESS\* 58 mils (1.47mm) DFT**

Note: Finished thickness excludes scrim and topcoat application.

## COLOR

Mer-Thane 400AR is a black.

Note: Fades to dull black over time.

## INSTALLATION CONDITIONS

Mer-Thane 400AR Membrane 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 400AR Membrane is very sensitive to heat and moisture. Higher temperatures and/or high humidity will significantly accelerate the cure time and shorten the pot life. 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. All plywood substrate joints must be open a minimum of 1/8 inch and clean.

## PACKAGING

	Gallons (U.S.)	Metric Units
<b>Primer</b>		
Mer-Thane 300E Primer Part A .....	1&5 gallon pails.....	3.8&18.9 liter pails
Mer-Thane 300E Primer Part B .....	1&5 gallon pails.....	3.8&18.9 liter pails
Mer-Thane 320U Primer Part A .....	5 gallon pail .....	18.9 liter pail
Mer-Thane 320U Primer Part B .....	5 gallon pail .....	18.9 liter pail

### Waterproof Membrane

Mer-Thane 400AR Part A .....	0.45 gallon jar .....	1.7 liter jar
Mer-Thane 400AR Part B .....	4.05 gallon pail .....	15.33 liter pail

### Topcoat (Option)

Mer-Thane 310 Topcoat.....	5 gallon pail .....	18.9 liter pail
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## 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 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). All control joints in the concrete substrate must be clean and open a minimum of 1/8 inch.

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 – PRIMER & DETAILS

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. Important: When coating over structural concrete containing lightweight aggregate, the entire substrate must be sealed with Mer-Thane 320U Primer prior to application of the waterproofing membrane. (Do not use 320U primer on plywood).

### 1. Primer Coat

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

#### Mixing

The mixing ratio for 300E is 1 Part 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 300E Primer to perimeter flashing using a brush and all horizontal surface areas using a solvent resistant phenolic core roller. When using a phenolic core roller, use extra care not to entrap air into the mixture. Apply evenly over the entire surface at a rate of one gallon per 150 ft<sup>2</sup> (3.79 L per 13.9 m<sup>2</sup>). Apply with continuous coverage to minimize lines and/or streaking.

Allow Mer-Thane 300E to become tack-free before applying the coating to ensure proper adhesion. Coatings must be applied within 10 hours.

Coatings must be applied within 10 hours of cure when relative humidity is above 50% and within 6 hours when below 50% or the surface must be re-primed.

Recommended surface temperature should be greater than 50°F (10°C) and at least 5°F above the dewpoint. Mer-Thane 300E Primer is very sensitive to heat and moisture. Higher temperatures and/or high humidity will significantly accelerate the cure time and pot life. Use caution in batch sizes and thickness of application. Low temperature and/or low humidity extend the cure time.

### 2. Crack and Joint Treatment

#### Plywood Surfaces

Apply 400AR 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 400AR Waterproofing Membrane and reinforce with Mer-Ko 4 inch Fiber Tape embedded for a distance of 2 inches on both sides. Allow the surface to cure for 16 to 48 hours.

#### Concrete Surfaces

Stripe coat all concrete control joints, and sheet metal termination/transitions and any other openings with 400AR 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 400AR Waterproofing Membrane and embed Mer-Ko 4 inch Fiber Tape for a distance of 2 inches on either side of the crack.

#### Embedding Scrim

Embed scrim (Tietex T272 Polyester or equal) immediately into 10-15 mils of the first application of the wet membrane overlapping edges a minimum of 1 inch. Use a dry, solvent-resistant phenolic core roller to press the scrim into the coating to create a bond between the coating and the scrim. Allow to cure 2 to 4 hours.

### 3. Waterproofing Membrane – First Application

Mer-Thane 400AR Waterproofing Membrane is applied in two or more coats to a minimum film thickness of 58 mils.

#### Mixing

Using a mechanical mixer, mix Mer-Thane 400AR Waterproofing Membrane Part A and Part B materials separately. Scrape the sides and the bottom of each pail during the mixing to ensure complete incorporation of all solids. Then, while mixing, slowly pour Part A into Part B. Mechanically mix at slow speed for 1 to 2 minutes 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. Use caution in batch sizes and thickness of application. Mer-Thane 400AR components are pre-measured. DO NOT ESTIMATE MIXING RATIO.

1 half-gallon unit of Part A : 1 five-gallon unit of Part B  
(Net fill: 0.45 gallons Part A) : (Net fill: 4.5 gallons Part B)

#### Applying

*Apply Mer-Thane 400AR Waterproofing Membrane to the perimeter flashing using a brush, or phenolic resin core roller and to the surface using a squeegee or notched trowel at 29 mil DFT. Apply with continuous coverage to minimize lines and/or streaking, back roll as necessary. Use caution in batch sizes and thickness of application.*

*Allow Mer-Thane 400AR Waterproofing Membrane to cure a minimum of 1 hour and a maximum of 8 hours at 70°F (21°C) 50% RH prior to proceeding with additional coats to ensure proper adhesion. If more than 8 hours elapses, the surface will require preparation by mechanical abrasion, cleaning and priming prior to re-coating.*

When scrim is recommended, embed scrim (Tietex T272 Polyester or equal) immediately into 10-15 mils of the first application of the wet membrane overlapping edges a minimum of 1 inch. Use a dry, solvent-resistant phenolic core roller to press the scrim into the coating to create a bond between the coating and the scrim. Allow to cure tack free 2 to 4 hours.

### 4. Waterproofing Membrane – Second Application

Mix and apply a second coat of Mer-Thane 400AR Waterproofing Membrane in the same manner as the first at 29 mils DFT.

#### TECHNICAL DATA

<b>Coverage Rate</b> .....	225 ft <sup>2</sup> (20.9 m <sup>2</sup> )/4.5 gallon mix (@ 29 mils DFT)
<b>Pot Life</b> .....	20-25 minutes (@ 75°F/24°C, RH 50%)
<b>Hardness</b> .....	55 - 65 (ASTM D2240, Shore A)
<b>Tear Resistance</b> .....	100 - 200 pli (ASTM D624, Die C)
<b>Tensile Strength</b> .....	800 - 1000 (ASTM D412)
<b>Elongation</b> .....	350 - 550
<b>Total Solids by Volume</b> .....	89% (ASTM D2697)
<b>VOC</b> .....	0.73 lbs/gallon (87.5 g/L) (ASTM D2369-81)

When required, re-coats may be applied after 1 hour of initial cure. Re-coats or topcoat applications commencing after more than 8 hours of initial application will require surface preparation by mechanical abrasion, cleaning and priming prior to re-coating.

Allow Mer-Thane 400AR Waterproofing Membrane to cure for 24 hours before returning to light service conditions; 72 hours before putting into full service.

#### Topcoat (Option)

##### Mixing

Mer-Thane 310 Topcoat and Mer-Thane 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.

##### Applying

Apply Mer-Thane 310 Topcoat to the properly prepared perimeter flashing and horizontal deck areas using a squeegee and/or a solvent resistant, phenolic core roller. Apply evenly over the entire deck surface at a rate of 1 gallon per 100 ft<sup>2</sup> (3.8 L per 9.3 m<sup>2</sup>) (12 mils DFT). Apply with continuous coverage to minimize lines and/or streaking, use extra care not to entrain air into the material.

Allow Mer Thane 310 Topcoat to cure a minimum of 24 hours and a maximum of 48 hours at 70°F (21°C) RH 50% before proceeding with any additional coats to ensure proper adhesion. Additional 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, back rolling 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 in the product data sheet.

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.

### 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.
- Not suitable as a finished surface, the 400AR Waterproofing Membrane can not withstand direct wear and abrasion, Color may chalk, fade to dull black or discolor over time.
- Not UV stable.
- Do not install in damp weather or when rain is expected within 24 hours.
- Mer-Ko waterproofing systems are designed for professional installation.
- System warranties require installation by currently listed applicators.
- Not designed for heavy steel wheeled traffic.
- Not for use on 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 contemplating a deck installation 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. Contains isocyanates, asphalt and solvent, 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 over spray can damage surrounding surfaces.

### CARE & MAINTENANCE

Mer-Thane 400AR as a stand-alone membrane is designed to provide easy cleanability and low-maintenance. To extend the life of the surface to its maximum potential, establish a regular cleaning schedule using a suitable alcohol-free cleaner and water. Use a stiff broom or scrub brush to remove any contaminants on the surface of the membrane. Rinse thoroughly with clean water after scrubbing.

Mer-Thane 310 Topcoat materials, if used, are designed to resist direct exposure to environmental elements and withstand normal wear. Topcoats should be re-applied every five (5) years for best results, or per the schedule listed on the warranty issued. (Note: The functionality of the Mer-Thane 400AR membrane and the Mer-Thane 310 Topcoat is not impacted by aesthetic imperfections.) Use an alcohol-free, penetrating cleaner (e.g., Toluene, Xylene, MEK, Trisodium Phosphate) or water blasting (5,000 psi maximum) to remove tough stains and contaminants immediately prior to re-sealing. Allow the membrane surface to dry, then prime and apply a fresh coat of Mer-Thane 400AR Waterproofing Membrane or Mer-Thane 310 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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