

# Mer-Thane 400AR

## Asphalt Extended Aromatic Polyurethane Membrane

### PRODUCT DESCRIPTION

Mer-Thane 400AR is a two-component, asphalt extended, aromatic, liquid-applied, polyurethane membrane designed to adhere to most 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.

### CHARACTERISTICS

- Seamless, monolithic waterproofing membrane
- UV Stable
- VOC Compliant
- Excellent adhesion to many sound, clean, dry substrates
- 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

### 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.

### TECHNICAL DATA

|                                     |  |
|-------------------------------------|--|
| <b>Coverage Rate</b> .....          | 225ft <sup>2</sup> (20.9 m <sup>2</sup> )/4.5 gallon mix |
| Yield: 29 mils (0.7mm) 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 psi  |
| (ASTM D624, Die C)                  |  |
| <b>Tensile Strength</b> .....       | 800-1000 psi   |
| (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)                     |  |

- 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.

### COLOR

Mer-Thane 400AR is available in black.  
Note: Fades to dull black over time.

### PACKAGING

Mer-Thane 400AR is available in 4.5 gallon kits:  
Part A: 0.45 gallon jar  
Part B: 4.05 gallon pail

### PRIMER

Mer-Thane 400AR should be used in conjunction with Mer-Thane 320E or 320U primer.

### 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 in damp weather or when rain is 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.

**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 or shortened pot life. Use caution in batch sizes and thickness of application. Mer-Thane 400AR components are pre-measured. DO NOT ESTIMATE MIXING RATIO.

1 unit of Part A : 1 unit of Part B  
(Net fill: 0.45 gallons Part A) : (Net fill: 4.5 gallons Part B)

**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.

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.

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).

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.

**APPLICATION**

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

**CRACK & 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.

When required 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.

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.

**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.

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.

**CLEAN-UP**

Equipment should be cleaned using mineral spirits or an acceptable, environmentally safe solvent immediately after use.

**FIRST AID**

**EYE CONTACT**

Flush eye with water for at least 15 minutes. Get medical attention promptly.

**INHALATION**

Take person to fresh air. If breathing is difficult, administer oxygen. Get medical attention immediately.

**SKIN CONTACT**

Wipe off contacted area and wash thoroughly with soap and water. If redness, itching, or a burning sensation develops, seek medical attention immediately.

**INGESTION**

Do not induce vomiting. Consult physician immediately.

**FIRE**

Wear self-contained breathing apparatus with full face piece and protective clothing. Use foam, carbon dioxide, dry chemical, and/or halogenated agents.

**SPILL OR LEAK**

Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, and remove from work area.

**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**

Limited manufacturer's defect warranty. Contact Mer-Ko Technical Service Department for specific warranty information or [www.parexmer-ko.com](http://www.parexmer-ko.com)

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