



Dual Pro 380 Specifications

CSI SECTIONS 07 14 16
CSI SECTIONS 07 18 13

CSI SECTION 07 14 16 - Cold Fluid-Applied Waterproofing
CSI SECTION 07 18 13 - Pedestrian Traffic Coatings

SYSTEM OVERVIEW

The Mer-Ko™ Dual Pro 380 is a multi-layer, cementitious elastomeric decking system that provides seamless, dual waterproofing membrane, pedestrian walking and roof deck system designed for use on above grade horizontal plywood, concrete or over other approved substrates.

Dual Pro 380 system is installed using the following components:

- Polyurethane Caulking (as needed for Concrete Joint Treatment)
- Waterproof Membrane Adhesive
- Sheet Waterproof Membrane
- Waterproof Membrane Seam Adhesive
- Metal lath
- Cementitious Underlayment
- Emulsion (as required for Underlayment)
- Cementitious Primer (two component)
- Emulsion (for cementitious materials)
- Cold fluid Waterproofing Membrane
- Reinforcing Fabrics (Waterproofing Membrane Reinforcement)
- Cementitious Bodycoat (two component)
- Cementitious Membrane Filler (two component)
- Primer Sealer
- Acrylic Topcoat Sealer

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Installation of multi-layer waterproof pedestrian walking roof deck system designed for use over plywood, concrete or other approved substrates.
 1. Related Work:Substrate; Plywood or Concrete
- B. Work not Included:
 1. Finishing and corrective work in connection with surfaces to receive the system.
 2. Furnishing and installing metal flashings, drains, vents, ducts, curbs, expansion joints or any other through deck penetration.

1.2 RELATED SECTIONS

- A. Section 06 16 33 - Plywood Sheathing
- B. Section 03 00 00 - Cast In Place Concrete
- C. Section 03 05 00 - Underlayment
- D. Section 07 62 00 - Sheet Metal Flashing and Trim
- E. Section 07 90 00 - Joint Protection

1.3 REFERENCE

- A. AATCC 9642 - Aspergillus Niger Fungus and Micro-Organism Resistance
- B. ANSI A-118.10 Load Bearing, Bonded, Waterproof Membranes for Thin-set Ceramic Tile and Dimension Stone Installations
- C. ANSI A118.12 - Specifications for Crack Isolation
- D. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- E. ASTM C482 - Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste
- F. ASTM C734 - Standard Test Method for Low-Temperature Flexibility of Latex Sealants After Artificial Weathering
- G. ASTM E638 – Standard Test Method for Tensile Properties of Plastics
- H. ASTM D570 - Standard Test Method for Water Absorption of Plastics
- I. ASTM D751 Standard Test Methods for Coated Fabrics
- J. ASTM D1204 - Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
- K. ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
- G. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
- H. ASTM G23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

1.4 SYSTEM DESCRIPTION

- A. Description of Dual Pro 380:

Dual Pro 380 is a multi-layer, dual waterproofing membrane, pedestrian walking and roof deck system designed for use on above grade horizontal plywood, concrete or other approved substrates, installed at 3/4" to 3-3/4" (19mm to 95mm) finishes thickness.

This system consists of: Hydro Shield 380 Waterproof Membrane, Hydro Shield 380 Adhesive, Hydro Shield 380 Seam Adhesive, Metal Lath, Cementitious Underlayment, a Two Component Membrane-Primer, Cold Fluid Applied Waterproof Membrane, Synthetic Burlap Perimeter-Reinforcing Fabric, Fibrous Polyester Horizontal-Reinforcing Fabric, a Two Component Bodycoat, a Two Component Membrane Filler, Prep Seal Primer and an Acrylic Topcoat Sealer.

- B. Dual Pro 380 Functional Criteria:

- 1. General:

- a. A minimum finished roof deck slope of 2% (1/4 unit vertical in 12 units horizontal) is required for proper drainage to either a double drip edge metal flashing or dual deck drain having an attachment/receiver flange.
- b. Minimum No. 26 gage bonderized steel or equivalent flashing is installed around the perimeter.
- c. The use of Stainless steel requires scuffing with 100-120 grit sand paper.
- d. The use of copper perimeter flashings is not approved.
- e. Through deck penetrations are required to be flashed and or sealed.
- f. Building code conformance: The construction shall be acceptable for use under the building code in force in the jurisdiction of the project.
- g. Concrete control joints should coincide with stress relief concentration points, with a maximum spacing of 20 ft (6.1 m).

2. Performance Requirements

a. Deck Wearing Surface

| Test | Method | Results |
|-----------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------|
| Abrasion Resistance | ASTM D4060 C-17 Wheel, 1,000 gram load for 1,000 cycles | 0.375 gram loss |
| Accelerated Aging | ASTM G23 | 2000 hours, No visual signs of failure |
| Compressive Strength | ASTM C109 | 3,500 psi |
| Fire Rating | AC 39/S4.3, UBC 15-2 | One-Hour, Class A |
| Indentation Characteristics | MIL-D-3134, Para. 3.9, 4.7.4 | Complies |
| Low Temperature Flexibility | ASTM C734 (Burlap reinforced membrane) | > 374 psi |
| Membrane Value | | No seepage under water-heads to 115 ft |
| Ozone Resistance | | No visual adverse effects after 30 days exposure |
| Slip Resistance | ASTM D2047 | Dry Leather: 0.63 Wet Leather: 0.72 Dry Rubber: 0.80 Wet Rubber: 0.84 |
| Tensile Strength | ASTM D638 (Glassmat reinforce) | >625 psi |
| Water Absorption | ASTM D570 | Average 7.9% |

b. Hydro-Shield 380 Waterproofing Membrane

| | | |
|------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------|
| ANSI A-118.12 | | Exceeds High Performance Criteria |
| ANSI A-118.10 /A-118.12 | | Meets or Exceeds |
| Bond Strength | ASTM C482 | 7 day: 152.9, 4 week: 131.3, 12 week: 115.2/req. 7 day water immersion: 142.5, 100 day: 135.6/req. |
| Breaking Strength | ASTM D751 | Pass |
| Dimensional Stability | ASTM D1204 | Passed |
| IAPMO | | Listed |
| Mildew and Fungus Resistance | AATCC 9642 | Passed |
| Seam Strength | ASTM D751/ASTM C482 | Passed |

c. Fabric Reinforced Membrane

| | | |
|-----------------------------|----------------------------------------|----------------------------------------|
| Elongation | ASTM D638 | 0.04 ft./ft. |
| Freeze Thaw | 250 Cycles after cure | No Change |
| Low Temperature Flexibility | ASTM C734 (Burlap reinforced membrane) | Passed |
| Membrane Value | | No seepage under water-heads to 115 ft |

1.5 SUBMITTALS

- A. General: Submit Samples, Evaluation Reports and Certificates in accordance with Division 1 General Requirements Submittal Section.
- B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make approved samples available at job site.
- C. Manufacturer's Warranty: Submit sample copies of Manufacturer's Warranty indicating Single Source Responsibility.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Shall have marketed waterproof pedestrian walking and roof deck systems in the United States for at least ten years and shall have completed projects of same building size and type as this project.
 - 2. Applicator: Shall have attended a Mer-Ko Educational Seminar for installation of system and shall be currently listed and possess a certificate of attendance.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver Mer-Ko Dual Pro 380 products in original packaging with manufacturer's identification.
- B. Storage: Store materials supplied by Mer-Ko in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40°F (4°C) and below 100°F (38°C) in accordance with manufacturer's instructions.

1.8 PROJECT / SITE CONDITIONS

- A. Installation Ambient Air Temperature: Minimum of 40°F (4°C) and rising, and remain so for a minimum of 24 hours thereafter.
- B. Substrate Temperature: Do not apply Mer-Ko materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- C. Inclement Weather: Do not apply Mer-Ko materials during inclement weather, unless appropriate protection is employed.
- D. Sunlight Exposure: Avoid, when possible, installation of the Mer-Ko materials in direct sunlight during high temperatures. Application in direct sunlight during hot weather may adversely affect aesthetics.
- E. Mer-Ko materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 40°F (4°C) within 24 hours of application.
- F. Prior to installation, the surface shall be inspected for contamination, or other defects that may adversely affect the performance of the Mer-Ko materials and shall be free of moisture.

1.9 COORDINATION AND SCHEDULING:

- A. Coordination: Coordinate Mer-Ko Dual Pro 380 installation with other construction operations.

1.10 WARRANTY

- A. Warranty: Upon request, at completion of installation, provide Mer-Ko Limited Warranty. See Mer-Ko Application Guide for Warranty Schedule.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: ParexLahabra, Inc., 4125 E. LaPalma Ave., Suite 250, Anaheim, CA 92807
- B. Components: Obtain components of Mer-Ko Dual Pro 380 from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from ParexLahabra for this project.

2.2 MATERIALS

A. Joint Filling:

1. Mer-Ko ARC Membrane Filler: Portland cement and sand based material, two component-requiring ARC Emulsion.

-OR-

1. Mer-Ko PUC 1000 Sealant: One-part, gun-grade, non-sag, non-staining polyurethane sealant, used to fill concrete control joints.

B. Waterproof Membrane Sheet

1. Mer-Ko Hydro-Shield 380 Adhesive: One-part, designed for use with Mer-Ko Hydro-Shield 380 Waterproofing Membrane.
2. Mer-Ko Hydro-Shield 380 Waterproofing Membrane: Thin load bearing sheet applied waterproofing and Crack Isolation membrane composed of a three ply non-woven material.
3. Mer-Ko Hydro-Shield 380 Seam Adhesive: One-part, gun-grade, designed for use with Mer-Ko Hydro-Shield 380 Waterproofing Membrane.

EDITORS NOTE: CHOOSE UNDERLAYMENT THAT CREATES OR MAINTAINS THE REQUIRED SLOPE.

C. Metal Lath Reinforced Underlayment:

1. Mer-Ko Standard Underlayment: High-strength, flexible, trowel grade, polymer modified-requiring Water, cementitious underlayment from 0.5 to 3 inches (13 to 76.2 mm) finished thickness.

- OR -

1. Mer-Ko Rapid Set Underlayment: Fast-setting, trowel grade, polymer modified-requiring Water, cementitious underlayment from 0.5 to 3 inches (13 to 76.2 mm) finished thickness.

- OR -

1. Mer-Ko Thin Slope Underlayment: High Strength, trowel grade, polymer reinforced two-component-requiring Thin Slope Emulsion, cementitious underlayment from 0.5 to 1 inch (13 to 25.4mm) finished thickness.

- OR -

1. Mer-Ko High Build Underlayment: High-strength, trowel grade, polymer reinforced two-component-requiring High Build 150 Emulsion, cementitious underlayment from 1 to 3.5 inches (25.4mm to 88.9 mm) finished thickness.

D. Primer Coat

1. Mer-Ko ARC Membrane Filler - Portland cement and sand based material, for use with ARC Emulsion to create a membrane bonding primer.

E. Base Flashing – Reinforced Waterproof Membrane

1. Mer-Ko ARC Waterproofing Membrane: Asphalt modified latex elastomeric waterproofing membrane reinforced with fabric.
2. Mer-Ko Type III, 10" woven synthetic burlap fabric: Standard vertical to horizontal transition reinforcement.

F. Horizontal Surface – Reinforced Waterproof Membrane

1. Mer-Ko ARC Waterproofing Membrane: Asphalt modified latex elastomeric waterproofing membrane reinforced with fabric.
2. Mer-Ko Type II Glassmat Reinforcing Fabric: 36" bonded polyester fibers, standard horizontal waterproofing membrane reinforcement of Mer-Ko Dual Pro 380 System.

- OR -

2. Mer-Ko Type III, 40" woven synthetic burlap fabric: Optional horizontal fabric reinforcement.

- G. Bodycoat
 - 1. Mer-Ko Weather Deck Bodycoat: Portland cement and sand based material, for use with Weather Deck Emulsion to create a durable wearing surface.
- H. Smoothing and Optional Texture Coat
 - 1. Weather Deck Membrane Filler: Portland cement, and sand based material for use with Weather Deck Emulsion used to create an aesthetic surface.
- I. Primer
 - 1. Mer-Ko Prep Seal: 100% acrylic based coating to prepare surfaces for Mer-Ko Seal or when more than 72 hours elapses between applications to insure bonding.
- J. Colored Topcoat Sealer
 - 1. Mer-Ko Seal: factor blended, 100% acrylic polymer based integrally colored topcoat.
 - 2. Finish type and texture as selected by Designer

2.3 RELATED MATERIALS AND ACCESSORIES

- A. Substrate Materials: Substrate shall be installed in accordance with its industry standards and applicable building code.
 - 1. Plywood
 - a. Shall be a minimum 5/8 inch thick (16mm) exterior grade, PS 1, exposure one, plywood, complying, and installed in accordance with, 2006 or 2009 International Building Code with all edges blocked.
 - b. Face plies must be perpendicular to the supports.
 - c. 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 (102 mm) on center at sheet perimeters and 8 inches (203.2mm) on center in the field, or as otherwise required by the applicable building code, whichever is more restrictive.
 - d. Plywood boards are spaced a minimum 1/8 inch.
 - 2. Concrete
 - 1. Surfaces must be clean, sound and provide a uniform surface free of depressions and ridges.
 - 2. Prepare concrete surfaces using a power sprayer, grinder or shot blast as required to produce a clean, sound substrate.
 - 3. All holes must be cleaned and filled with an appropriate Mer-Ko Underlayment. All high spots must be removed by chipping or grinding.
 - 4. Concrete control joints should coincide with stress relief concentration points, with a maximum spacing of 20 ft (6.1 m).
 - 3. Flashing: Refer to Division 07 Flashing Section for flashing materials.
 - 4. Metal lath reinforcement for Underlayment. Minimum No. 17, 1.5" X 1.5" Self Furred, Galvanized, Welded Wire-Structalath™ or Self Furred, Galvanized Expanded Metal Lath, minimum 2.5 lb/sq.yd.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify project site conditions under provisions of Section 01 00 00.
- B. Substrate Examination: Examine prior to System installation as follows:
 - 1. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
 - 2. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.

- C. Advise Contractor of discrepancies preventing installation of the Mer-Ko Dual Pro 380 System. Do not proceed with the Mer-Ko Dual Pro 380 System work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Protection: Protect surrounding material surfaces and areas during installation of system.
- B. Clean surfaces thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 MIXING

- A. Mix Mer-Ko proprietary products in accordance with manufacturer's instructions.

3.4 APPLICATION

- A. General: Installation shall conform to this specification and Parex Mer-Ko written instructions and drawing details.

3.5 CLEAN-UP

- A. Removal: Remove and legally dispose of Mer-Ko Dual Pro 380 component debris material from job site.
- B. Clean Coating surfaces and work area of foreign materials resulting from operations.

3.6 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed deck from dust, dirt, precipitation, and freezing during installation.
- C. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully cured and dry.
- D. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.

END OF SECTION

Disclaimer This guide specification is intended for use by a qualified designer. The guide specification is not intended to be used verbatim as an actual specification without appropriate modifications for the specific use intended. The guide specification must be integrated into and coordinated with the procedures of each design firm, and the requirements of a specific project.



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