

General Specification for Applications with Mx-Membrane Coating System

Part 1-General

1.01 Description of Work

A. This Section specifies the application of coating/lining systems to items and surfaces scheduled, including surface preparation, bug-hole filling, prime coats, fluoropolymer membrane lining, and top coats.

B. Types of Special Coating/Lining Systems required for the Project include the following:

1. P500W-A4-48: 5 mil PTFE film with a 4 mil acrylic pressure sensitive adhesive
2. P1000W-A4-48: 10 mil PTFE film with a 4 mil acrylic pressure sensitive adhesive
3. P500-A4: 5 mil PTFE film with an acrylic pressure sensitive adhesive tape
4. Two-part component 100% solids Epoxy topcoat w/ aggregate (optional depending upon application conditions)
5. Viton Fluoroelastomer caulk edge sealant (PeISeal Part # 2531)

1.02 References and Standards

A. All references and standards listed shall be the latest revisions.

B. International Concrete Repair Institute (ICRI)

1. ICRI Technical Guidelines 310.2: Guide for Selecting and Specifying Surface Preparation for Sealers, Coatings, and Membranes.

C. Society of Protective Coatings (SSPC)

1. SSPC SP 13: Surface Preparation of Concrete

D. National Association of Corrosion Engineers (NACE)

1. NACE No. 6: Surface Preparation of Concrete

E. American Society for Testing and Materials (ASTM)

1. ASTM E-1907: Standard Guide to Methods of Evaluating Moisture Conditions of Concrete

1.03 Delivery, Storage and Handling

A. Product to be delivered in the manufacturer's original, new, unopened packages and containers and shall be clearly marked with manufacturer's identification. MSDS documents shall be provided for all materials.

B. Materials not in use shall be stored in covered containers in a dry- well ventilated area at an ambient temperature between 50°-90° F, away from sunlight, heat, or other hazards.

1.04 Project Conditions

A. Concrete substrates shall be free of contamination specifically slats that could affect adhesion of the butyl lining system. Existing or new concrete shall be prepared according to NACE No. 6/SSPC-SP-13.

Concrete surface temperature should fall in the range of specified supplier during installation and recommended hour cure period.

B. Existing coatings

The majority of coatings/linings need not be removed (elastomeric materials being one exception) as long as they are mechanically sound and clean (i.e. galvanizing, baked phenolics, etc.).

C. Remove all deteriorated concrete using a suitable method as outlined in ICRI Guide 03732. Check the surface for soluble salts. Salt contamination will adversely affect adhesion and will cause premature failure of the entire coating system. Clean entire surface of all visible oil, grease, dirt, rust, mill scale, oxides, corrosion products, un-bonded coatings/linings, and other foreign matter.

D. Concrete shall have been prepared to minimize cracking, curling, and slab deflections, and shall contain properly designed control and isolation joints.

E. Concrete must be free of excessive moisture transmission (MVT), and negative side water intrusion. Concrete must have 3 pounds or less of MVT when tested per ATMS E-1907. Do not place coating/lining system over locations containing trapped moisture without prior approval from the manufacturer.

F. New concrete must be cured a minimum of 28 days. Concrete surfaces must be acid-etched, scarified, or shot blasted to remove surface lamination. A good bonding tooth, the texture of 60 grit sandpaper, is desired for maximum adhesion, with removal of all surface glaze.

F. Surfaces must be kept free of traffic once surface preparation has begun, and no trades shall be permitted in areas during the application and curing of the primer, liner, and top coat.

G. Protect adjacent surfaces from damage, resulting from work of this application. If necessary, mask/cover adjacent surfaces, fixtures, equipments, etc. by suitable means.

Part 2-Products

2.0 System Performance Requirements

A. Material Compatibility: Coating, repair materials, primers, bug-hole fillers, finish coat and related materials shall be compatible with one another and the substrates indicated shall be under the conditions of service required by the manufacturer.

B. Acceptable Manufacturers:

Integument Technologies

72 Pearce Avenue

Tonawanda, NY 14150

Phone 716-873-1199

Fax: 716-873-1303

Website: www.integument.com

3.0 Execution

A. Site Inspection and Testing: Ensure that environmental and site conditions are suitable for application and curing. Temperature of the surface to be coated must be at least 5° above the dew point temperature of the air.

B. Layout: For the PTFE membrane application, the Installer must determine the layout of the surface to be coated. In order to minimize seams and maximize the ease of application, mental layout prior to applying the lining is important. Things to consider for layout are: accessibility, vertical and horizontal surfaces, nozzles, manways, location of any internals, surface geometries, length of individual pieces, diameters, etc. PTFE membrane will need to be cut/trimmed to the required dimensions that best suits the application.

C. PTFE membrane application: The PTFE membrane consists of a 30 mil pressure sensitive pure butyl rubber adhesive sandwiched between a 5 or 10 mil film and a plastic release liner. The release liner is removed during installation to expose the adhesive, then discarded. It is best to begin with the walls of the containment area first, then process to the floor area.

In general, it is best to layout the longest piece of film first. Begin by cutting to length the first piece. Layout and tape in place the first piece. Begin by removing a small section of the release liner (approximately 3" back from the end), and apply the film to the surface. Remove the release liner in increments of 4"-6" at a time. Using either a rubber roller or dry film squeegee, press the film onto the surface. Take the second section of film and lay it out butting up against the first piece. Apply the entire second piece. Continue applying sections of film until the entire surface is coated.

E. Seaming:

Currently there are three ways to ensure a sound joint. They are as follows:

Overlap: Is typically used in non-aggressive environments where the adhesive is unaffected by the corrodent (i.e. water, ozone, certain food materials). The environments typically include corrosive atmospheres, splash & spill and secondary containment conditions or mild immersion services.

Overlap w/ Two-part component 100% solids Epoxy primer: Used when the corrodent must be isolated from the adhesive. The environments typically include corrosive atmospheres, splash & spill and secondary containment conditions or mild immersion services.

Butt Joint w/ Sealant: Used when installing Mx-Membrane material. Mx Membrane film is butt-seamed and a tape is applied over the resulting seam, typically 3-4 inches wide. The exposed adhesive edges can be sealed with a fluoroelastomer caulk, epoxy, vinyl ester, or another appropriate sealant dependent upon the specific chemical exposure conditions.

F. Inspection:

Visual: A visual inspection shall be performed to ensure a sound application. Things to look for during the inspection are:

1. Air Entrapment: Must be minimized to ensure a sound bond. Large air pockets can sometimes be worked out, or a needle can be used to expel the air, followed by applying pressure to the film. A patch must then be applied that covers the hole made by the needle by at least 1/2" on all sides.
2. Edges: To ensure adequate bonding at the edges (i.e. sharp corners yield very little adhesive) it is best to cut all corners to at least a 1/2" radius.
3. Damaged film: After installation, an inspection should identify and reseal any lifted edges/seams or patching any holes or tears that may have occurred during installation. These repairs can be done by simply using the PTFE tape with acrylic pressure sensitive adhesive over any damaged areas as a patch repair.

4.0 Warranty

A. To be determined

