Urethane Polymers International

Application/Specification Data

Uradek System # 65-SC

Elastomeric, Urethane, Pedestrian Waterproofing System

1. GENERAL

1.1 Scope: This specification covers the installation of a durable, decorative, abrasion resistant, low VOC, elastomeric urethane waterproofing system designed for surfaces subject to heavier-duty pedestrian traffic. It is a monolithic system, designed to positively waterproof concrete and plywood surfaces by excluding moisture penetration during low temperature freeze-thaw cycling or high temperature, high humidity thermal cycling. This pedestrian surfacing system has outstanding adhesion, impact and abrasion resistance, while exhibiting superior crack-bridging flexibility and weather resistance.

1.2 Work Included: Install waterproofing consisting of caulking and flashing reinforcement for joints, UPI Low VOC Epoxy Primer, UI-7013-SC Base Membrane, UI-7014-SC Elastomeric Membrane and UI-7016-SC Aliphatic Top Coat. Apply in accordance with these specifications and latest general instructions supplied by Urethane Polymers International, Inc.

1.3 Work Not Included: Work under this section shall not include finishing and corrective work in connection with the surfaces which are to receive the liquid-applied coating system. Nor does it include furnishing and installation of metal flashing, drains, vents, ducts, curbs or any other penetration through the deck.

1.4 Condition of Concrete Surfaces:
1.41 The concrete surfaces shall be of sound structural grade (3000 psi compressive strength recommended), of adequate design and thickness, and shall have a steel troweled followed by a fine broom finish, free of fins, ridges, voids or air entrained holes.
1.42 Concrete shall be cured by water curing method or pure sodium silicate. Curing compounds or curing agents of any type shall not be used unless they have prior approval from UPI.
1.43 Concrete shall be cured at least 28 days and shall be sloped for proper drainage.
1.44 Saw-cut control joints and/or expansion joints shall have been properly installed at strategic points throughout the field of the deck to control cracking caused by deflection and shrinkage.
1.45 Any required crickets or drains should be installed at the time the main deck is poured (i.e. monolithic).
1.46 Voids, rock pockets and excessively rough surfaces shall be repaired with epoxy grout or ground to match the unrepaired areas.
1.47 When metal decking is used as the concrete form, it shall be of the "ventilating type".
1.48 All concrete decks poured over precast "T's", planks or slabs, shall have control joints placed directly over all corresponding joints or openings in the precast units.

1.5 Condition of Plywood Surfaces:
1.51 The plywood shall be identified as conforming to U.S. Product Standard PS 1-66 and shall be ¾ inch minimum thickness, tongue and groove, exterior grade B/C, or better. Install with B side up.
1.52 The tongue and groove plywood panels shall be tightly fitted while leaving 1/16 inch separation between panels.
1.53 Plywood shall be fastened with non-corroding screws, 10d annular ring nails or twist shank nails. Space fasteners 6 inches on center along panel edges and 8 inches on center over intermediate supports.
1.54 All decks shall be designed to eliminate vertical deflection by the proper selection of plywood thickness and the proper spacing and thickness of supporting joists.
1.55 All plywood edges must be supported on blocking or primary framing with plywood panels continuous across two or more spans.
1.56 All adjacent metal flashing, scuppers, vents, etc. shall be galvanized or non-ferrous metal tightly screwed or nailed with ring shank nails, at intervals no greater than 4 inches on center.
1.57 The plywood deck shall be properly sloped so as to freely drain.

1.6 Job Conditions:
1.61 Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner, or general contractor shall be notified in writing and application shall not begin until corrections are made.
1.62 Do not proceed with application of materials when deck temperatures are less than 40°F or if precipitation is imminent.
1.63 Warn personnel against breathing of vapors and contact of material with skin or eyes. In confined areas, workmen shall wear the appropriate MSHA/NIOSH approved respiratory protective gear and protective clothing.
1.64 All gas flames and electrical apparatus shall be shut down prior to the start of and during coating application and curing.
1.65 Protect plants, vegetation, and animals which might be adversely affected by the coating operation.
1.66 This coating system should not be installed onto on-grade slabs, onto split slabs with buried membrane or onto slabs over unvented metal pans without prior approval from UPI.

2. QUALIFICATIONS

2.1 Waterproofing Applicator:
2.11 Shall be experienced in successfully applying the same or similar materials and shall be specifically approved as a Factory Authorized Applicator in writing by UPI.
2.12 Shall be financially responsible and be ready and able to submit performance bonds, if required.
2.13 Shall submit to the general contractor and the building owner the required certificates of insurance prior to starting the project.

2.2 Sample Submittals: Submit samples not less than 3" X 4" in size, showing the approximate applied thickness, texture and color. The submittal shall also include the manufacturer's application-specification sheet and a list of materials by name and quantity to be used on this project.

3. MATERIALS

The materials shall be delivered to the job site in the original sealed containers bearing the product name, color, manufacturer's lot number, directions for use and precautionary labels. All products listed are manufactured or supplied by UPI.

3.1 Caulking Compound: Shall be a one-component or two-component polyurethane compound.

3.2 Flashing Reinforcement: Shall be non-staining, uncured neoprene sheet at 45-60 mils thickness, woven polyester or woven fiberglass reinforcing fabric, or as recommended by UPI.

3.3 Primer: Shall be UI-7012 water-based, low viscosity, two-component primer/sealer.

3.4 Base Membrane: Shall be UI-7013-SC single-component, high adhesion, moisture cured, polyurethane membrane and shall meet or exceed the following typical performance properties:

UI-7013-SC Base Coat

Property	Typical Value	Test Method
Composition	Aromatic Urethane	------
Weight Solids	92 ± 2%	------
VOC Content	Less than 100 gm/l	Calculated
Hardness, Shore A	65 ± 5	ASTM D-2240
Tensile Strength	900 ± 100 psi	ASTM D-412
Ultimate Elongation	550% ± 100	ASTM D-412
Tear Resistance	150 ± 25 lb./in.	ASTM D-1004
Weather Resistance	Slight Checking at 500 hours	ASTM G-23
Adhesion to Primed Concrete	20 pli	ASTM D-903
Low Temp Flexibility	-30°F	------

3.5 Elastomeric Membrane: Shall be UI-7014-SC high tensile strength, moisture cured elastomeric polyurethane and shall meet or exceed the following typical performance properties:

UI-7014-SC Intermediate Coat

Property	Typical Value	Test Method
Composition	Aromatic Urethane	
Weight Solids	92 ± 2%	
VOC Content	Less than 100 gm/l	Calculated
Hardness, Shore A	75 ± 5	ASTM D-2240
Tensile Strength	1350 ± 150 psi	ASTM D-412
Ultimate Elongation	450% ± 50	ASTM D-412
Tear Resistance	200 ± 50 lb./in.	ASTM D-1004
Weather Resistance	Slight Chalk at 1000 hours	ASTM G-23
Adhesion to Base Coat	30 pli	ASTM D-903
Low Temp Flexibility	-30F	

3.6 Abrasion-Resistant Top Coat: Shall be UI-7016-SC single component, high tensile strength, abrasion resistant and weather-resistant aliphatic polyurethane coating and shall meet or exceed the following typical performance properties:

UI-7016-SC Top Coat

Property	Typical Value	Test Method
Composition	Aliphatic, Saturated Polyester Urethane	
Weight Solids	82 ± 2%	
VOC Content	Less than 100 gm/l	Calculated
Hardness, Shore A	90 ± 5	ASTM D-2240
Tensile Strength	3200 ± 300 psi	ASTM D-412
Ultimate Elongation	250% ± 75	ASTM D-12
Tear Resistance	300 ± 50 lb./in.	ASTM D-1004
Water Permeability	Less than 0.1 Perm	ASTM E-96
Weather Resistance	No Chalking @ 2000 hrs.	ASTM G-23
Abrasion Resistance	Negligible Change, CS-17 wheels,1000 cycles, 1000 gm. load	ASTM C-501

3.7 Aggregate: Shall be rounded, non-angular, blended 16 or 20 mesh flint shot silica, or equivalent washed and kiln-dried aggregate.

4. SUBSTRATE PREPARATION

4.1 Concrete Surfaces:
4.11 The concrete surface must be thoroughly clean, dry and free from any surface contaminates or cleaning residue. Acceptable methods of cleaning are sandblasting, shotblasting or mechanical grinding followed by the complete and thorough removal of any residue.
4.12 All cracks over 1/16 inch in width and all moving cracks under 1/16 inch in width shall be routed out to ¼ inch minimum in width and depth and filled flushed with polyurethane elastomeric sealant.
4.13 All cracks shall be stripe-coated with a 4 inch wide by 30 mils thick detail coat of URA-Flash or UI-7013-T.
4.14 Apply a ¾ inch cant of polyurethane sealant around all pipes, drains and vertical junctions and allow to thoroughly cure.
4.15 All expansion and contraction joints shall be cleaned, primed, fitted with a backing rod and caulked with elastomeric polyurethane sealants. Joints under ½ inch in width and all caulked cracks shall be stripe-coated with a 30-mil preparatory coat of URA-Flash or UI-7013-T.
4.16 Prior to commencing with the application, all surfaces to be coated shall be dry and free from any surface contaminates or cleaning residues.

4.2 Plywood Surfaces:
4.21 Sweep all plywood joints clean and free of sawdust. Fill all separations over 1/16 inch in width with polyurethane sealants. Apply joint reinforcement consisting of a brush coat of UI-7013-T Detail Coat 30 mils thick, 5 inches wide, centered over all joints and transitions to metal flashings, drip-edges, etc. Imbed 3 to 4 inch wide UPI reinforcing fabric into the wet membrane. Allow detail membrane to cure overnight or until firm.
4.22 Damaged plywood panels shall be repaired or replaced prior to coating.

4.3 Flashing Reinforcement:
4.31 All required metal or neoprene flashing and fabric flashing reinforcement and all sealant cants shall be installed at this time.
4.32 All metal shall be delivered shop primed and then be field primed with UI-7012 Epoxy Primer. (For metal surfaces which may exhibit adhesion difficulties, first prime and condition with a zinc-rich epoxy primer.)
4.33 UI-7013-SC Base Membrane is used as an adhesive for the reinforcing fabric. The reinforcing fabric shall be laid into the wet base membrane with roller, brush or broad blade knife. The fabric shall be laid relaxed, smooth and wrinkle-free and thoroughly embedded in the base membrane.
4.34 Flashings and polyester reinforcing fabric shall be coated (with base coats and top coats) each time the deck is coated.

4.4 Priming: Stir each side separately and then mix all of Part A with all of Part B. Use a mixing paddle on a slow speed drill motor. Mix for 2 to 3 minutes and let mixed primer sit 30 minutes before applying.

5. APPLICATION OF MEMBRANE

5.1 Primer: Apply UI-7012 Epoxy Primer at the approximate rate of 250-300 square feet per gallon. Allow primer to dry until it is tack-free. Within 8 hours of application of the primer, the base coat must be applied. If the base coat can't be applied within 8 hours or if the primer is contaminated by rain, then lightly reprime.

5.2 UI-7013-SC Base Membrane: shall be trowel or squeegee and roller applied in one or two uniform coats at the rate of 2.25 gallons per 100 square feet or as needed in order to obtain an average film thickness of 36 wet mils. Allow each layer of UI-7013-SC Base Membrane to cure to a firm rubber before applying the next layer of membrane. Do not apply coating system over joints greater than ½ inch wide.

5.3 UI-7014-SC Elastomeric Membrane: shall be trowel or squeegee and roller applied in one uniform coat at the rate of one gallon minimum per 80 square feet or as needed in order to obtain an average thickness of 20 wet mils. While the coating is still fluid, uniformly broadcast and thoroughly encapsulate 16 or 20 mesh aggregate into the coating at the rate of 35-40 lbs. per 100 square feet. (If the preceding layers of membrane should become dirty or contaminated or lose their surface tack, wipe clean with xylene immediately before applying the next application.) Allow a minimum of 24 hours curing time at 77ºF before applying the next coat.

5.4 UI-7016-SC Top Coat: shall be spray or flat squeegee and roller applied in one uniform coat at the rate of one gallon minimum per 90 square feet in order to obtain an average coating thickness of 18 wet mils and to completely and uniformly coat the aggregate.

5.5 Thickness: The overall dry film thickness of the completed waterproofing system, excluding aggregate, shall average 65±3 mils.

6. APPLICABLE STANDARDS/SPECIFICATIONS

This Traffic Bearing Coating System shall comply with all applicable Federal EPA VOC regulations and applicable 2006 California Regional Air Quality and 2006 South Coast Air Quality VOC Regulations and shall meet the performance requirements of ASTM C-957-87, High Solids Content, Cold Liquid Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.

7. GUARANTEE / WARRANTY

When this Elastomeric Coating System is installed by a Factory Authorized Applicator, is inspected and approved in accordance with these specifications, and after receipt of the final payment, the Factory Authorized Applicator shall issue the applicator's customary and standard installation guarantee covering defects in material and workmanship.

UPI warrants its products to be free of defects in workmanship and materials only at the time of shipment from our factory. If any UPI materials prove to contain manufacturing defects that substantially affect their performance UPI will, at its option, replace the material or refund the purchase price.

The dollar value of UPI's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the UPI materials in question.

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