



# APPLICATION / SPECIFICATION DATA

## URADEK SYSTEM #55

### ELASTOMERIC URETHANE WATERPROOFING SYSTEM, PEDESTRIAN TRAFFIC

#### 1. GENERAL

**1.1 Scope:** This specification covers the installation of a durable waterproof and weatherproof elastomeric urethane waterproofing system suitable for exterior mechanical equipment decks. It is a monolithic system, designed with integral flashing around and over equipment pads to effectively seal the areas underneath from moisture penetration. This system incorporates excellent adhesion, flexibility and abrasion resistance while demonstrating superior chemical stability. Physical stresses imposed by vibration of equipment will not cause delamination or rupture of the waterproof coating system.

**1.2 Work Included:** Install waterproofing consisting of caulking and flashing reinforcement for joints, UI-7118 Low VOC Epoxy Primer, UI-7013-SC Base Membrane, UI-7016-AR-SC Aggregate Binder and UI-7016-AL-SC Aliphatic Top Coat. Apply in accordance with these specifications and latest general instructions supplied by Urethane Polymers International, Inc. (UPI).

**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 finish 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 Job Conditions:

1.51 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.

1.52 Do not proceed with application of materials when deck temperatures are less than 40°F or if precipitation is imminent.

1.53 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.

1.54 All gas flames and electrical apparatus shall be shut down prior to the start of and during coating application and curing.

1.55 Protect plants, vegetation, and animals which might be adversely affected by the coating operation.

1.56 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 Qualified Applicator in writing by UPI.

2.12 Shall be financially responsible and be ready and able to submit any required warranty.

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 non-staining 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-7118, low VOC, low viscosity, two-component epoxy 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	30 pli	ASTM D-903
Low Temp Flexibility	-30°F	-----

**3.5 Aggregate Binder:** Shall be UI-7016-AR-SC high tensile strength, moisture cured elastomeric polyurethane and shall meet or exceed the following typical performance properties:

##### UI-7016-AR-SC Aggregate Binder Coat

PROPERTY	TYPICAL VALUE	TEST METHOD
Composition	Aromatic Urethane	
Weight Solids	82 ± 2%	ASTM D-1353
VOC Content	Less than 100 gm/l	Calculated
Hardness, Shore A	90 ± 5	ASTM D-1475
Tensile Strength	3300 ± 300 psi	ASTM D-412
Ultimate Elongation	225% ± 50	ASTM D-412
Tear Resistance	300 ± 50 lb./in.	ASTM D-1004
Weather Resistance	No Chalking @ 500 hrs	ASTM G-23
Adhesion to Base Coat	30 pli	-----
Low Temp Flexibility	-30°F	

**3.6 Abrasion-Resistant Top Coat:** Shall be UI-7016-AL-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-AL-SC Aliphatic 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	3300 ± 300 psi	ASTM D-412
Ultimate Elongation	225 ± 50%	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
Adhesion To Base Coat	30 pli	ASTM D- 03

**3.7 Aggregate:** Shall be rounded, non angular, blended 20 or 16 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 UI-7013-SC.

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 UI-7013-SC.

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 Flashing Reinforcement:

4.21 All required metal or neoprene flashing and fabric flashing reinforcement and all sealant cants shall be installed at this time.

4.22 All metal shall be delivered shop primed and then be field primed with UI-7118 Epoxy Primer. (For metal surfaces which may exhibit adhesion difficulties, first prime and condition with a zinc-rich epoxy primer.)

4.23 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.

4.24 Flashings and polyester reinforcing fabric shall be coated (with base coats and top coats) each time the deck is coated.

**4.3 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, scrape sides and bottom, re-mix and apply primer.

#### 5. APPLICATION OF MEMBRANE

**5.1 Primer:** Apply UI-7118 Epoxy Primer at the approximate rate of 300-350 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 at the rate of 2 gallons per 100 square feet or as needed in order to obtain a uniform film thickness of 32 wet mils. Allow the 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. (Note: Under certain conditions requiring a slope grade membrane UI-7013-SC Base Coat may be mixed with UI-9950 Cure Accelerator.)

**5.3 UI-7016-AR-SC Aggregate Binder:** shall be trowel or squeegee and roller applied in one uniform coat at the rate of one gallon minimum per 100 square feet or as needed in order to obtain a uniform minimum thickness of 16 wet mils. While the coating is still fluid, uniformly broadcast and thoroughly encapsulate 20 or 16 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 environmentally safe solvent before proceeding.) Allow to cure before applying the next coat.

**5.4 UI-7016-AL-SC Aliphatic Top Coat:** shall be trowel or flat squeegee and roller applied in one uniform coat at the rate of one gallon minimum per 100 square feet in order to obtain a uniform minimum coating thickness of 16 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 50 mils.

#### 6. APPLICABLE STANDARDS/SPECIFICATIONS

This Traffic Bearing Coating System shall comply with all applicable Federal EPA VOC regulations and applicable California-Regional and South Coast Air Quality Management District 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. PRECAUTIONS

A. The finished coating system should not be subjected to any direct heat radiation over 200°F from burners or pipes nor exposed for prolonged periods to hot water of 180°F or higher.

B. The finished urethane waterproofing system should be installed prior to the placement of equipment which will make the equipment pads inaccessible at a later date.

#### 8. GUARANTEE / WARRANTY

When this Elastomeric Coating System is installed by a Factory Qualified Applicator, is inspected and approved in accordance with these specifications, and after receipt of the final payment, the Factory Qualified 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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