

SECTION 07571

TRAFFIC COATING- VEHICULAR

PART 1 - GENERAL

1.1 SECTION INCLUDES:

Installation of waterproof polyurethane traffic coating on surfaces indicated on drawings, consisting of preparation of existing and repaired concrete surfaces, sealing of cracks and joints, and application of Dura-Systems Deck Coating System.

1.2 RELATED SECTIONS

- A. Section 03150 - Expansion Joints.
- B. Section 03300 - Cast-In-Place Concrete.
- C. Section 07900 - Caulking and Sealants.
- D. Division 15 - Floor Drains and Standpipes.
- E. Division 16 - Conduit and other Electrical.

1.3 REFERENCES

- A. ASTM C 957 High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.

1.4 SYSTEM DESCRIPTION

Product provided by this Section is a system of compatible polyurethane deck coatings designed to create a seamless waterproofing membrane and suitable for use as a wearing surface on vehicular traffic decks.

1.5 SUBMITTALS

- A. General: Submit in accordance with Section 01300.
- B. Product Data: Submit manufacturer's product literature and installation instructions.
- C. Samples: Submit cured samples of specified system showing the approximate applied thickness, texture, and color.
- D. Subcontractors approval by Manufacturer: Submit document stating manufacturer's acceptance of subcontractor as an Approved Applicator for the specified materials.
- E. Warranty: Submit a sample warranty identifying the terms and conditions stated in Section 1.7.
- F. Maintenance Manual: Upon completion of the work required by this section, submit one Maintenance Manual including recommendations for periodic inspections, care, maintenance and repair of damage.

1.6 QUALITY ASSURANCE

- A. Applicator Qualifications: Applicator shall be experienced in applying the same or similar materials and shall be specifically approved in writing by the coating system manufacturer.
- B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances and laws regarding use and application of coating systems that contain volatile organic compounds (VOC).
- C. Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

1.7 WARRANTY

- A. Upon completion and acceptance of the work required by this section, the installation shall be warranted, on a single document, by the Manufacturer and the Applicator.
- B. The installation shall be warranted against loss of waterproofing integrity, adhesive or cohesive failure, and coating cracks as a result of cracks in the substrate up to 1/16" in width.
- C. The formation or presence of mold or fungi in a building is dependent upon a broad range of factors including, but not limited to, the presence of spores and nutrient sources, moisture, temperatures, climatic conditions, relative humidity, and heating/ventilating systems and their maintenance and operating capabilities. These factors are beyond the control of Silvertree Products and Silvertree Products shall not be responsible for any claims, repairs, restoration, or damages relating to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in any building or in the air, land, or water serving the building.
- D. Some high performance tires can stain the deck coating system. Silvertree Products cannot assume responsibility for stains from organic exposures, including staining deposits by high performance tires.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
 - 1. Name of material.
 - 2. Manufacturer's stock number and date of manufacture.
 - 3. Material safety data sheet.
- B. Recommended storage and application temperature is 75 degrees F. Store materials in protected and well ventilated area.

1.9 PROJECT CONDITIONS

- A. Do not apply coating materials if temperature is less than 40 degrees F. or if precipitation is imminent.
- B. Coordinate deck coating work with other trades to ensure adequate illumination, ventilation, and dust-free environment during application and curing of deck coatings. The applicator shall have sole right of access to the specified areas for the time needed to complete the application and allow the coating to cure adequately.
- C. Protect adjoining surfaces not to be coated against damage or soiling. Protect plants, vegetation and animals which might be affected by coating operations.
- D. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.
- E. Take care to keep vapors from entering occupied structures. Turn off intake blowers, seal doors, vents and other openings that could allow vapors to enter.
- F. Keep products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post NO SMOKING signs.
- G. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Provide Dura-Systems Deck Coating System as purchased from Silvertree Products 5120 Investment Dr. Fort Wayne, Indiana 46808 Phone: 260-426-2474 Fax: 260-2475

2.2 PRODUCTS

- A. Base Membrane: Shall be Dura-Flex SF single-component, VOC compliant, high adhesion, liquid polyurethane membrane and shall meet or exceed the following typical performance properties:

Property	Typical Value	ASTM Method
Composition	Aromatic Urethane	
Solids by Weight	85%	C 1250
Hardness, Shore A	63	D 2240
Tensile Strength	850 PSI	D 412
Ultimate Elongation	625%	D 412
Tear Resistance	140 lb/in	D 624
Adhesion to Concrete	23 PLI	D 903
Low Temp. Flexibility	-65 ⁰ F	D 522

- B. Elastomeric Membrane: Shall be Dura-Lastic single component, VOC compliant, high tensile strength, liquid applied elastomeric polyurethane and shall meet or exceed the following typical performance properties:

Property	Typical Value	ASTM Method
Composition	Aromatic Urethane	
Solids by Weight	80%	C 1250
Hardness, Shore A	82	D 2240
Tensile Strength	2000 PSI	D 412
Ultimate Elongation	425%	D 412
Tear Resistance, Die C	300 lb/in.	D 624
Low Temp. Flexibility	-65 ⁰ F	D 522

- C. Traffic-Resistant Top Coat: Shall be Dura-Flex UV single component, VOC compliant, high tensile strength, abrasion-resistant and weather-resistant aliphatic elastomeric polyurethane and shall meet or exceed the following typical performance properties:

Property	Typical Value	ASTM Method
Composition	Aliphatic Urethane	
Solids by Weight	72%	C 1250
Hardness, Shore A	91	D 2240
Tensile Strength	3200 PSI	D 412
Ultimate Elongation	190%	D 412
Tear Resistance, Die C	300 lb/in.	D 624
Low Temp. Flexibility	Pass	C 957
And Crack Bridging*		
Weather Resistance	No Chalking at 2000 hrs.	G 53
Water Permeability (system)	< 1.0 Perm	E 96 B
Abrasion Resistance (system)	< 50 mg.	C 501
Fire Resistance (system)	Class A	U.L. 790

* Deck Coating System

2.3 ACCESSORY PRODUCTS

- A. Surface Primer: Shall be Dura-Poxy SF two component epoxy primer or as recommended by manufacturer for each surface encountered.
- B. Detail Coat: Shall be Dura-Flex SF single-component, moisture cured polyurethane membrane.
- C. Aggregate: Shall be clean, dry 16 to 30 mesh aggregate as approved by the coating manufacturer.
- D. Sealants: Shall be Dura-Lastic Tuff and Dura-Lastic Soft two component Polyurethane Sealant.
- E. Backing Rod: Shall be closed-cell polyethylene foam rod.
- F. Flexible Flashing: Shall be as recommended and supplied by coating manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- A. 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 corrections made.
- B. Condition of Concrete Surfaces:
 - 1. The concrete surfaces shall be of sound structural grade (minimum of 3500 PSI compressive strength for vehicular decks), and shall have a steel-troweled followed by a fine broom finish, free of fins, ridges, voids or entrained air holes.
 - 2. Concrete shall be cured by water curing method. Curing compounds must be of the pure sodium silicate type and be approved by the Silvertree Products representative.
 - 3. Concrete shall be cured at least 28 days and shall be sloped for proper drainage.
 - 4. 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.
 - 5. Any required crickets or drains should be installed at the time the main deck is poured. Deck should be monolithic.
 - 6. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the unrepaired areas.
 - 7. When metal decking is used as the concrete form, it shall be of the ventilated type.
 - 8. 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.

3.2 SURFACE PREPARATION

- A. Concrete Surfaces:
 - 1. The concrete surface must be thoroughly clean, dry and free from any surface contaminants or cleaning residue. Acceptable methods of cleaning are vacuum shotblasting, sandblasting, acid etching or mechanical grinding followed by the complete and thorough removal of any residue.
 - 2. Install a 1" face, 45 degree cant of Dura-Lastic / Dura-Lastic GEL polyurethane sealant at all angle changes including projections through the deck, walls, curbs, bumpers, etc.
 - 3. All cracks over 1/16" in width and all moving cracks under 1/16" in width shall be saw cut to 1/4" minimum in width and depth. Saw cut a 1/4" by 1/4" kerf around drain flanges. Clean, prime and fill saw cuts flush with Dura-Lastic / Dura-Lastic GEL polyurethane sealant.
 - 4. All moving cracks over 1/16" wide and all expansion joints less than 1" wide shall be cleaned, primed, fitted with a backing rod and caulked with Dura-Lastic / Dura-Lastic GEL polyurethane sealant. For larger joints, contact Silvertree Products representative.
 - 5. Allow all sealant to cure thoroughly before applying coating.
 - 6. Prime all areas to receive detail coats following priming instructions in Section 3.3 A. Extend primer 2" beyond area to receive detail coat to allow primer tie-in during coating application.
 - 7. Apply a 6" wide stripe-coat of Dura-Lastic coating 30 mils thick centered over all sealed cracks, hairline cracks, sealant cants, control and cold joints, and expansion joints less than 1" wide.

- B. All required metal and neoprene flashings shall be installed at this time. Apply a stripe coat of Dura-Lastic Detail Coat, 30 mils thick, 6" wide, centered over all transitions from concrete to metal flashings and reinforce with Reinforcing Fabric. Allow the stripe coat to cure over night (16 hours minimum).

3.3 APPLICATION

A. Priming:

1. Stir each side separately to ensure that no separation has occurred then mix all of Part A with all of Part B. Use a mixing paddle in a slow speed drill motor. Mix 2 to 3 minutes until a homogenous blend is achieved. Allow 15 to 30 minute induction period before applying.
2. Apply primer at a rate of 400 square feet per gallon. Avoid puddles or ponding the primer and do not apply primer over stripe coats.
3. Allow primer to dry for 1 hour minimum, 8 hours maximum. Primer is sufficiently dry when it is somewhat tacky but will not transfer when touched. In the event coating is not applied within the maximum time, reprime.

- B. Dura-Lastic Base Membrane: Apply in one uniform coat at the rate of one gallon minimum per 50 square feet or as needed in order to obtain a minimum thickness of 32 wet mils. Allow the base membrane to cure 16 to 48 hours.

C. Dura-Flex Elastomeric Membrane:

1. Standard Traffic Areas: Apply Dura-Flex SF in one uniform coat at the rate of one gallon minimum per 100 square feet or as needed in order to obtain a minimum thickness of 16 wet mils. Immediately broadcast 16 mesh aggregate into the wet material at a rate of 10 to 12 lbs. per 100 square feet and backroll. Allow the membrane to cure 16 to 48 hours.
2. Heavy Traffic Areas: After installation of Dura-Flex SF as above, apply an additional coat of CCW-502 at the rate of one gallon minimum per 100 square feet. Uniformly broadcast 20 mesh sand over the surface at 15 to 25 lbs. per 100 sq. ft. Allow to cure 16 hours.

- D. Dura-Flex UV Top Coat: Apply in one uniform coat at the rate of one gallon minimum per 100 square feet or as needed in order to obtain a minimum thickness of 16 wet mils. Backroll for uniformity.

- E. Traffic on coated surface: The completed coating system shall not be subject to any traffic during the first 24 hours after application is complete nor to any vehicular traffic during the first 48 hours after application of the final coat. Cool temperatures will significantly increase the required cure time. If the work of the applicator has not been approved by the prime contractor during the first 48 hours after application is complete, then there shall be no traffic of any type allowed until such acceptance and approval is given.

End of Section

Dura-Systems, Dura-Flex, Dura-Lastic, and Dura-Lastic GEL are trademark of Silvertree Products.