Guide Specification

1. 07 18 00

TRAFFIC COATINGS

* 1. GENERAL
     1. SECTION INCLUDES
        1. Parking deck coating system.
     2. RELATED REQUIREMENTS
        1. Section 03 30 00 – Cast-in-Place Concrete.
     3. REFERENCE STANDARDS
        1. ASTM International (ASTM) ([www.astm.org](http://www.astm.org)):
           1. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
           2. ASTM D 471 – Standard Test Method for Rubber Property—Effect of Liquids.
           3. ASTM D 624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
           4. ASTM D 2240 – Standard Test Method for Rubber Property—Durometer Hardness.
           5. ASTM D 2369 – Standard Test Method for Volatile Content of Coatings.
           6. ASTM F 1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
           7. ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
        2. International Concrete Repair Institute (ICRI) ([www.icri.org](http://www.icri.org)):
           1. ICRI 310.2R – Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.
     4. PREAPPLICATION MEETINGS
        1. Convene preapplication meeting 2 weeks before start of application of parking deck coating system.
        2. Require attendance of parties directly affecting work of this Section, including Contractor, Architect, applicator, and manufacturer’s representative.
        3. Review materials, moisture testing of concrete, protection of in-place conditions, surface preparation, application, protection, and coordination with other work.
     5. SUBMITTALS
        1. In accordance with Division 01.
        2. Product Data: Submit manufacturer’s product data, including surface preparation and application instructions.
        3. Samples:
           1. Colorants Added to Materials: Submit manufacturer’s samples of colorants.
           2. Parking Deck Coating Surface: Submit manufacturer’s samples of parking deck coating surface showing texture and sheen.
        4. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.
        5. Manufacturer’s Project References: Submit manufacturer’s list of successfully completed parking deck coating system projects, including project name and location, name of architect, and type and quantity of parking deck coating systems furnished.
        6. Applicator’s Project References: Submit applicator’s list of successfully completed parking deck coating system projects, including project name and location, name of architect, and type and quantity of parking deck coating systems applied.
        7. Care and Maintenance Instructions: Submit manufacturer’s care and maintenance instructions, including cleaning instructions.
        8. Warranty Documentation: Submit manufacturer’s standard warranty.
     6. QUALITY ASSURANCE
        1. Manufacturer’s Qualifications: Manufacturer regularly engaged, for a minimum of 10 years, in the manufacturing of parking deck coating systems of similar type to that specified.
        2. Applicator’s Qualifications:
           1. Applicator regularly engaged, for a minimum of 5 years, in application of parking deck coating systems of similar type to that specified.
           2. Employ persons trained for application of parking deck coating systems.
     7. DELIVERY, STORAGE, AND HANDLING
        1. Delivery Requirements: Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name, manufacturer, and batch number.
        2. Storage and Handling Requirements:
           1. Store and handle materials in accordance with manufacturer’s instructions.
           2. Keep materials in manufacturer’s original, unopened containers and packaging until application.
           3. Store materials in clean, dry area indoors between 65 and 90 degrees F (18 and 32 degrees C).
           4. Store materials out of direct sunlight.
           5. Keep materials from freezing.
           6. Protect materials during storage, handling, and application to prevent contamination or damage.
     8. AMBIENT CONDITIONS
        1. Apply parking deck coating system under the following ambient conditions:
           1. Concrete Floor and Material Temperatures: Above 50 degrees F (10 degrees C).
           2. Temperatures Between 40 and 50 Degrees F (4 and 10 Degrees C): In accordance with manufacturer’s instructions.
        2. Do not apply parking deck coating system under ambient conditions outside manufacturer’s limits.
  2. PRODUCTS
     1. MANUFACTURERS
        1. Manufacturer: Resudeck III , 1/16” inch Elastomeric Deck System by The Sherwin-Williams Company, or comparable product meeting specified requirements.
        2. Substitutions permitted in accordance with Division 01.
        3. Single Source: Provide materials from single manufacturer, except aggregate.
     2. PARKING DECK COATING SYSTEM
        1. Parking Deck Coating System: Resudeck III.
           1. Description: Pedestrian and parking deck coating system for waterproofing and repairing concrete.
        2. System Components:
           1. Primer: “Resudeck FLP-E”.

Application Thickness: 5-6 wet mils.

* + - * 1. Base Coat: “Resudeck-FHS”.

Application Thickness: 32-34 wet mils.

* + - * 1. Topcoat: “Resudeck-FLA”.

Application Thickness: 20 wet mils.

Color: Clear, Light Gray, Medium Gray, or Dark Gray.

* + - 1. Nominal System Thickness: 1/16” inch.
    1. MATERIALS
       1. Primer: “Resudeck-FLP-E”.
          1. VOC Content, ASTM D 2369: 0.83 lbs per gal (100 g/L).
       2. Base Coat: “Resudeck-FHS” elastomeric urethane.
          1. VOC Content, ASTM D 2369: Less than 0.5 lbs per gal (55 g/L).
          2. Shore A Hardness, ASTM D 2240: 60 plus or minus 5.
          3. Tear Resistance, Die C, ASTM D 624: 250 pli plus or minus 25 pli (44 kN/m plus or minus 5 kN/m).
          4. Tensile Strength, ASTM D 412: 1,350 psi plus or minus 150 psi (9.3 MPa plus or minus 1 MPa).
          5. Ultimate Elongation, ASTM D 412: 675 percent plus or minus 10 percent.
          6. Water Absorption, ASTM D 471: 0.05 percent by weight.
       3. Topcoat: “Resudeck-FLA” aliphatic polyurea.
          1. VOC Content, ASTM D 2369: Less than 0.5 lbs per gal (60 g/L).
          2. Shore A Hardness, ASTM D 2240: 85 plus or minus 5.
          3. Tear Resistance, Die C, ASTM D 624: 300 pli plus or minus 10 pli.
          4. Tensile Strength, ASTM D 412: 3,200 psi plus or minus 10 percent.
          5. Ultimate Elongation, ASTM D 412: 450 percent plus or minus 10 percent.
          6. Water Absorption, ASTM D 471: 1.3 percent by weight.
    2. ACCESSORIES
       1. Aggregate:
          1. 16/30 mesh silica sand.
          2. Abrasives, Inc.; AGSCO; Premier Silica; or Smalley & Company.
       2. Joint Sealant: “Eco-FLS”.
       3. Sealing Tape: “PSI - PTS E-101”.
  1. EXECUTION
     1. EXAMINATION
        1. Examine concrete surface to receive parking deck coating system.
        2. Concrete Requirements:
           1. Minimum Compressive Strength: 3,000 psi.
           2. Minimum Cure: 28 days.
           3. Structurally sound.
           4. Sloped for proper drainage.
        3. Moisture Testing of Concrete: Perform at least one of the following two tests to determine moisture in concrete.
           1. Calcium Chloride Test:

Measure moisture vapor emission rate of concrete in accordance with ASTM F 1869.

Application of parking deck coating system can start only if test results are below 3 pounds per 1,000 square feet (1.5 kg/92.9 m2) over a 24-hour period.

If test results are above limits, notify Architect and parking deck coating system manufacturer.

* + - * 1. In-Situ Probe Test:

Measure relative humidity in concrete in accordance with ASTM F 2170.

Application of parking deck coating system can start only if test results are below 75 percent relative internal concrete humidity.

If test results are above limits, notify Architect and parking deck coating system manufacturer.

* + - 1. Notify Architect of conditions that would adversely affect application or subsequent use.
      2. Do not begin surface preparation or application until unacceptable conditions are corrected.
    1. PREPARATION
       1. Protection of In-Place Conditions: Protect adjacent surfaces and adjoining walls from contact with parking deck coating system materials.
       2. Surface Preparation:
          1. Prepare concrete surface in accordance with manufacturer’s instructions.
          2. Ensure surface is clean, dry, sound, and free of voids, bugholes, rockpockets, honeycombs, protrusions, and excessive roughness.
          3. Steel shotblast concrete to a profile of ICRI 310.2R, CSP 3-4.
          4. Remove dirt, dust, debris, oil, grease, curing agents, bond breakers, paint, coatings, sealers, silicones, rust, loose material, frost, ice, and other surface contaminants which could adversely affect application of parking deck coating system.
          5. Concrete Patches:

Ensure patches are sound.

Remove and replace unsound patches in accordance with manufacturer’s instructions.

* + - * 1. Patch depressions, divots, and cracks in concrete in accordance with manufacturer’s instructions.
        2. Mechanically remove loose, delaminated, and damaged concrete and repair in accordance with manufacturer’s instructions.
        3. Wipe flashings with xylene and apply sealing tape to metal flashings to be coated.
        4. Joints:

Rout and seal joints in accordance with manufacturer’s instructions.

Remove and replace failed expansion joints in accordance with manufacturer’s instructions.

* + - * 1. Treat cracks in accordance with manufacturer’s instructions.
        2. Repair concrete, eliminate ponding, and slope deck as required using base coat material extended with aggregate in accordance with manufacturer’s instructions.
        3. Remove concrete bumpers and seal anchor holes with joint sealant.
    1. APPLICATION
       1. Apply parking deck coating system in accordance with manufacturer’s instructions at locations indicated on the Drawings.
       2. Ensure concrete is dry, clean, and prepared in accordance with manufacturer’s instructions.
       3. Mixing:
          1. Mix material components together in accordance with manufacturer’s instructions.
          2. Mix only enough material that can be applied within working time.
          3. Add and mix colorants with materials in accordance with manufacturer’s instructions to achieve uniform color.
       4. Apply parking deck coating system materials to obtain consistent mil thickness and smooth, uniform appearance and texture.
       5. Primer:
          1. Apply primer in accordance with manufacturer’s instructions.
          2. Apply primer to prepared concrete to ensure proper adhesion of parking deck coating system.
       6. Base Coat:
          1. Apply base coat in accordance with manufacturer’s instructions.
          2. Apply base coat over primer within 2 to 4 hours of becoming dry.
          3. Allow base coat to thicken until it can be broadcast with aggregate, without aggregate sinking into membrane.
          4. Remove loose aggregate in accordance with manufacturer’s instructions.
          5. Allow base coat to cure in accordance with manufacturer’s instructions before applying topcoat.
       7. Topcoat:
          1. Apply topcoat in accordance with manufacturer’s instructions.
          2. Apply topcoat over base coat within 24 hours.
          3. Broadcast additional aggregate as needed to cover bare or insufficient aggregate placement.
          4. Number of Coats: Apply 1 coat of topcoat. 2 coats at areas indicated on drawings, such as ramps, turn radii, and drive lanes.
          5. Apply topcoat to match approved samples submitted in accordance with the Submittals Article of this Section.
    2. PROTECTION
       1. Allow a minimum of 24 hours for parking deck coating system to dry before permitting light pedestrian traffic.
       2. Allow a minimum of 72 hours for parking deck coating system to dry before permitting heavy pedestrian or vehicular traffic.
       3. Allow a minimum of 1 week for parking deck coating system to dry before cleaning by mechanical means.
       4. Protect completed parking deck coating system from damage during construction.

END OF SECTION