SECTION 07 18 16
DECK COATING SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Application of high-solids, fluid-applied, polyurethane, waterproofing, traffic-bearing, membrane deck coating system.

B. Related Sections:
1. Section 033053 - Cast-in-Place Concrete.

1.2 SUBMITTALS

A. Comply with Section 01330.

B. Product Data: Submit manufacturer's technical data sheets.

C. Submit list of project references as documented in this specification under Quality Assurance Article. Include contact name and phone number of the person charged with oversight of each project.

D. Quality Control Submittals:
1. Provide protection plan of surrounding areas and non-work surfaces.

1.3 QUALITY ASSURANCE

A. Comply with Section 01450.

B. Qualifications:
1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products and system.
2. Manufacturer Qualifications: Company shall be ISO 9001:2015 Certified.
3. Applicator Qualifications: Company with minimum of 5 years' experience in application of specified products and system on projects of similar size and scope and is acceptable to product manufacturer.
   a. Successful completion of a minimum of 5 projects of similar size and complexity to specified work.

C. Field Sample:
1. Install field sample at project site or other pre-selected area of building, as directed by architect/engineer.
2. Provide mock-up of at least 100 square feet (9.3 m^2) to include surface profile, sealant joint, crack, flashing and juncture details and allow for evaluation of slip resistance and appearance.
3. Apply material in accordance with manufacturer's written application instructions.
4. Manufacturer's representative or designated representative will review technical aspects; surface preparation, application and workmanship.
5. Field sample will be standard for judging workmanship on remainder of project.
6. Maintain field sample during construction for workmanship comparison.
7. Do not alter, move or destroy field sample until work is completed and approved by architect/engineer.
8. Obtain architect/engineer written approval of field sample before start of material application, including approval of aesthetics, color, texture and appearance.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Store materials in unopened packaging in clean, dry area protected from sunlight.

1.5 PROJECT CONDITIONS

A. Environmental Requirements:
1. Minimum Application Temperature: 40 degrees F (4 degrees C).
2. Do not apply in rain or when rain is expected within 24 hours.
3. Do not apply above 90 degrees F (32 degrees C).

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from the following manufacturer as basis of design:
BASF Corporation Construction Chemicals
889 Valley Park Drive
Shakopee, MN 55379 USA
Customer Service: 800-433-9517
Technical Service: 800-243-6739
Direct Phone: 952-496-6000
Website: www.master-builders-solutions.basf.us

B. Other approved manufacturers:
1. Sika: Sikalastic 720/745 Al Heavy Vehicular Traffic System
Sika Corporation
201 Lito Avenue
202 Lyndhurst, NJ 07071
Phone: +1-800-933-7452
2. Neogard: Auto-Gard FC Heavy Duty System
Neogard
2728 Empire Central
Dallas, TX 75235
Phone: 1-833-443-6735

C. Specifications and drawings are based on manufacturer's proprietary literature from BASF. Other manufacturers shall comply with minimum levels of material, color selection and detailing indicated in specifications or on drawings. Architect will be sole judge of appropriateness of substitutions.

2.2 MATERIALS

A. High-solids, fluid-applied, polyurethane, waterproofing, traffic-bearing, membrane deck coating system.
1. Acceptable Product: MasterSeal Traffic 2500 Deck Coating System (formerly Conipur II Deck Coating System) by BASF.
a. Primer: MasterSeal P 255 (formerly Conipur 78 Primer.) two-component, polyurethane-based adhesive primer.

b. Base coat: MasterSeal M 265 (formerly Conipur 265-Z Base Coat.) two-component, fast-curing, polyurethane base coat.
c. Top Coat: MasterSeal TC 275 (formerly Conipur 275 Top Coat): two-component, fast-curing, aromatic polyurethane top coat.
d. Aliphatic Top Coat: MasterSeal TC 295 (formerly Conipur 295 Top Coat): two-component, aliphatic, 100 percent solids, polyurethane, waterproofing top coat.
e. Aggregate: MasterSeal 941DR: aggregate free of respirable crystalline silica

B. Compliances:
1. ASTM C 957
2. CSA S413

C. Performance Requirements: Provide materials complying with the following requirements:
1. Crack Bridging, Base Coat, ASTM C957: Passes.
2. Adhesion Peel, Primer and Base Coat, ASTM C957.
a. Plywood: 25 pli.
b. Concrete: 14 pli.
3. Tensile Strength, ASTM D412:
a. Base Coat: 3,400 psi (23.4 MPa)
b. Top Coat: 3,000 psi (20.7 MPa).
c. Aliphatic Top Coat: pre-pigmented 3,400 psi (23.4 MPa), tint base 3,000 psi (20.7 MPa).
4. Elongation, ASTM D412:
a. Base Coat: 900 percent.
b. Top Coat: 30 percent.
c. Aliphatic Top Coat: pre-pigmented 340 percent, tint base 390 percent.
5. Hardness, ASTM D2240, Shore A:
a. Top Coat: 70.
b. Aliphatic Top Coat: pre-pigmented 94, tint base 90.
6. Taber Abrasion Resistance, ASTM D4060, CS-17 Wheel, 1,000 g load, 1,000 cycles:
a. Primer/Base Coat/Top Coat: 100 mg.
b. Primer/Base Coat/Intermediate Top Coat/Aliphatic Top Coat: 47 mg.
7. Solids Content:
a. Primer: 99 percent.
b. Base Coat: 99 percent.
c. Top Coat: 99 percent.
d. Aliphatic Top Coat: 91 percent.
8. VOC Content:
a. Primer:
1) Part A: 0.08 lbs per gal (10 g/L), less water and exempt solvents.
2) Part B: 0.08 lbs per gal (10 g/L), less water and exempt solvents.
b. Base Coat:
1) Part A: 0.03 lbs per gal (4 g/L), less water and exempt solvents.
2) Part B: 0.04 lbs per gal (5 g/L), less water and exempt solvents.
c. Top Coat:
1) Part A: 0.59 lbs per gal (71 g/L), less water and exempt solvents.
2) Part B: 0.11 lbs per gal (13 g/L), less water and exempt solvents.
d. Aliphatic Top Coat:
1) Part A: 20.1 g/L, less water and exempt solvents
2) Part B: 173.8 g/L, less water and exempt solvents

D. Color:

1. Black (only available with TC 275).
2. Charcoal.
3. Gray.
4. Tintbase (only available with TC 295).

E. Accessories:
1. Aggregate: MasterSeal 941DR.
2. Sealant Primer: MasterSeal P 173 (formerly Sonneborn Primer 733).
3. Sealant: MasterSeal SL 2 or MasterSeal CR 195 (formerly Sonneborn SL-2 or Sonneborn Ultra).
4. Deep Joint Sealant: MasterSeal SL 2 or MasterSeal NP 2 (formerly Sonneborn SL-2 or Sonneborn NP-2).
5. Plywood Joint Sealant: MasterSeal NP 1 or MasterSeal NP 2 (formerly Sonneborn NP-1 or Sonneborn NP-2).
6. Reinforcing Fabric: MasterSeal 995 (formerly Sonoshield Reinforcing Fabric).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Comply with Section [01 70 00] [__ __ __].

3.2 SURFACE PREPARATION

A. Protection: Protect adjacent work areas and finish surfaces from damage during deck coating system application.

B. Prepare surface in accordance with manufacturer's instructions.

C. Concrete:
1. Minimum Compressive Strength: 3,000 psi (21 MPa).
2. Cure concrete for a minimum of 28 days.
3. Ensure concrete is structurally sound, clean and dry in accordance with ASTM D4263.
4. Repair voids and delaminated areas.
5. Shot blast concrete to remove dirt, dust, grease, oil, coatings, laitance and other surface contamination and to provide profile for proper adhesion.
6. Profile: Minimum of ICRI CSP-3 (approximately 80 to 100-grit sandpaper).
7. Prestripe and prepare cracks, joints and detail work in accordance with manufacturer's instructions.

3.3 MIXING

A. Mix material components in accordance with manufacturer's instructions.

B. Precondition material components to a temperature of 70 degrees F (21 degrees C) before mixing.

3.4 APPLICATION – GENERAL

A. Apply deck coating system in accordance with manufacturer's instructions.

B. Do not apply deck coating system to damp, wet or contaminated surfaces.

3.5 APPLICATION – EXTRA-HEAVY TRAFFIC

A. Primer: Apply 4 wet mils (0.1 mm).

B. Base Coat: Apply 25 wet mils (0.5 mm). Immediately backroll to level material. Allow base coat to cure 3 to 4 hours.

C. Intermediate Coat: Apply 20 to 25 wet mils (0.5 to 0.6 mm). Immediately backroll to level material.

D. Aggregate: Immediately broadcast aggregate to refusal into wet intermediate coat. Allow curing time of 3 to 4 hours.

E. Remove excess aggregate.

F. Top Coat: Apply 15 wet mils (0.40 mm). Immediately backroll to level material.

G. Additional Slip Resistance: Immediately broadcast aggregate at rate of 3 to 5 lbs per 100 sq ft (0.15 to 0.25 kg/m^2). Lightly backroll into top coat.

3.6 PROTECTION

A. Pedestrian Traffic: Allow minimum curing time of 4 hours before allowing pedestrian traffic onto deck coating system.

B. Vehicular Traffic: Allow minimum curing time of 24 hours before allowing vehicular traffic onto deck coating system.

C. Protect completed deck coating system from damage and staining during construction.

END OF SECTION