SECTION 09 97 23

Concrete & Masonry Coatings

Sika Thorocoat® -400 Waterproof Coating

NOTES TO SPECIFIERS:

PLEASE UPDATE YOUR MASTER SPECIFICATIONS TO REFLECT THE COMPANY AND PRODUCT NAME CHANGES.

THE PURPOSE OF THIS GUIDE SPECIFICATION IS TO ASSIST THE SPECIFIER IN DEVELOPING A PROJECT SPECIFICATION FOR THE USE OF SIKA PRODUCTS. THIS GUIDE DOCUMENT HAS BEEN PREPARED TO BE PART OF A COMPLETE PROJECT MANUAL. IT IS NOT INTENDED TO BE A “STAND ALONE” DOCUMENT, AND IT IS NOT INTENDED TO BE COPIED DIRECTLY INTO A PROJECT MANUAL.

THIS GUIDE SPECIFICATION WILL NEED TO BE CAREFULLY REVIEWED FOR APPROPRIATENESS FOR THE GIVEN PROJECT AND EDITED ACCORDINGLY TO COMPLY WITH PROJECT-SPECIFIC REQUIREMENTS.

# PART 1 - GENERAL

* 1. SUMMARY
     1. Section Includes:
        1. Application of water-based, high-build, 100 percent acrylic, waterproof coating.

DELETE SECTIONS BELOW NOT RELEVANT TO THIS PROJECT; ADD OTHERS AS REQUIRED.

* + 1. Related Sections:
       1. Section 03 30 00 – Cast-in-Place Concrete.
       2. Section 03 41 00 – Precast Structural Concrete.
       3. Section 04 20 00 – Unit Masonry Assemblies.
       4. Section 07 24 15 – Exterior Insulation and Finish System.
       5. Section 09 24 00 – Portland Cement Plastering.

# SUBMITTALS

* + 1. Comply with Section [01 33 00] [ ].
    2. Product Data: Submit manufacturer's technical data sheets.
    3. LEED Submittals: Comply with requirements for each product to achieve points indicated in LEED Project Checklist provided by the architect/engineer.
    4. 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.
    5. Quality Control Submittals:

Provide protection plan of surrounding areas and non-cementitious surfaces.

# QUALITY ASSURANCE

* + 1. Comply with Section [01 40 00] [ ].
    2. Qualifications:
       1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products.
       2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.
       3. Applicator Qualifications: Company with minimum of 5 years’ experience in application of specified products on projects of similar size and scope and is acceptable to product manufacturer.
          1. Successful completion of a minimum of 5 projects of similar size and complexity to specified work.
    3. Field Sample:
       1. Install at project site or another pre-selected area of the building, minimum 4 feet by 4 feet (1.2 m by 1.2 m), using specified material.
       2. Apply material in accordance with manufacturer’s written application instructions.
       3. Manufacturer’s representative or designated representative will review technical aspects; surface preparation, repair and workmanship.
       4. Field sample will be standard for judging workmanship on remainder of project.
       5. Maintain field sample during construction for workmanship comparison.
       6. Do not alter, move, or destroy field sample until work is completed and approved by architect/engineer.
       7. Obtain architect/engineer written approval of field sample before start of material application, including approval of aesthetics, color, texture and appearance.
       8. Perform adhesion test in accordance with ASTM D3359, Method A. Minimum adhesion rating of 4A required on 0 to 5 scale.

# DELIVERY, STORAGE, AND HANDLING

* + 1. Comply with Section [01 60 00] [ ].
    2. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
    3. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
    4. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat and freezing temperatures.

# PROJECT CONDITIONS

* + 1. Environmental Requirements:
       1. Do not apply material when substrate or ambient temperature is 40 degrees F (4 degrees C) or below or is expected to fall below 40 degrees F (4 degrees C) within 24 hours after application.
       2. Do not apply material if rain is expected within 24 hours of application.
       3. Do not apply over moving cracks, control joints, or expansion joints.
       4. Do not apply to horizontal traffic-bearing surfaces.

# PART 2 - PRODUCTS

* 1. MANUFACTURERS
  2. Subject to compliance with requirements, provide products from the following manufacturer:

Sika Corporation, 201 Polito Avenue, Lyndhurst NJ 07071. Toll Free 800-933-SIKA (7452), www.sikausa.com.

No substitutions without prior written approval by the Architect.

* + 1. Substitutions: Comply with Section [01 60 00] [ ].
    2. Specifications and drawings are based on manufacturer's proprietary literature from Sika. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in specifications or on drawings. Architect/engineer will be sole judge of appropriateness of substitutions.

# MATERIALS

* + 1. Water-based, high-build, 100 percent acrylic, waterproof coating.
       1. Acceptable Product: Sika Thorocoat® -400 by Sika.
    2. Sika Thorocoat® -400 Smooth:
       1. Density, ASTM D1475: 11.4 to 12.4 lbs per gal (1.37 to 1.49 kg/L).
       2. Solids Content, ASTM D5201:

1. By Weight: 53.4 – 56.4 percent.
2. By Volume: 37.0 – 39.0 percent.
   * + 1. Viscosity, ASTM D562: 105 to 120 KU.
       2. VOC Content, ASTM D3960: 0.83 lbs per gal (100 g/L), less water and exempt solvents.
     1. Sika Thorocoat® -400 Fine:
        1. Density, ASTM D1475: 13.1 to 14.1 lbs per gal (1.57 to 1.69 kg/L).
        2. Solids Content, ASTM D5201:
3. By Weight: 66.6 – 71.2 percent.
4. By Volume: 48.0 – 50.0 percent.
   * + 1. Viscosity, ASTM D562: 117 to 125 KU.
       2. VOC Content, ASTM D3960: 0.60 lbs per gal (72 g/L), less water and exempt solvents.
     1. Sika Thorocoat® 400 Coarse:
        1. Density, ASTM D1475: 13.2 to 14.2 lbs per gal (1.58 to 1.70 kg/L).
        2. Solids Content, ASTM D5201:
5. By Weight: 67.0 – 71.6 percent.
6. By Volume: 50 percent.
   * + 1. Viscosity, ASTM D562: 117 to 125 KU.
       2. VOC Content, ASTM D3960: 0.59 lbs per gal (70 g/L), less water and exempt solvents.
     1. Performance Requirements: Sika Thorocoat® -400 Smooth:
        1. Resistance to Wind-Driven Rain, Federal Specification ASTM D 6904: Meets requirement. No water penetration.
        2. Accelerated Weathering, ASTM G152, 5,000 hours: Passes.
        3. Visual Color Change, ASTM D1729, 5,000 hours: Passes.
        4. Chalking, ASTM D4214, 5,000 hours: Passes.
        5. Freeze/Thaw Resistance, DOT Methods A and B, 50 cycles: Passes.
        6. Water-Vapor Permeance, ASTM D1653: 13 perms.
        7. Moisture Resistance, Federal Specification TT-C-555B: Meets requirement. No blistering, loss of adhesion, or discoloration.
        8. Salt Spray (Fog) Resistance, ASTM B117, 300 hours: Passes.
        9. Carbon-Dioxide Diffusion, PR EN 1062-6:
7. R (equivalent air-layer thickness): 1,318 feet (402 m).
8. Sc (equivalent concrete thickness): 39 inches (100 cm).
   * + 1. Flexibility, ASTM D1737, 1-inch mandrel: No cracking.
       2. Dirt Pick-Up, ASTM D3719, after 6 months exposure: 92 percent. Passes.
       3. Sand Abrasion Resistance, ASTM D968, Method A, at 3,000 L: Passes.
       4. Impact Resistance, ASTM D2794, at 30 in-lbs: Passes.
       5. Fungus Resistance, ASTM D3273: No growth. Meets requirement.
       6. Mildew Resistance, Federal Specification TT-P-29 (Federal Standard 141, Method 6152 and 6271.1):
9. Aspergillus Oryzae, 7 days: No growth.
10. Aspergillus Niger, 21 days: No growth.
    * + 1. Surface Burning Characteristics, ASTM E84:
11. Flame Spread: 1.
12. Smoke: 4.
13. Fuel Contribution: 7
    * + 1. Flash point, Greater than 200 degrees F (93 degrees C) ASTM D 56 Tag Closed Tester
      1. Approximate Coverage Rate: 75 to 100 sq ft per gal (1.84 to 2.46 m2/L).
      2. Wet Film Thickness (WFT):
         1. Smooth: 16 to 22 mils (406 to 559 microns).
         2. Fine: 16 to 22 mils (406 to 559 microns).
         3. Coarse: 16 to 22 mils (406 to 559 microns).
      3. Dry Film Thickness (DFT):
         1. Smooth: 6 to 8 mils (152 to 203 microns).
         2. Fine: 8 to 11 mils (203 to 279 microns).
         3. Coarse: 8 to 11 mils (203 to 279 microns).

COATING IS AVAILABLE IN 4 TINT BASES AND 48 STANDARD COLORS THROUGH THE ELEMENTS COLOR PROGRAM. COLOR FORMULATIONS ARE AVAILABLE THROUGH THE ELECTRONIC THORO TINT MANUAL. FOR CUSTOM COLOR FORMULATIONS, CONSULT SIKA.

* + 1. Colors: .

DELETE TEXTURE BELOW NOT REQUIRED FOR PROJECT.

* + 1. Texture:
       1. Smooth.
       2. Fine.
       3. Coarse.

# PART 3 - EXECUTION

* + - * 1. EXAMINATION

Comply with Section [01 70 00] [ ].

# SURFACE PREPARATION

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

Prepare surfaces in accordance with manufacturer’s instructions.

Ensure that substrate is sound, clean, dry, and free of dust, dirt, oils, grease, laitance, efflorescence, mildew, fungus, biological residues, and other contaminants that could prevent proper adhesion.

Ensure concrete substrates have a minimum 28-day cure and are free of bond-inhibiting contaminants.

Clean surface to achieve texture similar to medium-grit sandpaper.

Repair holes and spalled and damaged concrete with repair materials approved by coating manufacturer.

Remove protruding concrete accessories and smooth out irregularities.

When chemical cleaners are used, neutralize compounds and fully rinse surface with clean water. Allow surface to dry before proceeding.

Remove blisters or delaminated areas and sand edges to smooth rough areas and provide transition to existing paint areas.

Check adhesion of existing paint in accordance with ASTM D3359, measuring adhesion by Tape Method A.

Treat cracks greater than 1/32 inch (0.8 mm) with knife-grade or brush-grade patching compound.

Treat cracks greater than 1/4 inch (6 mm) as expansion joints and fill with sealant approved by coating manufacturer.

Prepare and treat cracks in accordance with manufacturer’s instructions.

# PRIMING

Apply primer in accordance with manufacturer’s instructions.

Use primer approved by coating manufacturer.

# MIXING

Mix coating in accordance with manufacturer’s instructions to ensure uniform color and aggregate disbursement and to minimize air entrapment.

In multi-pail applications, mix contents of each new pail into partially used pail to ensure color consistency and smooth transitions from pail to pail.

# APPLICATION

Apply coating in accordance with manufacturer’s instructions.

Apply coating as a two-coat system.

Maintain proper uniform wet-film thickness during application to ensure performance characteristics desired.

Apply coating using consistent application techniques to achieve uniform color and texture.

# PROTECTION

Protect applied coating from damage during construction.

END OF SECTION

Disclaimer-

The preceding specifications are provided by Sika Corporation as a guide for informational purposes only and are not intended to replace sound engineering practice and judgment and should not be relied upon for that purpose. **Sika Corporation makes no warranty of any kind, either express or implied, as to the accuracy, completeness or the contents of these guide specifications**. Sika Corporation assumes no liability with respect to the provision or use of these guide specifications, nor shall any legal relationship be created by, or arise from, the provision of such specifications **SIKA SHALL NOT BE RESPONSIBLE UNDER ANY LEGAL THEORY TO ANY THIRD PARTY FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND ARISING FROM THE USE OF THESE GUIDE SPECIFICATIONS.** The specifier, architect, engineer or design professional or contractor for a particular project bears the sole responsibility for the preparation and approval of the specifications and determining their suitability for a particular project or application.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Technical Data Sheet, product label and Material Safety Data Sheet which are available at www.sikausa.com or by calling (800) 933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current Technical Data Sheet, product label and Material Safety Data Sheet prior to product use.