SIKA SPECIFICATION NOTE: This guide specification is provided in CSI Format for use by design professionals for individual construction projects. Modify the text based on your project requirements, and delete products not required. Questions? Call 800-933-SIKA.

SIKA SPECIFICATION NOTE: This guide specification includes test methods, materials and installation procedures for Sikalastic Polyurethane Traffic Coatings, a cold applied, highly durable, seamless, fully bonded, elastomeric polyurethane waterproofing and traffic bearing membrane which is applied direct to concrete, plywood, and existing traffic coatings, and is intended for direct vehicular traffic.

SECTION 07 18 16

Vehicular TRAFFIC COATINGS

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Provide a polyurethane traffic coating system as specified and as indicated on the Drawings.
          2. Related Work: The following items are not included in this Section and are specified under the designated Sections:

Section 03 30 00 – CAST-IN-PLACE CONCRETE.

Section 06 16 00 – SHEATHING.

Section 07 60 00 – FLASHING AND SHEET METAL.

Section 07 92 13 – ELASTOMERIC JOINT SEALANTS.

Section 22 14 26 – PLAZA DRAINS.

* + - 1. PERFORMANCE REQUIREMENTS
         1. Cold fluid applied polyurethane traffic waterproofing system is intended to perform as a continuous barrier against liquid water and to flash or discharge to the incidental water. Membrane system shall accommodate movements of building materials as required with accessory sealant materials at such locations, changes in substrate, perimeter conditions and penetrations.
         2. Installed waterproofing membrane/surfacing system shall not permit the passage of water, and will withstand the anticipated traffic wear exposures in accordance with the most current revision of ASTM C957, High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.
         3. Intent is to bridge and seal the following air and water leakage pathways and gaps:

Connections of the walls to the deck.

Piping, conduit, duct and similar penetrations.

All other air leakage and water intrusion pathways to building envelope connections.

* + - 1. SUBMITTALS
         1. Submittals: Comply with project requirements for submittals as specified in Division 01.
         2. Product Data:

Materials list of items proposed to be provided under this Section.

Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

Drawings or catalog illustrations in sufficient detail to show installation and interface of the work of this Section with the work of adjacent trades.

Manufacturer's current recommended installation procedures.

* + - * 1. Mock-Ups: Provide a mock-up on site to demonstrate workmanship and final appearance. Locate in an area acceptable to the Architect. Accepted mock-up may remain in place.
      1. QUALITY ASSURANCE
         1. Installer Qualifications:

Installer shall have at least three years of experience in installing materials of types specified and shall have successfully completed at least three projects of similar scope and complexity.

Installer shall designate a single individual as project foreman who shall be on site at all times during installation.

* + - * 1. Field Adhesion Test Method: Use manufacturer's standard field adhesion test methods and methods to verify proper priming and surface preparation techniques required to obtain optimum adhesion. Evaluate and report results of field adhesion testing.
        2. Waterproofing Terminology: Refer to ASTM D1079 and the glossary of the Sika Waterproofing Manual for definitions of waterproofing terms related to this section.
      1. PRE-INSTALLATION CONFERENCE
         1. Prior to scheduled commencement of installation and associated work, conduct a meeting at the project site with the installer, architect/consultant, owner, manufacturer’s representative and any other persons directly involved with the performance of the Work. The Installer shall record conference discussions and to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to the Work.
      2. REGULATORY REQUIREMENTS
         1. Applicable Regulations: Comply with local code and requirements of authorities having jurisdiction. Do not exceed VOC regulations as established by the State in which they are being installed; including total VOC content, in grams per liter, for all system components (i.e. primers, adhesives, coatings, and similar items.)
      3. DELIVERY, STORAGE AND HANDLING
         1. Deliver materials to the job site in the manufacturer's unopened containers with all labels intact and legible at time of use. Handle and store materials in accordance with manufacturer's recommendations with proper precautions to ensure fitness of material when installed.
      4. WARRANTY
         1. Warranty: Provide manufacturer’s standard warranty for each type of product and system. Include written testing documentation and test reports if requested by Architect.

1. PRODUCTS
   * + 1. MANUFACTURER
          1. Basis-of-Design Manufacturer: Sika Corporation, 201 Polito Avenue, Lyndhurst NJ 07071. Toll Free 800-933-SIKA (7452), www.usa.sika.com. No substitutions without prior written approval by the Architect.
       2. TRAFFIC COATINGS (SIKALASTIC 720/745 TRAFFIC SYSTEM)
          1. Vehicular Traffic Coating: Sikalastic 720/745 Traffic System comprised of the following:

Primers :

Sikalastic Primer fast curing 1C PU primer.

Sikalastic FTP water-based epoxy primer.

Sikalastic FTP LoVOC 100% solids epoxy primer (as a standard primer and for recoat applications and elevated moisture content up to 6% by Tramex ).

Sikalastic PF Lo-VOC 100% solids epoxy primer (for rough and/or porous substrates).

Sikalastic MT 100% solids epoxy primer (for substrates with elevated moisture content up to 6 % by Tramex ).

Sikalastic 720 Base two-component aromatic polyurethane base coat.

Sikalastic 745 AL Top two-component aliphatic polyurethane top coat.

Sikalastic 736 AL Lo-VOC and 748 PA aliphatic top coats.

* + - * 1. Applied Total Dry Film Thickness Exclusive of Aggregate:

Light Vehicular Traffic: 43 mils.

Heavy Vehicular Traffic: 55 mils.

* + - * 1. Aggregate:

Standard Aggregate: Clean, rounded, oven dried quartz sand with a minimum gradation of 16-30 mesh or 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh’s scale. Aggregate shall be supplied in pre-packaged bags and free of metallic or other impurities.

Decorative Aggregate: UV-stable, ceramic-coated quartz aggregate in a standard or custom color blend. Intended for a full broadcast application where a clear sealcoat will be applied. Aggregate shall be supplied in pre-blended and packaged bags.

* + - * 1. Fabric Reinforcement: Sikalastic Flexitape Heavy woven nylon reinforcement.
        2. Base and Top Coats: Typical Physical properties complying with the following.

Sikalastic 720 Base 745 AL Top

Pot Life 10-15 minutes 20-30 minutes

Total Volume Solids (ASTM D2697) 95% 100%

VOC Content (ASTM D2369) 59 g/l 73.6 g/l

Tensile Strength (ASTM D412) 500 +/- 100 psi 3200 +/- 300 psi

Elongation at Break (ASTM D412) 800 +/- 50% 450 +/- 50%

Tear Resistance (Die C, ASTM D624) 300 +/- 25 pli 350 +/- 50 pli

Hardness (ASTM D2240) 80 +/- 5 Shore A 85 +/- 5 Shore A

Tests were performed with material and curing conditions at 75F and 50% relative humidity.

* + - * 1. Aliphatic Top Coat: Typcial Physical properties complying with the following.

Sikalastic 736 AL Lo-VOC 748 PA

Viscosity 3500 +/- 700 cps 200 +/- 50 cps

Total Volume Solids (ASTM D2697) 83% 78%

VOC Content (ASTM D2369) 99 g/l 100 g/l

Tensile Strength (ASTM D412) 4000 +/- 300 psi 2500 +/- 200 psi

Elongation at Break (ASTM D412) 250 +/- 50% 100 +/- 25%.

Tear Resistance (Die C, ASTM D624) 400 +/- 50 pli 300 +/- 50 pli

Hardness (ASTM D2240) 90 +/- 5 Shore A 50 +/- 5 Shore D

Tests were performed with material and curing conditions at 75F and 50% relative humidity.

* + - 1. TRAFFIC COATINGS (SIKALASTIC 720/745 Textured TRAFFIC SYSTEM)
         1. Vehicular Traffic Coating: Sikalastic 720/745 Textured Traffic System comprised of the following:

Sikalastic Primer fast curing 1C PU primer.

Sikalastic FTP water-based epoxy primer.

Sikalastic FTP LoVOC 100% solids epoxy primer (as a standard primer and for recoat applications and elevated moisture content up to 6% by Tramex ).

Sikalastic PF Lo-VOC 100% solids epoxy primer (for rough and/or porous substrates).

Sikalastic MT 100% solids epoxy primer (for substrates with elevated moisture content up to 6 % by Tramex ).

Sikalastic 720 Base two-component aromatic polyurethane base coat.

Sikalastic 745 Textured Top two-component aliphatic polyurethane top coat with integrated aggregate .

* + - * 1. Applied Total Dry Film Thickness Exclusive of Aggregate:

Standard Vehicular Traffic: 43 mils.

Heavy Vehicular Traffic: 55 mils.

* + - * 1. Fabric Reinforcement: Sikalastic Flexitape Heavy woven nylon reinforcement.
        2. Base and Top Coats:Typical Physical properties complying with the following.

Sikalastic 720 Base 745 Textured Top

Pot Life 10-15 minutes 20-30 minutes

Total Volume Solids (ASTM D2697) 95% 100%

VOC Content (ASTM D2369) 59 g/l 73.6 g/l

Tensile Strength (ASTM D412) 500 +/- 100 psi 3200 +/- 300 psi

Elongation at Break (ASTM D412) 800 +/- 50% 450 +/- 50%

Tear Resistance (Die C, ASTM D624) 300 +/- 25 pli 300 +/- 50 pli

Hardness (ASTM D2240) 80 +/- 5 Shore A 85 +/- 5 Shore A

Tests were performed with material and curing conditions at 75F and 50% relative humidity.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that surfaces and conditions are ready to accept the Work of this section. Notify Architect in writing of any discrepancies. Commencement of the Work in an area shall mean Installer’s acceptance of the substrate.
       2. PREPARATION
          1. Substrates shall be clean, dry, sound and free of surface contaminants, with an open texture. Remove all traces of dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, such as milling, scarifying, or shotblasting, as acceptable to the Architect. Blow surface free of dust using compressed air line-equipped with an oil trap. All projections, depressions and rough spots should be dressed off to achieve a level surface prior to the application.
          2. Concrete shall be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).
          3. Plywood shall be clean and smooth, APA and exterior grade, not less than 1/2 inch thick, and spaced and supported according to APA guidelines. Seams should be sealed with Sikaflex 2c or 1a and detailed and may need imbedded fabric reinforcement.
          4. Metal shall be thoroughly cleaned by grinding or blast cleaning.
       3. PRIMING
          1. Concrete (<4% moisture content by weight, measured with Tramex Concrete Moisture Encounter Meter) and Plywood:

For systems requiring primer, apply Sikalastic Primer at 280 sf/gal or Sikalastic FTP primer at 300 sf/gal with a flat squeegee or roller and work well into the substrate to insure adequate penetration and sealing. Puddles are to be avoided.

Refer to data sheet for more detailed information, or consult Sika for other primer options.

Sikalastic Primer - No mixing required. Use phenolic resin core roller to apply the primer.

Allow primer to cure a minimum of 45 minutes at 70°F and 50% RH or until tack free before applying base coat.

Sikalastic FTP - Premix both components, Part “B” is dark olive green in color and may appear black in the container. Sikalastic FTP, Part “A” is light amber in color.

Add the 1 gallon of Sikalastic FTP, Part “A” to the 1.25 gallons of Part “B” in the short filled Part “B” pail. Mix thoroughly with a mechanical mixer (Jiffy) for 3 minutes.

This mixture will appear as a light olive green color.

Slowly add 1.25 gallons of potable water to the mixture under agitation.

Mix for an additional 2 minutes until the mixture is fully dispersed.

Fully dispersed material will appear as light green in color.

Allow primer to cure a minimum of 3-4 hours at 70°F and 50% RH or until tack free before applying base coat.

* + - * 1. Concrete (<5% moisture content by weight, measured with Tramex Concrete Moisture Encounter Meter):

For concrete substrates with 5% maximum moisture content by weight, apply Sikalastic PF Lo-VOC primer at 200 sf/gal. with a flat squeegee or roller and work well into the substrate to insure adequate penetration and sealing. Puddles are to be avoided.

Refer to data sheet for more detailed information, or consult Sika for other primer options.

Premix both components. Sikalastic PF Lo-VOC Primer, Part “A” is white in color. Sikalastic PF Primer, Part “B” is black in color.

In a separate mixing vessel, add the Sikalastic PF Lo-VOC Primer, Part “B” to the Sikalastic PF Lo-VOC Part “A”. Mix thoroughly with a mechanical mixer (Jiffy) for 3 minutes.

This mixture will appear as a grey color.

Allow primer to cure a minimum of 6 hours at 70°F and 50% RH or until tack free before applying second primer or base coat.

* + - * 1. Concrete (4% to 6% moisture content by weight, measured with Tramex Concrete Moisture Encounter Meter):

For concrete substrates with 5% maximum moisture content by weight, apply Sikalastic MT primer at 175 sf/gal. with a flat squeegee or roller and work well into the substrate to insure adequate penetration and sealing. Puddles are to be avoided.

For concrete substrates with >5% up to 6% maximum moisture content by weight, apply a second coat of Sikalastic MT primer at 175 sf/gal.

Refer to data sheet for more detailed information, or consult Sika for other primer options.

Premix both components. Sikalastic MT Primer, Part “A” is red in color. Sikalastic MT Primer, Part “B” is light amber in color.

Add the 1.5 gallon of Sikalastic MT Primer, Part “B” to the 3 gallons of Part “A” in the short filled Part “A” pail. Mix thoroughly with a mechanical mixer (Jiffy) for 3 minutes.

This mixture will appear as a red transparent color.

Allow primer to cure a minimum of 12 hours at 70°F and 50% RH or until tack free before applying second primer or base coat.

For concrete substrates with 5% maximum moisture content by weight, apply Sikalastic FTP LoVOC primer at 200 sf/gal. with a flat squeegee or roller and work well into the substrate to insure adequate penetration and sealing. Puddles are to be avoided.

For concrete substrates with >5% up to 6% maximum moisture content by weight, apply a second coat of Sikalastic FTP LoVOC primer at 200 sf/gal.

Premix both components.

Add the 5 gallon of Sikalastic FTP LoVOC Primer, Part “B” to the 10 gallons of Part “A” . Mix thoroughly with a mechanical mixer (Jiffy) for 3 minutes.

This mixture will appear as a green transparent color.

Allow primer to cure a minimum of 12 hours at 70°F and 50% RH or until tack free before applying second primer or base coat.

* + - * 1. Metal: Consult manufacturer for selection of primer.
      1. DETAILING
         1. Non-Structural Cracks up to 1/16 inch: Apply a detail coat of Sikalastic 720 Base at 23 mils wet 4 inches wide, centered over the crack. Allow to become tack free before overcoating.
         2. Cracks and Joints over 1/16 inch up to 1 inch: Rout and seal with Sikaflex 2c or 1a sealant and allow to skin over and cure. Apply a detail coat of Sikalastic 720 Base at 23 mils wet 4 inches wide, centered over crack. Allow to become tack free before overcoating.
         3. Fabric Reinforcement: An optional 3” or 6” wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1” tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.
         4. Joints over 1 inch: Treat as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex 2c or 1a sealant.
      2. BASE COAT
         1. Sikalastic 720 Base:

Premix Sikalastic 720 Base Part A and Part B using a mechanical mixer (Jiffy) at slow speeds to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pails. Do not break down kits into smaller quantities; portions are premeasured.

Pour Part B into Part A slowly and while mixing, and scrape the sides of the container. Mix the combined materials thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture.

Apply at the recommended coverage rate of 23 mils wet, using a 3/16” notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints.

Allow coating to cure a minimum of 3-4 hours at 70°F and 50% RH; base coat must be tack free before overcoating.

* + - 1. INTERMEDIATE COAT
         1. Sikalastic 745 AL:

Premix Sikalastic 745 AL Part A and Part B using a mechanical mixer (Jiffy) at slow speeds to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pails. Do not break down kits into smaller quantities; portions are premeasured.

Pour Part B into Part A slowly and while mixing, and scrape the sides of the container. Mix the combined materials thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture.

For heavy vehicular traffic applications only, apply at 14 mils wet, using a 3/16” notched squeegee and backroll using a phenolic resin core roller. Apply aggregate evenly seeded and distributed at 10-15 lbs. per 100 sf into the wet coating. Allow coating to cure a minimum of 3-4 hours at 70 degrees F and 50% RH or until tack free between coats.

* + - 1. TOP COAT
         1. Sikalastic 745 AL:

Premix Sikalastic 745 AL Top Part A and Part B using a mechanical mixer (Jiffy) at slow speeds to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pails. Do not break down kits into smaller quantities; portions are premeasured.

Pour Part B into Part A slowly and while mixing, and scrape the sides of the container. Mix the combined materials thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture.

For both light and heavy vehicular traffic applications, apply at 18 mils wet, using a notched squeegee and backroll using a phenolic resin core roller. Apply aggregate evenly seeded and distributed at 10-20 lbs. per 100 sf into the wet coating. Allow coating to cure a minimum of 3-4 hours at 70 degrees F and 50% RH or until tack free between coats. Allow a minimum of 36 hours before opening to vehicular traffic.

* + - 1. CLEANING
         1. Remove uncured materials from tools or other surfaces with an approved solvent. Remove cured materials by mechanical means.
         2. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

END OF SECTION

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