

SPECIFICATION GUIDE

Sikalastic®-3900 Traffic System

Division 7 – Thermal and Moisture Protection

Section 07-18-00 Traffic Coatings

Part 1 – General

1.1 Summary

- .1 This specification describes the application of a seamless waterproofing membrane resistant to specified traffic wear exposures. The specified products shall meet or exceed requirements of CAN/CSA-S413-21 (ASTM C957).

1.2 Quality Assurance

- .1 Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001/9002 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- .2 Contractor qualifications: Contractor shall be qualified in the field of traffic deck membranes with a successful track record of five (5) years or more. Contractor shall maintain qualified personnel that have received product training by a manufacturer's representative.
- .3 Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, provincial and federal authorities having jurisdiction. Consult Safety Data Sheets for complete handling recommendations.

1.3 Delivery, Storage and Handling

- .1 All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- .2 Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- .3 Condition the specified product as recommended by the manufacturer.

1.4 Job Conditions

- .1 Environmental Conditions: Do not apply materials if it is raining or snowing or if such conditions appear to be imminent. The application temperatures must be between 10 and 32 °C (50 and 90 °F). Consult manufacturer's literature.
- .2 Protection: Precautions should be taken to avoid damage and contamination to any surface near the work zone due to mixing and handling of the specified coatings.

1.5 Submittals

- .1 Submit two (2) copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Safety Data Sheets (SDS).

1.6 Warranty

- .1 Provide a written warranty from the manufacturer against defects of materials for a period of (X) year(s), beginning with date of substantial completion of the project.

Part 2 – Products

2.1 Manufacturers

- .1 Sikalastic®-3900 Traffic System, as manufactured by Sika Canada Inc., 601 Delmar Avenue – Pointe-Claire, Quebec H9R 4A9, www.sika.ca, is considered to conform to the requirements of this specification.
- .2 Any materials required for repair prior to installation shall be manufactured by the same supplier of the proposed traffic coating system.

2.2 Materials

- .1 Sikalastic®-3900 Traffic System is a complete system of compatible materials comprised of the following:
- .2 **Sika® MT Primer**, two components, high solids, moisture-tolerant and adhesion promoting primer for dry or damp substrates of up to 6 % moisture by weight.
- .3 **Sikalastic®-390 Membrane**, two components, solvent free, elastomeric and crack-bridging, polyurethane waterproofing membrane.

NOTE TO SPECIFIERS: DELETE TOPCOAT NOT REQUIRED BY SYSTEM.

- .4 **Sikalastic®-391 N**, two components, solvent free, elastomeric and crack-bridging, aromatic polyurethane wear course for interior use.
- .5 **Sikalastic®-394**, two components, solvent free, elastomeric and crack-bridging, aliphatic polyurethane wear course for exterior use.
- .6 **Sikalastic®-220 FS**, two components, solvent free, fast setting, low modulus epoxy resin wear course for interior use. Use with Sikalastic®-394 for exterior applications.
- .7 **Sikadur®-22 Lo-Mod FS**, two components, solvent free, moisture-tolerant, fast setting epoxy resin heavy-duty wear course. Used with **Sikadur®-228/229** aggregates.
- .8 **Sikaflex®-2c SL, Sikaflex 2c NS EZ Mix, Sikaflex®-2c NS EZ Mix TG**, two components, premium grade, polyurethane-based, elastomeric sealants.

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

2.3 Performance Criteria

[Refer to individual product data sheets.](#)

Part 3 – Execution

3.1 Inspection

- .1 Examine all surfaces to be coated with traffic coating and verify application conditions to ensure compliance with manufacturer's requirements. Moisture content of concrete, relative humidity, air and substrate temperatures must be within the limits prescribed by manufacturer. Do not start application until all conditions are in compliance with manufacturer's requirements.
- .2 Application of materials constitutes an implicit acceptance of the surface conditions at the time of application.
- .3 The moisture content of the substrate must be verified by an electrical impedance type moisture meter such as a Tramex CME or Tramex CM Expert moisture meter for concrete surfaces. The moisture content must be within the allowable limits recommended by the product manufacturer before beginning the installation.
- .4 At the time of the application of the Sika® MT Primer, the acceptable limit for the moisture content of the concrete is $\leq 6\%$ by weight. For additional information, refer to section 3.4.
- .5 Do not apply the park deck system if the ambient temperature is below 10 °C (50 °F) or higher than 30-32 °C (90 °F) or if the relative humidity is above 80 %. Refer to individual product data sheets.

3.2 Surface Preparation

- .1 The substrate must be clean, dry, sound and free of surface contaminants. Remove all traces of dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means such as shot blasting or as approved by the engineer to achieve an open-textured surface (ICRI /CSP 3 – 4, ref. document 03732). Blow surface free of dust using compressed air line equipped with an oil trap. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.
- .2 Repair all surface defects and imperfections with appropriate repair material(s) supplied by the traffic coating manufacturer before beginning installation of traffic deck coating. Surface defects should be repaired with an appropriate Sika® repair material before beginning installation. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and at least 1.5 MPa (218 psi) in tension at the time of application of the primer.

- .3 Metal should be thoroughly cleaned by grinding or blast cleaning and wiped clean with a rag lightly dampened with a solvent (such as Acetone). Allow the solvent to flash off the steel surface.

3.3 Detailing

- .1 **Non-structural cracks up to 1.6 mm (1/16 in) wide:** Apply a detail coat of Sikalastic®-390 Membrane at 30 mils WFT, 150 mm wide, centred over the crack. Allow the detail coat to become tack-free before over coating. Prime when required.
- .2 **Cracks and joints over 1.6 mm up to 25 mm wide:** Rout and seal with Sikaflex®-2c SL sealant and allow to cure for 24 hours before over coating. In the case of a slope greater than 1%, use Sikaflex®-2c NS EZ-Mix TG sealant. Apply a detail coat of Sikalastic®-390 Membrane at 30 mils WFT, 150 mm wide, centred over crack. Allow material to cure for 24 hours before over coating. Prime when required.
- .3 **Joints over 25 mm wide:** Should be treated as expansion joints and brought up through the traffic deck coating and sealed with Sikaflex®-2c SL sealant. In the case of a slope greater than 1%, use Sikaflex®-2c NS EZ-Mix TG sealant.
- .4 **Provide fluid-applied integral flashings at all locations** (where a horizontal surface abuts a vertical surface and at all projections): Install a 25 mm cant bead of Sikaflex®-2c EZ Mix sealant, tool at 45 ° to form a cove and allow sealant to cure prior to coating.
- .5 **At projections through concrete slab such as post, pipes, railings, vents, and similar locations of potential movement:** Install a 25 mm cant bead of Sikaflex®-2c EZ Mix sealant, tool at 45 ° to form a cove and allow sealant to cure prior to coating.
- .6 **Vertical cracks, deck to vertical element joints, pipe penetrations and perimeter joints:** Seal with Sikaflex®-2c NS EZ Mix sealant and allow curing for 24 hours before over coating.

3.4 Priming

- .1 Apply Sika® MT Primer on prepared concrete surface according to measured moisture content:
- .2 ≤ 5 % (by weight), apply one (1) coat of Sika® MT Primer at a rate of 4 – 5 m²/L (160 - 200 ft²/US gal.) and ensure a uniform 8 - 10 mils wet film thickness (WFT).
- .3 > 5 % but ≤ 6 % (by weight), apply two (2) coats at a rate of 4 - 5 m²/L (160 - 200 ft²/US gal.) (8 - 10 mils WFT each) for a total applied thickness of 16 - 20 mils WFT.
- .4 > 6% (by weight), use **Sikafloor®-81 EpoCem**®^{CA} before to apply Sika® MT Primer.

3.5 Waterproofing Membrane

- .1 Premix Sikalastic®-390 Membrane materials using a mechanical mixer (Exomixer type) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A and slowly and while mixing, scrape the sides of the container. Mix the combined material thoroughly until a homogenous mixture and uniform colour is obtained (typically after 3 minutes). Use care not to allow the entrapment of air into the mixture.
- .2 Apply Sikalastic®-390 Membrane at a rate of 1.3 - 1.6 m²/L (50 - 65 ft²/US gal.) (25 - 30 mil WFT) using a notched squeegee and back roll using a phenolic resin core roller. Extend base coat over the entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 6 hours at 23 °C (73 °F) and 50 % R.H. or until tack-free before top coating.

3.6 Interior Wear Course

Note to specifiers

Option 1 is the standard polyurethane system build. Additional options represent solutions for parkade's where heavier wear may exist. For heavy service areas consisting of entrances and exits, ticket booths and ramps, Sika offers additional wear options. Systems can also tie into one another, as required. Please contact your Sika technical representative for features, advantages, and recommendations.

- .1 Where multiple coats of wear course are required, apply a masking tape onto the cured first (1st) coat of the wear course to provide a clean straight line to properly define the drive aisles before applying the second (2nd) coat of the wear course. Remove the masking tape approximately one (1) hour after the application of the second (2nd) layer of wear course to ensure a clean, well-defined edges.
 - .1 PARKING STALLS AND PEDESTRIAN TRAFFIC
Option 1: **Sikalastic®-391 N**
 - .1 Apply the Sikalastic® wear course onto the cured Sikalastic®-390 Membrane at a rate of 2 - 2.22 m²/L for a minimum applied thickness of 18 - 20 mils WFT.
 - .2 Allow the material to self-level for 5 to 10 minutes, then broadcast aggregate at a rate of 0.6 - 1.0 kg/m² (12 - 20 lb/100 ft²) for a partial broadcast and back roll to ensure uniformity of the wear course, to fully encapsulate the aggregates and to ensure a uniform thickness at the edges and terminations.

Option 2: **Sikalastic® -220 FS**

- .1 Apply the Sikalastic® wear course onto the cured Sikalastic®-390 Membrane at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .2 Immediately broadcast aggregate at a rate of 0.6 - 1.0 kg/m² (12 - 20 lb/100 ft²) for a partial broadcast and back roll to ensure uniformity of the wear course, to fully encapsulate the aggregates and to ensure a uniform thickness at the edges and terminations.

.2 DRIVE LANES AND MEDIUM TRAFFIC AREA

Option 1: **Sikalastic® -391 N**

- .1 Apply the Sikalastic® intermediate wear course onto the cured Sikalastic®- 390 Membrane at a rate of 2 – 2.22 m²/L for a minimum applied thickness of 18 - 20 mils WFT and back roll to level.
- .2 Allow material to self-level for 5 to 10 minutes, then broadcast aggregate into wet wear course at a rate of 0.75 – 1.0 kg/m² (15 - 20 lb/100 ft²) and back roll to ensure uniformity of the wear course. Allow wear course to cure. **For heavy wear areas, broadcast wear coarse to full saturation and allow wear course to cure. Remove excess aggregate when the wear course has cured.**
- .3 Apply the Sikalastic® top wear course onto the cured intermediate wear course at a rate of 2 – 2.6 m²/L for a minimum applied thickness of 15 - 20 mils WFT and for a total minimum applied thickness of 35 - 40 mils WFT and back roll to level.
- .4 Allow material to self-level for 5 to 10 minutes, then broadcast aggregate into wet wear course at a rate of 0.7 - 1.0 kg/m² (14 - 20 lb/100 ft²) and back roll to achieve the required surface texture. Allow wear course to cure.

Option 2: **Sikalastic® -220 FS**

- .1 Apply the Sikalastic® wear course onto the cured Sikalastic®-390 Membrane at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .2 Immediately broadcast aggregate to full saturation into wet wear course and allow wear course cure.
- .3 Remove excess aggregate.
- .4 Apply the Sikalastic® wear course onto the cured intermediate wear course at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .5 Immediately broadcast aggregate at a rate of 0.6 - 1.0 kg/m² (12 - 20 lb/100 ft²) for a partial broadcast and back roll to ensure uniformity of the wear course, to fully encapsulate the aggregates and to ensure a uniform thickness at the edges and terminations.

.3 HEAVY WEAR AREAS

Option 1: Sikalastic®-391 N

- .1 Apply Sikalastic® intermediate wear course onto the cured Sikalastic®-390 Membrane at a rate of 1.3 - 1.6 m²/L for a minimum applied thickness of 25 - 30 mils WFT and back roll to level.
- .2 Allow the material to self-level for 5 to 10 minutes, then broadcast aggregate to full saturation into wet wear course and allow wear course cure.
- .3 Remove excess aggregate.
- .4 Apply Sikalastic® top wear course onto cured intermediate layer at a rate of 1.3 - 2.2 m²/L (leaving approximately 15 - 25 mil w.f.t.) for a minimum applied thickness of 15 - 25 mils WFT and back roll to level.
- .5 Immediately broadcast aggregate at a rate of 0.15 - 0.25 kg/m² (3 - 6 lb/100 ft²) and back roll in order level and to achieve the required surface texture.

Option 2: Sikalastic®-220 FS

- .1 Apply the Sikalastic® wear course onto the cured Sikalastic®-390 Membrane at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .2 Immediately broadcast aggregate to full saturation into wet wear course and allow wear course cure.
- .3 Remove excess aggregate.
- .4 Apply the Sikalastic® wear course onto the cured intermediate wear course at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .5 Immediately broadcast aggregate at a rate of 0.6 - 1.0 kg/m² (12 - 20 lb/100 ft²) for a partial broadcast and back roll to ensure uniformity of the wear course, to fully encapsulate the aggregates and to ensure a uniform thickness at the edges and terminations.

.4 EXTREME WEAR AREA

- .1 Apply Sikadur®-22 Lo-Mod FS onto the cured Sikalastic®-390 Membrane at a rate of 0.8 - 1.0 m²/L (32 - 40 ft²/US gal.) for a minimum applied thickness of 40 - 50 mils WFT.
- .2 When material levels, broadcast immediately with Sikadur®-228/229, slowly allowing it to settle in the epoxy binder.
- .3 Broadcast aggregate to excess (dry appearance, no wet spots).
- .4 Carefully remove loose aggregate when binder sets sufficiently to accept foot traffic.
- .5 Repeat application for optional second layer.

3.7 Exterior Wear Course

- .1 Unless otherwise indicated, aliphatic polyurethane top coats are only required for Sikalastic® intermediate wear courses when used for exterior applications. Use Sikalastic®-394 to provide UV resistance as top wear course at a rate of 1.6 - 2.2 m²/L (65 - 90 ft²/US gal.) for a minimum applied thickness of 18 - 25 mils WFT.
- .2 Allow finish coat to cure for a minimum of 48 hours at 23 °C (73 °F) before opening to traffic.
- .3 **HEAVY/EXTREME WEAR AREA**
 - .1 Apply Sikadur®-22 Lo-Mod FS onto the cured Sikalastic®-390 Membrane at a rate of 0.8 - 1.0 m²/L (32 – 40 ft²/US gal.) for a minimum applied thickness of 40 - 50 mils WFT.
 - .2 When material levels, broadcast immediately with Sikadur®-228/229, slowly allowing it to settle in the epoxy binder.
 - .3 Broadcast aggregate to excess (dry appearance, no wet spots).
 - .4 Carefully remove loose aggregate when binder sets sufficiently to accept foot traffic.
 - .5 Repeat application for optional second layer.

3.8 Mock-up

- .1 A job site mock-up should always be completed to confirm acceptability of workmanship, material coverage rates and aesthetics.
- .2 Adhere to all limitations and cautions for the Sikalastic® Traffic System in the manufacturer's current printed literature.

3.9 Clean Up

- .1 Clean all tools and equipment immediately with Sika® Urethane Thinner and Cleaner / Sika® Epoxy Cleaner. Once cured, product can only be removed mechanically. Wash hands and skin thoroughly with hot soapy water or use Sika® Hand Cleaner.
- .2 Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

END OF SECTION

The Information, and in particular, the recommendations relating to the application and end use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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 Product Data Sheet, product label and Safety Data Sheet which are available at www.sika.ca or by calling 1-800- 933-SIKA. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each

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Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.