

SAMPLE SPECIFICATION

Specification O523 Patterned FLDOT – Textured Pavement

FrictionPave™

Friction surface treatment for both concrete and asphalt.

1.0 GENERAL

1.1 Summary

FrictionPave™ surfacing system consists of a specially formulated thermo-set two-part binder which is topped with a natural or pigmented granite or natural bauxite stone aggregate.

FrictionPave™ increases surface friction and reduces skidding and braking distances in wet and dry conditions.

FrictionPave™ can be applied to both new and old concrete and asphalt surfaces.

FrictionPave™ is designed for moderate to medium urban traffic volumes. It will not deteriorate due to oil, gasoline, water, and salt or pavement oil content.

1.2 Related Sections

- Section 1.0 General
- Section 2.0 Materials and Performance
- Section 3.0 Delivery Storage and Handling
- Section 4.0 Surface Preparation
- Section 5.0 Application
- Section 6.0 Applicator Training
- Section 7.0 Samples and Mockups
- Section 8.0 Field Quality Control

2.0 Materials and Performance

2.1 Composition, Performance Characteristics

Composition:

FrictionPave™ consists of a thermo-set two part 100% epoxy binder and stone aggregate seeded onto the wet binder. Granite or bauxite is recommended where high friction is required. Colored granite is available to provide the desired architectural required affect.

Thermo-set Binder Thickness:

Minimum average thickness of the thermo-set binder shall be 50 mils (.050 inch) or coverage per gallon of 25 sq ft.

Stone Aggregate:

Aggregate shall have a nominal size of 1-3 mm with 75% by weight in range unless otherwise specified. Stone material shall be indicated on the contract documents.

Stone Aggregate coverage:

Minimum average coverage of stone shall be 1.25 lbs per sq ft of fixed stone (embedded into binder).

Skid Resistance:

FrictionPave™ shall provide a minimum skid resistance value of 35 FN_{40R} when tested with a locked wheel friction tester according to ASTM: E274-97 "Standard Test Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire".

2.2 Paper and Plastic Stencil Patterns

Stencils shall be made of plastic or paper, a minimum of 14 mils thick. All stencils shall arrive on site in unopened packaging in new condition. Stencils shall be secured to the substrate on the perimeter of the pattern area using tape. Periodically a small amount of tape may be used to secure the stencil to low areas of the substrate. Pattern shall be approved by the owner prior to tender closing.

3.0 Delivery, Storage and Handling

3.1 Delivery, Storage and Handling

FrictionPave™ products shall be delivered to the site in sealed containers that plainly show the designated name, batch number, color, date of manufacturer, and name of the manufacturer.

Store the material on site in enclosures, out of direct sunlight in a warm, ventilated and dry area at room temperature. Care shall be taken in handling of FrictionPave™ containers to prevent puncture, inappropriate opening or other action, which may lead to product contamination. No materials that are past the manufacturer's recommended shelf life shall be used without the approval of the manufacturer.

4.0 Surface Preparation

4.1 Cleaning

Broom using mechanical brooming device, or stiff bristle hand broom. Pressure washing may be necessary to remove bonded debris. Use a non-solvent based degreaser to remove stains. Spray degreaser on stained area and let stand for 15 minutes. Using a stiff broom or brush, agitate the stained area to remove stain and rinse with water. Repeat this procedure on severe stains. Thoroughly rinse the area and let dry for 24 hours. Remove any existing pavement markings as deemed necessary by the manufacturer.

4.2 Repair Damaged Asphalt

Damaged and cracked asphalt shall be repaired by heating damaged area until the asphalt cement is in a liquid state (ensuring asphalt does not exceed 375° F), turning over and mixing in new fresh asphalt if necessary to ensure repair is level with adjacent area. Infrared type heating mechanisms are the recommended heating tool for this procedure.

FrictionPave™ may be applied over pavements exhibiting minor rutting or heaving however, the product is not intended as a repair to level these pavements.

4.3 Preparation of New Asphalt

FrictionPave™ shall be applied after 30 days onto newly placed asphalt surfaces, giving the surface time to oxidize by trafficking. Asphalt mix design shall be specified by a qualified Pavement Engineer and shall be designed for the purpose of the application.

5.0 Application

- 5.1 Environmental Conditions
Surfaces should be dry for at least 24 hours prior to applying FrictionPave™. 50°F is the recommended minimum air and surface temperature. The surface must be dry prior to application.
 - 5.2 Mixing the binder
Part A shall be mixed 1 to 1 with part B for a minimum of 3 minutes using a jiffler-type mixing paddle.
 - 5.3 Material Working time
Working time of the mixed binder is approximately 20 minutes at 70° F. This time increases at cooler temperatures, and decreases at higher temperatures. Aggregate must be seeded onto the binder within this time period to provide maximum stone embedding into the binder
 - 5.4 Spreading epoxy
Mixed epoxy shall be spread using flat or serrated squeegees at a rate of 25 sq ft per mixed gallon. It is very important to distribute the material evenly over the entire area.
 - 5.5 Cure time
Cure time of the binder is approximately 48 hours at 70°F. Time to allow traffic is 3 to 4 hours at 70°F. This time increases at cooler temperatures, and decreases at higher temperatures. The ambient temperature shall be 50°F and rising. The preferred temperature range is 60-90°F. Surface temperatures outside of this range can affect working times and final cure. It may be necessary to add a thickening agent for hot weather applications.
 - 5.6 Remove excess stone
Excess stone can be removed by mechanical broom or hand broom prior to allowing traffic or at a later more convenient time. Some shedding of stone will occur after the application has been opened to traffic.
- 6.0 Applicator Training**
- 6.1 The Applicator shall be approved by the manufacture for the application being applied. The Applicator shall have lead personnel on the project that have been trained by manufacturer within the past 12 months of starting the project. At least one of these trained personnel shall be on site at all times during the application

7.0 Samples and Mockups

Samples shall be provided to the owner (or owners representative) for approval prior to tender closing.

Samples shall display the following:

1. Stone type and color
2. Thickness (total cured build)
3. Variations of the above if requested

Samples and mockups to be applied to and presented on 24" x 24" x ¼" hardboard panels unless otherwise requested.

Approval of stone aggregate to be provided in writing to the bidding contractor no less than 7 days prior to bid closing.

Approved samples and mockups to be held by owner for future onsite verification.

8.0 Field Quality Control

9.1 The contractor for work under this section shall maintain a quality control program specifically to verify compliance with this specification. A daily log shall be kept to record actions in the field.

9.2 This log shall include the following information;

1. Surface preparation start date and time
2. Photos of surface prior to start of preparation
3. Close up photos of crack repair if necessary (before and after)
4. Ambient temperature start and end of each day
5. Relative humidity start and end of each day
6. Substrate surface temperature start and end of each day
7. Photos of surface after epoxy binder spread
8. Photos of stone seeded onto surface
9. Photos of surface after excess stone has been removed