



HIGH FRICTION BIKE and BUS LANE TREATMENT SPECIFICATIONS

GENERAL

Summary

Specification for placing a high friction surface treatment (HFST) onto an asphalt concrete pavement.

The HFST consists of a polymer resin binder with a 100% Recycled Color Coated glass topping.

Submittals

Submit a HFST Quality Control Plan (QCP)

The HFST QCP must include:

1. Description of equipment for placing HFST
2. Method for protecting areas not to receive HFST
3. Cure time estimates for HFST
4. Storage and handling of HFST components
5. Disposal of excess HFST and containers
6. Contingency plan for possible failure during the HFST application

Submit a material safety data sheet (MSDS) for each shipment of HFST components before use.

Submit a certificate of compliance for the polymer resin binder and the 100% Recycled Color Coated Glass Aggregate.

MATERIALS

Polymer Resin Binder

Provide a polymer resin binder which holds the aggregate firmly in place, and which meets the following requirements.

Material Specifications:

Property	Requirement	Test Method
Ultimate Tensile Strength	2650 psi min.	ASTM D638
Elongation at break point	30% min.	ASTM D638
Compressive Strength	1600 psi min.	ASTM D695
Water Absorption	1.0 % max.	ASTM D570
Shore D Hardness, min. 77°F	65-75	ASTM D2240
Viscosity	1000-3000 mPa	ASTM D2393
Gel Time, minutes	15-45 min.	ASTM C881
Cure Rate	3 hrs. max.	ASTM D1640, 0.2" thickness
Mixing Ratio	As recommended by manufacturer	N/A

Aggregate

Supply a 100% recycled Color Coated Glass Aggregate. The aggregate is to be clean, dry, and free from deleterious matter. The aggregate must meet the following requirements.

Glass Topping Requirements

Life Cycle Performance

Color Coated Glass Aggregate will be UV fade resistant for a minimum of five years.

Skid Resistance

Color Coated Glass Aggregate System will have an initial friction value of 70.

Material Specifications:

Characteristic	100% Recycled Color Coated Glass Aggregate
Size Range Available {mm}	0.8-1.2, 1.2-3.0
Recycled Material	100%
Color Selection	Varied, customized
Color Retention	100%
Environmentally Sound:	100% % post-consumer recycled glass
Bulk Density:	Avg 86 lb/ft ³
Specific Gravity:	2.5
Hardness:	5.5 - 6.0 Mohs
Softening Point:	~1350°F
Physical Composition	Panel Glass Non-Lead, Amorphous Silica
Shape:	Sub-Angular, Non-Porous

PRE-CONSTRUCTION

Pre-construction Conference

Schedule a pre-construction conference with the Engineer at a mutually agreed time and place. Make the arrangements for the conference facility. Be prepared to discuss the trial HFST requirements.

Attendance at the pre-construction conference is mandatory for:

1. HFST Foreman
2. Project Superintendent

CONSTRUCTION

Attendance during construction activities is mandatory for:

1. HFST Foreman
2. Project Superintendent

Surfaces must be clean, dry, and free of all dust, oil, debris and any other material that might interfere with the bond between the polymer resin binder material and existing surfaces. Adequate cleaning of all surfaces will be determined by the Engineer.

Remove pavement markers and delineation within the area to receive HFST, prior to placing polymer resin binder.

Perform street sweeping before placing pavement markers and delineation.

Temporary or permanent pavement markers and delineation must be in place before lanes are open to public traffic.

The HFST must conform to the following:

1. Do not apply HFST to asphalt pavement surfaces that are less than 30 days old, unless sandblasted prior to application.
2. Do not apply the polymer resin binder on a wet surface or when the ambient temperature is below 50°F or when the anticipated weather conditions would prevent the proper application of the surface treatment as determined by the Engineer.
3. Surface preparation work, surface temperature, placement of the HFST must be in conformance with the binder supplier's specifications, these special provisions and as approved by the Engineer.
4. The minimum spread rate for polymer resin binder is 0.28-0.32 gal/sq. yd.
5. The minimum spread rate of retained aggregate is 13-20 lb/sq. yd.
6. HSFT must be allowed to cure for the minimum duration as recommended by the supplier's specifications and during that time the application area must be closed to all vehicle and contractor equipment traffic.

PREFORMED PAVEMENT MARKINGS

Ennis Flint, Premark, preformed pavement markings may be used on top of Ruby Lake HFST. Make sure that the surface is clean and free of any loose aggregate. Do not use thermo primer on Ruby Lake HFST. Take precaution when melting the pavement marking. Keep the flame 12-18 inches above pavement and melt using a sweeping motion. Keep flame off HFST as much as possible. Melt until the regularly spaced heating indicators flow together. DO NOT OVER HEAT.