

## **Stamped Asphalt Generic Specification**

### **1.0 GENERAL**

#### **1.1 Summary**

This generic specification refers to stamping a pattern into the asphalt surface and applying a colored surface coating treatment. The pattern and color of the stamped asphalt shall be specified on the project drawings.

#### **1.2 Related Sections**

- Section 1.0 General
- Section 2.0 Asphalt Stamping
- Section 3.0 Coating Composition and Performance Characteristics
- Section 4.0 Delivery, Storage and Handling
- Section 5.0 Surface Preparation
- Section 6.0 Coating Application
- Section 7.0 Coating Thickness
- Section 8.0 Applicator Training
- Section 9.0 Samples and Mockups
- Section 10.0 Field Quality Control

### **2.0 Asphalt Stamping**

#### **2.1 Hot Mix Asphalt (HMA)**

New asphalt must be placed to meet local required specifications. Compaction density must be met prior applying the asphalt stamps.

Existing asphalt must contain sufficient surface binder (asphalt cement) to allow a pliable surface when heated.

#### **2.2 Stamping the Asphalt**

Using flexible templates, stamp the pattern into the asphalt using a vibratory plate compactor. Stamping can be performed on a freshly placed asphalt surface when the asphalt is still pliable or into an existing asphalt

surface. An existing asphalt surface must be heated using an infrared heating apparatus insuring not to heat the surface above 325°F (163°C) Use slow cycled heat to ensure the surface does not burn. The surface should be heated to a depth of at least ¾" to ensure compaction (not crushing of the aggregate) below the template.

### **3.0 Coating Composition and Performance Characteristics**

This section covers the composition, handling and application characteristics for the Stamped Asphalt Coating System. Coatings used with this surfacing system must meet the minimum characteristic and performance properties described below.

#### **3.1 Asphalt Coating (Tint Base)**

##### Material Composition and Application Characteristics

**Table: 1**

<b>Characteristics</b>	<b>Requirement</b>
Resin .....	waterborne latex
% Solids by weight .....	> 80%
% Solids by volume .....	> 65%
Weight per gallon .....	13.5 lbs/gal
% non-reactive fillers .....	< 40%
% calcined bauxite aggregate .....	>15%
Volatile Organic Compounds .....	< 75 g/l or 1/4lb/gal
Boiling Range .....	147° - 477°F
Vapor Density .....	Heavier than air
Liquid Density .....	1.5 – 1.7 kg/l @ 20°C
Flashpoint ASTM D 3278 .....	>201°F
Flashpoint ASTM D 3278 .....	>201°F
Hazardous Ingredients .....	none
Viscosity @ 70°F (20°C) .....	100-110 kU
Mix Ratio (Coating : LiquidTint) gal/pints .....	5gal: 1pint
Dry mil thickness per coat .....	20 to 25 mils
Number of coats to achieve rec. thickness .....	3 coats

Performance Requirements

**Table: 2**

<b>Test</b>	<b>Requirement</b>
Dry Time (to re-coat) @ 50°F (10°C).....	50 min
Dry Time (to re-coat) @ 90°F (32°C).....	30 min
85% Cure (to permit traffic) @ 50°F (10°C).....	6 to 8 hours
85% Cure (to permit traffic) @ 90°F (32°C).....	2 to 4 hours
ASTM 2486 Scrub Resistance (30 dry mils)..... Applied as per manufacturers specifications.....	5000 cycles to max loss of 50% coating thickness
Dry mil build thickness per coat .....	20 to 25 mils
Temp. limits for service (of cured material) .....	-35°F to 145°F
Friction using a locked wheeled tester at 30 mph .....	>45 FN30R
Friction using a locked wheeled tester at 30 mph .....	>40 FN30R
Pedestrian Friction ASTM E303 British Pendulum.....	>70 BPN

**3.2 Liquid Tint** (coloring system)

The coloring system "Liquid Tint" shall consist of no less than 95% pure inorganic iron oxide pigments in a water base liquid carrier. Pigment particle size (fineness) must pass 95% minus 325 mesh. Liquid Tint must be alkali resistant, water insoluble, inert, light resistant, inorganic, and lime-proof.

**3.3 Primer**

Primer shall be water based 100% acrylic waterborne

Material Composition, Handling and Application Characteristics

**Table: 3**

<b>Characteristics</b>	<b>Requirement</b>
Resin .....	waterborne latex
% Solids by weight .....	> 30%
% Solids by volume .....	> 29%
Weight per gallon .....	8.5 lbs/gal
% non-reactive fillers .....	< 0%
Volatile Organic Compounds .....	< 45 g/l or 1/10lb/gal
Boiling Range .....	147° - 477°F
Vapor Density .....	Heavier than air
Flashpoint ASTM D 3278 .....	>201°F
Flashpoint ASTM D 3278 .....	>201°F
Hazardous Ingredients .....	none
Viscosity @ 70°F (20°C) .....	44> kU
Mix Ratio (Primer : Water) .....	1 primer : 1 water
Dry mil thickness per coat .....	1 to 2 mils
# of prime coats to achieve rec. thickness .....	1 coat

Performance Requirements

**Table:4**

<b>Test</b>	<b>Requirement</b>
Dry Time (to re-coat) @ 50°F (10°C).....	50 min
Dry Time (to re-coat) @ 90°F (32°C).....	30 min
ASTM 2486 Scrub Resistance (3 wet mils).....	500 cycles
Dry mil build thickness per coat .....	1 to 2 mils
Temp. limits for service (of cured material) .....	-35°F to 145°F

**4.0 Delivery, Storage and Handling**

4.1 Packaging and Labeling

All coating products shall be packed in standard closed containers. Each container of separately packaged component shall be clearly and durably labeled to indicate the date of manufacture, manufacturer’s batch number, quantity, color, component identification and designated name or formula specification number together with special instructions.

4.2 Delivery, Storage and Handling

Coating 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; do not allow coating to freeze. Care shall be taken in handling of coating containers to prevent puncture, inappropriate opening or other action, which may lead to product contamination. No materials that are past the coating manufacturer’s recommended shelf life shall be used without the approval of the coating manufacturer.

**5.0 Surface Preparation**

5.1 Cleaning

Broom using mechanical brooming device, or stiff bristle hand broom. Scrape and blow fine sand and debris off of surface. 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.

## 5.2 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 tool for this procedure.

## 5.3 Preparation of New Asphalt

New asphalt surfaces shall be allowed to cool after final compaction roll to less than 140° F before applying coating. Asphalt mix design shall specified by a qualified Pavement Engineer and shall be designed for the purpose of the application.

## **6.0 Coating Application**

### 6.1 Environmental Conditions

Surfaces should be dry for at least 24 hours prior to applying Stamped Asphalt coatings. 50°F and rising, is the recommended minimum air and surface temperature. The temperature of the asphalt surface must be at least 5°F above the dew point temperature during and after applying coating. Coating application must be complete at least two hours before sunset to allow for proper cure.

### 6.2 Masking

Mask all adjacent areas using paint-grade masking tape. Use duct taped on concrete and asphalt surfaces. Building paper extended a minimum of 48 inches beyond the edge of coated area is required to prevent over-spray of coatings onto adjacent areas.

### 6.3 Spray Equipment

Spray texture gun (Graco RTX1500 TexSpayer).  
or Benron "EZ-TEX DX" sprayers.

The coating manufacturer shall approve spray gun settings and alternative spray equipment.

### 6.3 Mixing Base Coat

Contractor to follow latest mixing techniques provided by the manufacturer.

## **7.0 Coating Thickness**

7.1 Standard Thickness. The applied thickness of the coating shall be determined according to the application as noted in table 5. The owner may specify a greater thickness if so desired.

### **Required Film Thickness**

**Table: 5**

<b>Application</b>	<b>Film Thickness</b>
Prime Coat where applicable .....	5 wet mils (1 dry mil)
First coat .....	25 wet mils (20 dry mils)
Second coat .....	30 wet mils (25 dry mils)
Third coat .....	30 wet mils (25 dry mils)
Seal Coat where applicable .....	5 wet mils (1 dry mil)

## **8.0 Applicator Training**

8.1 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 the 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.

## **9.0 Samples and Mockups**

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

Samples shall display the following:

1. Brick or stone Pattern
2. Brick or stone color
3. Variations of the above if requested

Coating samples and mockups, are to be applied to an asphalt surface covering a 96" x 96" area.

Approval of color and pattern 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.

## **10.0 Field Quality Control**

- 10.1 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.
- 10.2 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 (before and after) if applicable
  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 application of each coat

### Note:

On projects larger than 1,000 square feet, break project into areas of approximately 1,000 square feet for the purpose of photo taking and record keeping. Number these areas and record the respective numbers on scaled drawing.

- 10.3 Dry film thickness shall be confirmed by the owner (or owners representative) on site, during the application process.

### Method:

2" x 4" lengths of duct-tape (or 2" x 4" thin plastic, glass or metal plates) shall be secured to the substrate that will receive coating. The tape will be randomly placed averaging one tape per 300 sq ft. These tapes shall be pre-marked (on the adhesive side) with location matching a marked, scaled drawing. The tape shall be removed within 1 hour after the final coat has been applied. These samples shall be kept by the owner (or owners representative) for future verification of dry film thickness (if verification becomes necessary).