

## **STREETBOND® SB150 COATED ASPHALT SPECIFICATION FLAT (NON-STAMPED) SURFACE**

### **PART 1 – GENERAL**

#### **1.1 DESCRIPTION**

- A. StreetBond®** Advanced Coatings for Asphalt are specifically formulated for application to asphalt pavement and have been confirmed by a certified testing facility to possess a balance of performance properties for a durable and color-fast finish.
- B.** A variety of **StreetBond®** coating colors are available. Please refer to [streetbond](http://streetbond) to view these. Custom colors are available upon request.
- C.** Certain colors of the **StreetBond®** coatings have been independently verified to have an SRI greater than 29 and therefore can help projects qualify for points in the LEED® program under Heat Island Effect: Non-Roof. Please refer to [streetbond](http://streetbond) for further information.
- D.** Qualifications. Only **Siplast StreetBond® Select Contractors** may bid for and perform the imprinted portion of this work. Please refer to **Section 1.3 DEFINITIONS**.
- E.** **StreetBond®** products are manufactured in **ISO 9001:2008 / ISO 14001:2004** facilities to ensure quality products produced in legally-responsible and environmentally-conscious manner
- F.** **StreetBond®** coatings are only available from Siplast. Contact **Gavin Lee** at **415.583.2165**

#### **1.2 REFERENCES**

- |                             |   |
|-----------------------------|---|
| <b>A. ASTM D4541</b>        | Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Tester.  |
| <b>B. ASTM D4060</b>        | Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.   |
| <b>C. ASTM D2697</b>        | Standard Test Method for Volume of Nonvolatile Matter in Clear or Pigmented Coatings.   |
| <b>D. ASTM D522-93A</b>     | Standard Test Method for Mandrel Bend Test of Attached Organic Coatings.  |
| <b>E. ASTM D1653</b>        | Standard Test Method for water vapor transmission through organic film coatings.  |
| <b>F. ASTM G154</b>         | QUV Accelerated Weathering Environment. Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials. |
| <b>G. ASTM D2369</b>        | Weight Solids Standard test method for Volatile Content of Coatings.  |
| <b>H. ASTM D1475</b>        | Standard Test Method for Density of Paint, Varnish, Lacquer, Other related products   |
| <b>I. ASTM D2240 (2000)</b> | Standard Test Method for Rubber property – Durometer hardness.  |
| <b>J. ASTM D5895</b>        | Standard Test Method of drying or curing during film formation of organic coatings using mechanical recorders.                                |
| <b>K. ASTM D570</b>         | Standard Test Method for water absorption of plastics.  |

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### **1.3 DEFINITIONS**

- A. “Siplast Select StreetBond® Contractor”** has valid Certification as offered by Siplast and are reviewed on an annual basis. All **Siplast Select StreetBond® Contractors** have been qualified by Siplast to perform the Work and offer a product Warranty but require approval by a Siplast Field Technical Representative at 415.583.2165
- B. “Contractor”** means the installer of the **StreetBond®** coatings.
- C. “Owner”** means the Owner and refers to the representative person who has decision making authority for the Work.
- D. “Regional Business Development Representative”** is a Siplast Technical Sales Representative who manages the **StreetBond®** product in a given territory.
- E. “Stamped asphalt pavement”** is asphalt pavement that has been subjected to imprinting or texturing in a specific pattern.
- F. “Non - Stamped asphalt pavement”** is asphalt pavement that is unstamped and is sometimes referred to as “flat-work”.
- G. The “Work”** is the asphalt pavement texturing work contemplated in this bid submission and specification.
- H. “Scuffing”** is a “tear” of the asphalt pavement caused by an external force – for example turning the steering wheel of a stationary vehicle. Scuffing is generally the result of poorly designed or improperly installed asphalt and would most - commonly be seen on weaker residential asphalt.
- I. “Layer”** is a signal thin pass of coating, applied with a texture spray gun, which is allowed to dry before the next layer is applied.
- J. “Warranty”** is a guarantee to the property owner that **StreetBond® SB150**, when properly applied will not peel, delaminate or show abnormal wear over specific period of time depending on the traffic volumes and number of layers applied. Please contact 415.583.2165 for more details.

### **1.4 SUBMITTALS**

A copy of the Accreditation Certificate, available from the **Applicator**, is required with submittal. Independent product test results available upon request.

**STREETBOND® SB150 COATED ASPHALT SPECIFICATION  
FLAT (NON-STAMPED) SURFACE**

**PART 2 – PRODUCTS**

**2.1 MATERIALS - STREETBOND® COATINGS**

**StreetBond®** coatings have been scientifically formulated to provide the optimal balance of performance properties for a durable, long - lasting color and textured finish to asphalt pavement surfaces. Some of these key properties include wear and crack resistance, color retention, adhesion, minimal water absorption and increased friction properties. **StreetBond®** coatings are environmentally safe and meet EPA requirements for Volatile Organic Compounds (VOC).

- A. StreetBond® SB150** is a two part premium epoxy - modified, acrylic, waterborne coating specifically designed for application on asphalt pavements. It has a balance of properties to ensure good adhesion and movement on flexible pavement, while providing good durability. **StreetBond® SB150** is durable in both dry and wet environments.
- B. StreetBond® Colorant** is a highly concentrated, high quality, UV stable pigment blend designed to add color to **StreetBond® SB150** coatings. One unit of Colorant shall be used with one pail of **StreetBond®** coating material.

**2.1.1 Properties of StreetBond® coatings**

The following tables outline the test results for physical and performance properties of the **StreetBond®** coatings as determined by an independent testing laboratory.

**TABLE 1: Typical Physical Properties of StreetBond® Coatings**

<b>Characteristic</b>	<b>Test Specification</b>	<b>SB150</b>
Solids by Volume	ASTM D2697	59.14%
Solids by Weight	ASTM D2369	71.60%
Density	ASTM D1475	13.27 lbs./gal ( 1.59kg/l)

**STREETBOND® SB150 COATED ASPHALT  
SPECIFICATION FLAT (NON-STAMPED) SURFACE**

**TABLE 2: Typical Performance Properties of StreetBond® Coatings**

Characteristic	Test Specification	SB150
Dry time (To re-coat)	ASTM D5895 23°C; 37% RH	<b>35 min</b>
Taber Wear Abrasion Dry H-10 wheel	ASTM D4060 1 day cure	<b>0.33g/1000 cycles</b>
Taber Wear Abrasion Wet H-10 wheel	ASTM D4060 7 days cure	<b>0.15g/1000 cycles</b>
QUV Accelerate Weathering Environment	ASTM G - 151 ΔE 1,500hrs.	<b>0.53 (Brick)</b>
Hydrophobicity Water Absorption	ASTM D570	<b>7.89%</b>
Shore A Hardness	ASTM D2240	<b>80.8</b>
Mandrel Bend	ASTM D522 - 93A	<b>1/8" @ 23 C</b>
Permeance	ASTM D1653	<b>5.6 perm</b>
VOC	per MSDS	<b>19 g/l</b>
Adhesion	ASTM D4541	<b>&gt;300psi (692psi)</b>
Friction Wet	ASTM E303 British Pendulum Tester	<b>Wet=77.3 Dry=81.3</b>

Certificates of Analysis are available upon request for each of these properties.

## **2.2 EQUIPMENT FOR STREETBOND® APPLICATION**

The equipment described has been designed specifically for optimal application of StreetBond® coatings. Other equipment may or may not be suitable and could compromise the performance of the StreetBond® coatings and/or reduce crew productivity.

- A.** The **SB Flex Sprayer** is a proprietary coating sprayer supplied by Intech Equipment and is capable of applying the **StreetBond®** coatings to the asphalt pavement surface in a thin, controlled film which will optimize the drying and curing time of the coating. A **Graco RTX** and **RapidSprayerII** sprayer may also be used.
- B.** The **StreetBond® Coatings Mixer** is a motorized mixing device designed to ensure efficient and thorough blending of the **StreetBond®** components.
- C.** **Backpack or Hand - Held sprayer** to apply the diluted **StreetBond® Adhesion Promoter Concentrate**.
- D.** The **RapidFinisher II** is an electric powered broom through [GRiD Solutions USA](http://www.grid-solutions.com) which can be used in the application of **StreetBond®** coatings to improve productivity. It is especially useful on larger projects.

**STREETBOND® SB150 COATED ASPHALT SPECIFICATION  
FLAT (NON STAMPED) SURFACE**

**PART 3 – EXECUTION**

**3.1 GENERAL**

**StreetBond® coating** shall be supplied and applied on non - textured asphalt surface by an **Siplast StreetBond® Select Contractors** in accordance with the plans and specifications or as directed by the Owner. Do not begin installation without confirmation of an Accreditation Certificate. Specifications for the execution of the **StreetPrint®** system can be found at [streetbond](http://streetbond.com).

**3.2 PRE-CONDITIONS**

The condition of the asphalt substrate will impact the performance of the **StreetBond®** coatings. A highly stable asphalt pavement free of defects is recommended.

**3.2.1 Prerequisites for New Asphalt Pavement**

A durable and stable asphalt pavement mix design installed according to best practices over a properly prepared and stable substrate is a pre - requisite for all long - lasting asphalt pavement surfaces. The application of **StreetBond®** does not change this requirement.

**3.2.2 Pavement Marking Removal: recommended guidelines**

Pavement markings may be removed by sandblasting, water - blasting, grinding, or other approved mechanical methods. The removal methods should, to the fullest extent possible, cause no significant damage to the pavement surface.

The Owner shall determine if the removal of the markings is satisfactory for the application of **StreetBond®** coatings. Work shall not proceed until this approval is granted.

**3.2.3 Surface Preparation**

The asphalt pavement surface shall be dry and free from all foreign matter, including but not limited to dirt, dust, de-icing materials, and chemical residue.

**STREETBOND® SB150 COATED ASPHALT  
SPECIFICATION FLAT (NON-STAMPED) SURFACE**

### 3.3 APPLICATION OF STREETBOND® COATINGS

#### 3.3.1 Coating Application Guidelines

- A. The **Applicator** shall use the **SB Flex Spray System** or suitable texture coatings sprayers to apply the **StreetBond®** coatings.
- B. The asphalt pavement surface shall be completely dry and thoroughly cleaned prior to application of the coatings.
- C. The coating application shall proceed as soon as practical upon completion of the imprinting of the asphalt pavement where applicable.
- D. For polished asphalt, **StreetBond® Adhesion Promoter** should be applied directly to the asphalt and allowed to dry completely prior to the first layers of coating.
- E. For concrete surfaces, **StreetBond® WB Concrete Primer** or **StreetBond® QS Concrete Primer** should be applied and allowed to cure prior to the first layers of coating. Please consult Technical Data sheets for more details on applications.
- F. The first layer of coating shall be spray applied then broomed to work the coating material into the pavement surface. Subsequent applications shall be sprayed then broomed or rolled. Each application of coating material shall be allowed to dry to the touch before applying the next layer.
- G. The **Contractor** shall apply the **StreetBond®** coatings only when the air temperature is 50°F / (10°C) and rising and will not drop below 50°F / (10°C) within 24 hours. No precipitation should be expected within 24 hours.

### 3.4 COATING COVERAGE & THICKNESS

Coating coverage and thickness is as outlined in **TABLE 4** below. Actual coverage may be affected by the texture of the asphalt pavement substrate and the imprint pattern selected. There will be less coverage with the first layer and higher coverage with subsequent layers.

**TABLE 4: Coating Coverage & Thickness**

# OF LAYERS	COVERAGE (approx.)		THICKNESS (approx.)			
	NON - TEXTURED		WET		DRY	
	sqft/unit*	sqm/unit*	mm	mil	mm	mil
3	200	18.6	0.84	33	0.48	19
4	150	13.9	1.12	44	0.66	26
5	120	11.2	1.40	55	0.81	32
6	100	9.3	1.68	66	0.97	38

*\*1 unit is a nominal 5 gallon pail comprising Part A, Part B and Colorant (approximately 4.12 gallons). 1 unit when sprayed as a single layer covers approximately 600sqft (55.7 sqm), with an approximate thickness of 6.3mil (0.16mm) dry.*

**STREETBOND® SB150 COATED ASPHALT SPECIFICATION  
FLAT (NON-STAMPED) SURFACE**

**3.5 RECOMMENDED COATING COVERAGE RATES**

Please check the StreetBond Products in advance to confirm the recommended application for the climate conditions at the project location.

**TABLE 5: Recommended Coating Coverage Rates**

<b>Application</b>	<b>Hot Dry Climate</b>	<b>Temperate/Winter Climate</b>
<b>Pedestrian only</b>	3 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 200 ft <sup>2</sup> (18.6m <sup>2</sup> ) per 5 gallon (20 Litre) unit	3 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 200 ft <sup>2</sup> (18.6m <sup>2</sup> ) per 5 gallon (20 Litre) unit
<b>Residential driveway</b>	3 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 200 ft <sup>2</sup> (18.6m <sup>2</sup> ) per 5 gallon (20 Litre) unit	3 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 200 ft <sup>2</sup> (18.6m <sup>2</sup> ) per 5 gallon (20 Litre) unit
<b>Vehicular traffic</b>		
<b>Up to 500 cars per day per lane</b>	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit
<b>500 to 1000 cars per day per lane</b>	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit, plus one additional layer in the wheel paths
<b>1000 to 2000 cars per day per lane</b>	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit, plus one additional layer in the wheel paths	4 layers at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit, plus two additional layers in the wheel paths
<b>2000 to 3000 cars per day per lane</b>	4 passes at 600 ft <sup>2</sup> (56m <sup>2</sup> ) per 5 gallon (20 Litre) unit for a net coverage of 150 ft <sup>2</sup> (13.9m <sup>2</sup> ) per 5 gallon (20 Litre) unit, plus two additional layers in the wheel paths	<b>No warranty is provided for traffic levels above 2000 cars per day per lane</b>
	<b>No warranty is provided for traffic levels above 3000 cars per day per lane</b>	

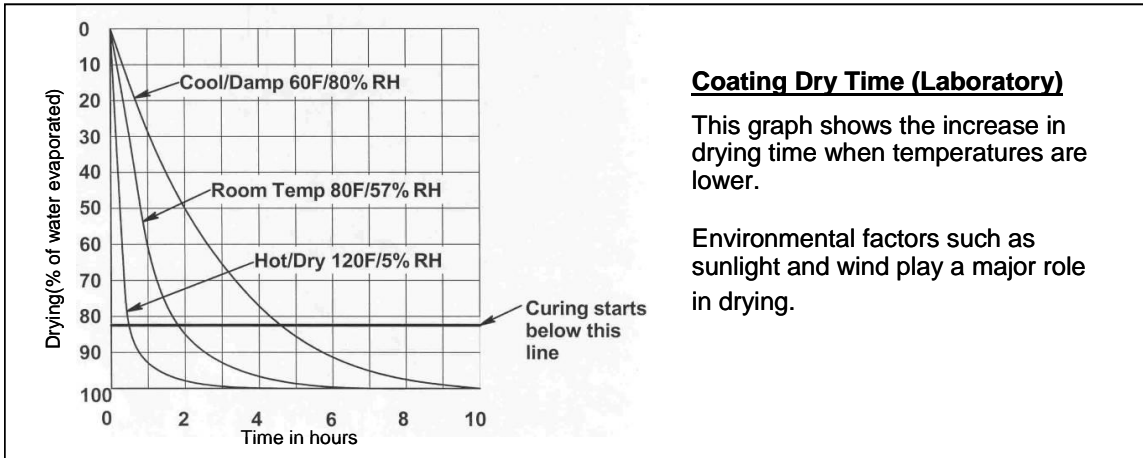
1. **Additional layers** of StreetBond® SB150 coatings may be used to provide additional build thickness in high wear areas such as vehicle wheel paths and turning areas.
2. A maintenance program may be required for applications exposed to:
  - abrasive materials (such as salt and sand)
  - abrasive equipment (such as snow removal equipment)
  - Studded winter tires

**STREETBOND® SB150 COATED ASPHALT  
SPECIFICATION FLAT (NON-STAMPED) SURFACE**

**3.6 OPENING TO TRAFFIC**

Minimally, StreetBond® SB150 coating must be 100% dry and sufficient curing time must be allowed before traffic is permitted on the surface.

**TABLE 6: COATING DRY TIMES (TYPICAL)**



If StreetBond® coatings are applied when moisture cannot evaporate, then the coating will not dry. The drying and curing of StreetBond® coatings have a direct impact on performance.

**PART 4 – MEASUREMENT AND PAYMENT**

**4.1 MEASUREMENT**

The measured area is the actual area of asphalt pavement where StreetBond® has been applied, measured in place. No deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, bollards or by any public utility appurtenances within the area.

**4.2 PAYMENT**

Payment will be full compensation for all work completed as per conditions set out in the contract. For unit price contracts, the payment shall be calculated using the measured area as determined above.