

STREETBOND150 COATED ASPHALT & CONCRETE SPECIFICATION - FLAT (NON STAMPED) SURFACE

PART 1 – GENERAL

1.1 DESCRIPTION

- A. StreetBond** Advanced Coatings are specifically formulated for application to asphalt and concrete 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.** 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 www.hubss.com for further information.
- C.** Qualifications. Only **Accredited StreetBond Applicators** may bid for and perform the this work. Please refer to **Section 1.3 DEFINITIONS**.
- D. StreetBond** products are manufactured in **ISO9001 / ISO14001** facilities to ensure quality products produced in legally-responsible and environmentally-conscious manner
- E. StreetBond** coatings are only available in Canada from HUB Surface Systems (www.hubss.com).

1.2 REFERENCES

- A.** ASTM D-4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Tester.
- B.** ASTM D-4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
- C.** ASTM D-2697 Standard Test Method for Volume of Nonvolatile Matter in Clear or Pigmented Coatings.
- D.** ASTM D522-93A Standard Test Method for Mandrel Bend Test of Attached Organic Coatings.
- E.** ASTM D1653 Standard test method for water vapor transmission through organic film coatings.
- F.** ASTM G-154 QUV Accelerated Weathering Environment. Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials.
- G.** ASTM D 2369 Weight Solids Standard test method for Volatile Content of Coatings.
- H.** ASTM D 1475 Standard Test method for Density of Paint, Varnish, Lacquer, Other related products.
- I.** ASTM D-2240 (2000) Standard Test Method for Rubber property – Durometer hardness.
- J.** ASTM D-5895 Standard Test Method of drying or curing during film formation of organic coatings using mechanical recorders.

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K. ASTM D-570 Standard Test Method for water absorption of plastics.

1.3 DEFINITIONS

- A. **“Accredited StreetBond Applicator”** has valid Certification for both Textured (stamped) and Non-Textured (flatwork) as offered by Quest Construction Products and are reviewed on an annual basis. All **Accredited StreetBond Applicators** have been qualified by Quest Construction Products to perform the Work and offer a product Warranty.
- B. **“Approved Applicator”** has valid Certification for non-textured (flatwork) application **ONLY** as offered by Quest Construction Products and are reviewed on an annual basis. Product Warranties may be available to **Approved Applicators** but require approval and supervision by a Quest Construction Products Technical Sales Representative.
- C. **“Applicator”** means the installer of the **StreetBond** coatings.
- D. **“Owner”** means the Owner and refers to the representative person who has decision making authority for the Work.
- E. **“TSR”** is a HUB Technical Sales Representative who manages the StreetBond product in a given territory.
- F. **“Stamped asphalt pavement”** is asphalt pavement that has been subjected to imprinting or texturing in a specific pattern.
- G. **“Non-Stamped asphalt pavement”** is asphalt pavement that is unstamped and is sometimes referred to as “flatwork”.
- H. The **“Work”** is the asphalt pavement texturing work contemplated in this bid submission and specification.
- I. **“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.
- J. **“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.
- K. **“Warranty”** is a guarantee to the property owner that StreetBond150, 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 your local TSR for more details.

1.4 SUBMITTALS

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

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PART 2 – PRODUCTS

2.1 MATERIALS – STREETBOND COATINGS

StreetBond coatings are formulated to provide the optimal balance of performance properties for a durable, long-lasting color and textured finish to asphalt and concrete pavement surfaces. 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. StreetBond150** is a 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. **StreetBond150** 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 **StreetBond150** 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.

Characteristic	Test Specification	SB150
Solids by Volume	ASTM D-2697	53.712%
Solids by Weight	ASTM D-2369	71.020%
Density	ASTM D-1475	13.27 lbs/gal (1.58kg/l)

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TABLE 2: Typical Performance Properties of StreetBond Coatings

Characteristic	Test Specification	SB150
Dry time (To re-coat)	ASTM D-5895 23°C; 37% RH	35 min
Taber Wear Abrasion Dry H-10 wheel	ASTM D-4060 1 day cure	0.760g/1000 cycles
Taber Wear Abrasion Wet H-10 wheel	ASTM D-4060 7 days cure	1.670g/1000 cycles
QUV Accelerate Weathering Environment	ASTM G-151 ΔE 1,500hrs.	0.53 (Brick)
Hydrophobicity Water Absorption	ASTM D-570	11.945%
Shore hardness	ASTM D-2240	38.3
Mandrel Bend	ASTM D522-93A	1/4" @ 21° C
Permeance	ASTM D-1653	3.45g/m ² / 24hr/mmHg (52 mils)
VOC	per MSDS	19.14%
Adhesion to Asphalt	ASTM D-4541	Substrate Failure
Friction Wet	ASTM E-303 British Pendulum Tester	Wet=77.3 Dry=81.3

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 produced by Integrated Paving Concepts Inc. that can be used in the application of **StreetBond** coatings to improve productivity. It is especially useful on larger projects.

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PART 3 - EXECUTION

3.1 GENERAL

StreetBond coating shall be supplied and applied on non-textured asphalt or concrete surface by an **Accredited StreetBond Applicator** 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 www.hubss.com.

3.2 PRE-CONDITIONS

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

3.2.1 Pre-requisites for new asphalt and concrete pavement

A durable and stable pavement formulation installed according to best practices over a properly prepared and stable substrate is a pre-requisite for all long-lasting asphalt pavement surfaces.

3.2.3 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.

3.2.4 Surface Preparation

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

3.3 APPLICATION OF STREETBOND COATINGS

3.3.1 Coating Application Guidelines

- A.** The asphalt pavement surface shall be completely dry and thoroughly cleaned prior to application of the coatings.
- B.** The coating application shall proceed as soon as practical upon completion of the imprinting of the asphalt pavement where applicable.

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- 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 Concrete Primer WB** or **StreetBond Concrete Primer QS** 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 or roller applied then broomed to work the coating material into the pavement surface. Subsequent applications shall be sprayed or rolled then broomed or rolled. Each application of coating material shall be allowed to dry to the touch before applying the next layer.
- G. The **Applicator** 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 AND 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.

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3.5 Recommended Coating Coverage Rates

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

TABLE 5: Recommended Coating Coverage Rates

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

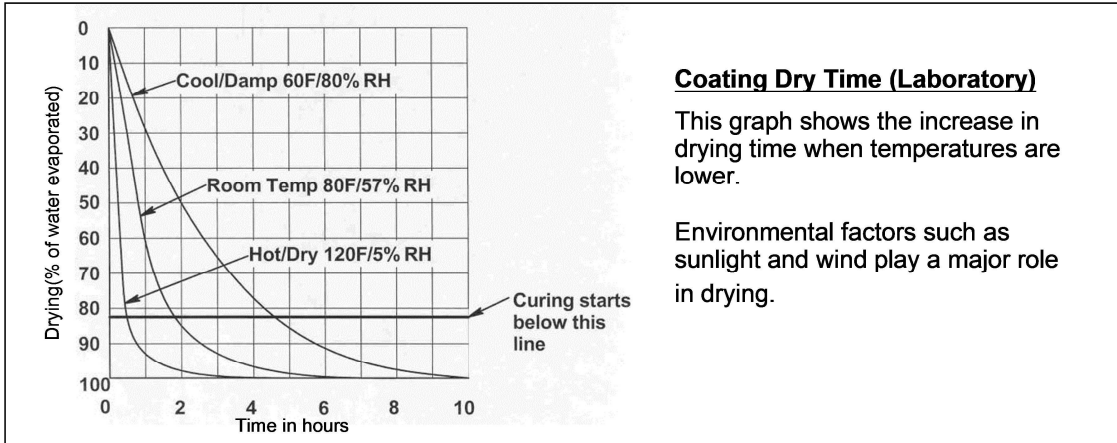
1. **Additional layers** of **StreetBond150** coatings may be used to provide additional build thickness in high wear areas such as vehicle wheel paths and turning areas.
2. A maintenance program may be required for applications exposed to:
 - abrasive materials (such as salt and sand)
 - abrasive equipment (such as snow removal equipment)
 - Studded winter tires

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3.6 OPENING TO TRAFFIC

Minimally, StreetBond150 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.