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STREETBOND® SB150 COATED CONCRETE SURFACE SPECIFICATION



STREETBOND® SB150 COATED ASPHALT CONCRETE SURFACES SPECIFICATION



PREPARED BY:

GAF® Architectural Information Services

PROJECT NO.: AD002

Note: GAF® does not practice architecture or engineering. This Design Line is provided as a guide specification and is based on criteria provided to GAF®. GAF® has not observed the jobsite conditions, contract specifications, or other documents and shall not be construed in any manner to be the designer of record.

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PART 1 – GENERAL

1. DESCRIPTION

- A. **StreetBond®** Advanced Coatings are specifically formulated for application to asphalt pavement but also excel over concrete when a primer is used. StreetBond® have been confirmed by a certified testing facility to possess a balance of performance properties for a durable and colour-fast finish.
- B. A variety of **StreetBond®** coating colours are available. Please refer to streetbond.com to view these. Custom colours are available upon request.
- C. Certain colours of the **StreetBond®** coatings have had SR values independently verified and can help projects qualify for points in the LEED® program under Heat Island Effect: Non-Roof. Please refer to streetbond.com for further information.
- D. **Primer** specified for use with **StreetBond®** coatings shall be **StreetBond® WB Concrete Primer, StreetBond® QS Concrete Primer** or approved alternative.
- E. Qualifications. Only **Certified StreetBond® Applicators** may bid for and perform the imprinted portion of this work. Please refer to **Section 1.3 DEFINITIONS**.
- F. **StreetBond®** products are manufactured in **ISO 9001:2008 / ISO 14001:2004** facilities to ensure quality products produced in legally-responsible and environmentally-conscious manner.
- G. **StreetBond®** coatings are only available from GAF and are distributed in Canada by Hub Surface Systems.

1.2 REFERENCES

- | | |
|-----------------------------|---|
| A. ASTM D4541 | Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Tester. |
| B. ASTM D4060 | Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser. |
| C. ASTM D2697 | 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 G154 QUV | Accelerated Weathering Environment. Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials. |
| G. ASTM D2369 | Weight Solids Standard test method for Volatile Content of Coatings. |
| H. ASTM D1475 | Standard Test method for Density of Paint, Varnish, Lacquer, Other related products. |
| I. ASTM D2240 (2000) | Standard Test Method for Rubber property – Durometer hardness. |



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- J. ASTM D5895** Standard Test Method of drying or curing during film formation of organic coatings using mechanical recorders.

- K. ASTM D570** Standard Test Method for water absorption of plastics.

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1.3 DEFINITIONS

- A. **“Certified StreetBond® Applicator”** has valid Certification for SB120/150 as offered by GAF - StreetBond and reviewed on a bi-annual basis. All **Certified StreetBond® Applicators** with appropriate Certification have been qualified by StreetBond to perform the Work and offer a product Warranty.
- B. **“Approved Applicator”** has valid Certification for SB120/150 as offered by GAF - StreetBond and are reviewed on a bi-annual basis. Product Warranties may be available to **Approved Applicators** but require approval and supervision by a GAF - StreetBond 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 GAF - StreetBond Technical Sales Representative who manages the StreetBond® product in a given territory.
- F. **“Concrete pavement”** is concrete pavement to which coating will be applied and once the surface has been properly repaired.
- G. **The “Work”** is the concrete pavement coating work contemplated in this bid submission and specification.
- H. **“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.
- I. **“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 your local TSR 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.

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 colour and textured finish to any pavement surfaces. Some of these key properties include wear and crack resistance, colour 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 but also excel over concrete when a primer is used. 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 colour to **StreetBond® SB150** coatings. One unit of Colorant shall be used with one pail of **StreetBond®** coating material.
- C. **StreetBond® QS Concrete Primer** is a clear, two component epoxy polyamide primer specifically designed to increase the bond for StreetBond® coatings to concrete surfaces.

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StreetBond® WB Concrete Primer is a clear, single component epoxy primer specifically designed to increase the bond for **StreetBond®** coatings to concrete surfaces. Both primers protect against destructive salts, oils, solvents and gasoline. Their low viscosity allows penetration into the surface creating a tenacious physical and chemical bond.

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: Physical Properties of StreetBond® SB150 Coatings

Characteristic	Test Specification	SB150 range
Solids by Volume	ASTM D2697	53.5% - 60.5%
Solids by Weight	ASTM D2369	70% - 76%

TABLE 2: Typical Performance Properties of StreetBond® SB150 Coatings

Characteristic	Test Specification	SB150 range
Dry time (To re-coat)	ASTM D5895 @23°C; 37% RH	30 - 45 min
Taber Wear Abrasion Dry H-10 wheel	ASTM D4060 7 day cure	0.16 - 1.0 g/1000 cycles
Taber Wear Abrasion Wet H-10 wheel	ASTM D4060 modified 7 day cure	1.5 - 4.0 g/1000 cycles
Hydrophobicity Water Absorption (670 hr, 23C)	ASTM D471	8% - 12%
Mandrel Bend	ASTM D522 - 93A	0.5" to 1.00"
VOC	per SDS	<50 g/liter
Adhesion	ASTM D4541	300 – 1400 psi (or cohesive asphalt failure before adhesion failure)
Friction Wet & Dry	ASTM E303 British Pendulum Tester	Dry 55-90 Wet 35-75 Note: Friction is affected by the texture of the substrate.
MEK scrubs 5,000 cycles	ASTM D2486 (modified)	0% exposed substrate

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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 **RapidSprayer II** 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 HUB Surface Systems which can be used in the application of **StreetBond®** coatings to improve productivity. It is especially useful on larger projects.

PART 3 – EXECUTION

3.1 GENERAL

StreetBond® coating shall be supplied and applied on concrete surface by a **Certified 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 concrete substrate will impact the performance of the **StreetBond®** coatings. A highly stable concrete pavement free of defects is recommended.

3.2.1 Concrete Surface Preparation

- A. Concrete should be wet cured (no curing compound).
- B. 28 days after placement of concrete, shotblast with steel shot to International Concrete Repair Institute CSP 4 (assessed using ICRI rubber comparators). The steel shot should be S-280 (0.028 in. (0.71 mm) or S-330, 0.033 in. (0.84 mm).
- C. Conduct a moisture test to ensure moisture levels in the slab are acceptable. The preferred test is ASTM F2170 relative humidity test. A relative humidity level of 75% is desired. Using a moisture meter to measure levels deeper in the slab is an alternative test with a target of 7%. ASTM D-4263 “plastic sheet method” is commonly used. The preference is that there is no moisture present under the sheet, either in the form of droplets on the underside of the plastic sheet or a darkening of the concrete surface. StreetBond is breathable and will tolerate a small amount of moisture so some judgment can be applied.

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- D. Apply **StreetBond Primer QS** per application instructions, mixed 1 part Part A, one part Part B and diluted with 2 parts Acetone, MEK or Xylol by volume. Coverage rate should be 0.4 to 0.5 diluted gallons/100 ft².
- E. Allow QS Concrete Primer to fully dry before applying StreetBond coatings. Surface may be slightly tacky, but must not transfer residue to hands or feet. Primer must be coated with StreetBond coating within 48 hours for optimum bonding results.

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 concrete pavement surface shall be completely dry and thoroughly cleaned prior to application of the coatings.
- C. **StreetBond® QS Concrete Primer, StreetBond® WB Concrete Primer** or approved alternative shall be applied and allowed to cure prior to the first layers of coating. Please consult Technical Data sheets for more details on applications and mixing instructions.
- D. 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.
- E. 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 concrete pavement. 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

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approximate thickness of 6.3mil (0.16mm) dry. Smoother concrete surfaces will increase your coverage rate per unit.

3.5 RECOMMENDED COATING COVERAGE RATES

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

TABLE 5: Recommended Coating Coverage Rates

	Hot Dry Climate	Temperate/Winter Climate
Application		
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	

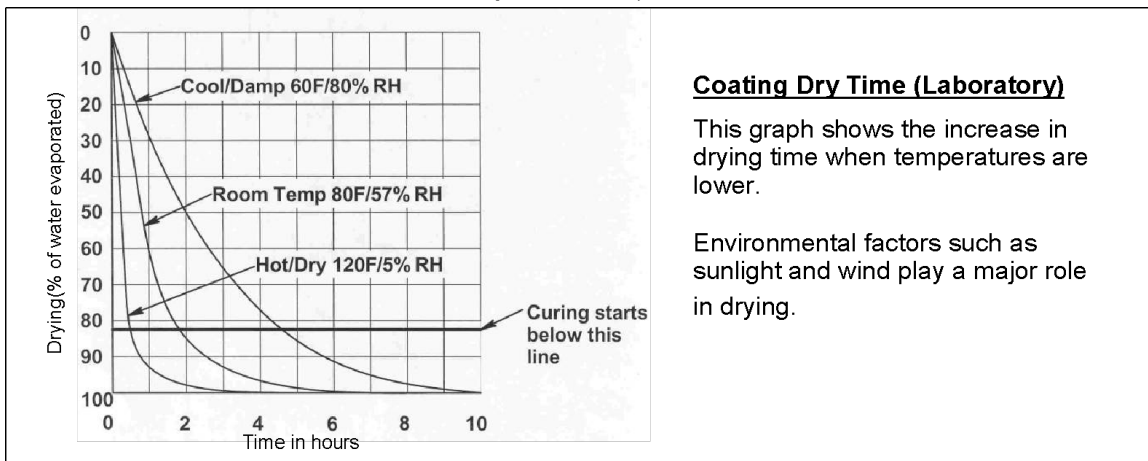
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1. **Additional layers** of **StreetBond® SB150** coatings may be used to provide additional build thickness in high wear areas such as vehicle wheel paths and turning areas.
2. A maintenance program may be required for applications exposed to:
 -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

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 concrete 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.



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