

STREETBOND COATING APPLICATION TO NON TEXTURED ASPHALT PAVEMENT

reNEWable Times Square Epoxy Coating Specifications

PART 1 – GENERAL

1.1 DESCRIPTION

- A. **StreetBond SP150E** HMA pavement coating is a proprietary coating specifically designed for application to HMA pavement substrates. Typical pavement applications include paved entranceways, parking lots, residential streets and driveways, sidewalks, plazas, medians, and cross-walks.
- B. **StreetBond SP150E** is a highly specialized HMA pavement coating. It is designed to deliver a “balance of performance properties” that takes into consideration the inherent characteristics of HMA pavement. Please refer to section 2 (Products) below for additional details of the unique performance properties of **StreetBond SP150E**.
- C. A variety of colors are available. Please refer to www.streetprint.com to view these. Custom colors are available upon request.
- D. Certain colors of **StreetBond SP150E** have an SRI greater than 29 and therefore qualify for the LEED program under Section SS Credit 7.1 Heat Island Effect: Non-Roof.
- E. **StreetBond** coatings are only available from Integrated Paving Concepts, Inc. creators of **StreetPrint**, a registered Trademark product. (Tel. 800-688-5652).
- F. Only **Accredited StreetPrint applicators** are qualified to bid for and perform this work. Please refer to **Section 1.4 DEFINITIONS**.

1.2 RELATED SECTIONS:

- A. Section 02740 Flexible Pavement

1.3 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 or organic film coatings.
- F. ASTM G-154 QUV Accelerated Weathering Environment. Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials.

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

1.4 DEFINITIONS

- A. “**Accredited StreetPrint Applicator**” is a licensed **StreetPrint** applicator who holds a Level 1 or higher certificate of accreditation as offered by Integrated Paving Concepts, Inc. (Tel. 800-688-5652). **StreetPrint** applicators are reviewed on an annual basis and certificates are valid only for the calendar year. All **StreetPrint** applicators have a foreman, supervisor or lead-hand that has successfully completed a StreetPrint Level I or Level II Training Program.
 - **Level 1** accreditation indicates that the **Accredited StreetPrint Applicator** has completed Level 1 training and typically completes a minimum of 20,000 SF of **StreetPrint** per year.
 - **Level 2** accreditation indicates that the **Accredited StreetPrint Applicator** has completed both Level 1 and Level 2 training and typically completes a minimum of 30,000 SF of **StreetPrint** per year.
 - **Level 3** accreditation indicates that the **Accredited StreetPrint Applicator** has completed both Level 1 and Level 2 training and typically completes a minimum of 80,000 SF of **StreetPrint** per year. Level 3 applicators typically employ a crew leader and crew who are committed full time to **StreetPrint** installations.
- B. “**HMA pavement**” is Hot Mix Asphalt pavement.
- C. “**Owner**” means the Owner and refers to the representative person who has decision making authority for the Work.
- D. “**Scuffing**” of HMA pavement is a “tear” of the HMA pavement caused by an external force. Stationary vehicle tires turning on the pavement surface is a typical cause.

1.5 SUBMITTALS TO BE MADE AVAILABLE TO THE OWNER

- A. A copy of the current year Level 1, 2 or 3 accreditation certificate available from the qualified **StreetPrint** Applicator(s).
- B. Confirmation of the name of the certified supervisor who will be performing the on-site work on behalf of the accredited **StreetPrint** Applicator.

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- C. Certificates of Analysis for **StreetBond SP150E** coating.
- D. Confirmation of coating color(s).

PART 2 – PRODUCTS

2.1 MATERIALS – STREETBOND COATINGS

StreetBond SP150E coating has been scientifically formulated to provide the optimal balance of performance properties for a durable, long lasting color and texture to HMA 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 SP150E** is an epoxy modified, acrylic, waterborne coating specifically designed for application on HMA pavements. It has a balance of properties to ensure good adhesion and movement on flexible pavement, while providing good durability. **StreetBond SP150E** may be applied directly to the pavement surface.
- B. **StreetBond Colorant** is a highly concentrated, high quality, UV stable pigment blend designed to be added to **StreetBond SP150E** coating to provide color to the coating. Colors shall be specified on the drawings or specifications. One pint of colorant shall be used with one pail of **StreetBond SP150E**.
- C. **StreetBond Primer** is formulated to enhance the adhesion of **StreetBond** coatings to pre-existing HMA pavement and/or previously coated HMA pavements. The accredited applicator can determine if **StreetBond Primer** is necessary or not for the application. **StreetBond primer** is not required for new HMA pavement and it does not provide film thickness.

2.2 SPECIFICATIONS FOR STREETBOND SP150E:

The following tables outline the physical and performance properties of **StreetBond SP150E** coating. Each of these properties is backed up by Certificates of Analysis produced by an independent qualified testing facility. Integrated Paving Concepts, Inc. (1-800-688-5652) or the Accredited Applicator can provide a copy upon request.

TABLE 1: Typical Physical Properties of StreetBond SP150E

Characteristic	Test Specification	SP150E
Solids by Volume	ASTM D-2697	55%
Solids by Weight	ASTM D-2369	68.9%
Density	ASTM D-1475	13.34 lbs/gal (1.599 kg/l)

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TABLE 2: Typical Performance Properties of StreetBond SP150E

Characteristic	Test Specification	SP150E	
Dry time (To re-coat)	ASTM D-5895 23°C; 37% RH	35 min	
Taber Wear Abrasion Dry H-10/ 1000g	ASTM D-4060 g/1000 cycles 7 days cure	0.98	
Taber Wear Abrasion Wet H-10/ 1000g	ASTM D-4060 g/1000 cycles 7 days cure	3.4	
QUV E Accel. Weathering environment.	ASTM G-154 Delta E 1,500 hours	0.53	
Hydrophobicity Water absorption	ASTM D-570	8.3% (9 days immersion)	
Shore hardness	ASTM D-2240	63 Type D	
Mandrel Bend	ASTM D522-93A	1/4" @ 21° C	
Permeance	ASTM D1653	3.45 g/m ² /hr (52 mils)	
Adhesion to Asphalt	ASTM D-4541	Substrate Failure	
Friction Wet	ASTM E-303 British Pendulum Tester	WP* coated	64
		WP* uncoated	57
		AC** coated	73
		AC** uncoated	60

*WP – test conducted on asphalt in wheel path

**AC – test conducted on asphalt adjacent to curb

2.3 EQUIPMENT

The following equipment is proprietary and is an integral part of the proper application of **StreetBond SP150E**. This equipment is available only from Integrated Paving Concepts Inc. and can only be used by **Accredited StreetPrint applicators** who have been properly trained to use this equipment.

- A. The **Rapid Sprayer II** is a proprietary coating sprayer supplied by Integrated Paving Concepts Inc. and is capable of applying the coating material to the HMA pavement surface in a thin, controlled film which will optimize the drying and curing time of the coating.

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- B.** The **StreetBond Coatings mixer** is a motorized mixing device designed exclusively for use with **StreetBond coatings**.

PART 3 - EXECUTION

3.1 GENERAL

StreetBond SP150E shall be supplied and applied by an **Accredited StreetPrint Applicator** in accordance with the plans and specifications or as directed by the Owner. Do not begin installation without confirmation of Applicator certification.

3.2 PRE-CONDITIONS

HMA pavement must be stable, well compacted and generally in excellent condition for the application of **StreetBond SP150E** to be successful.

The Owner shall make the final determination as to the suitability of the existing HMA pavement.

3.2.1 HMA Pavement Marking Removal

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.

3.2.2 Surface Preparation

The HMA 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 LAYOUT

If the plans call for various pavement coating colors in various patterns, a layout of the pattern shall be as per the drawings and specifications and in accordance to the methods prescribed by the applicator in conjunction with the Owner.

3.4 APPLICATION OF STREETBOND COATINGS

3.4.1 Application Guidelines.

- A.** The **StreetPrint Accredited applicator** shall use the **Rapid Sprayer II** to apply the **StreetBond SP150E**. The color of the coating system shall be as per the specifications.
- B.** The HMA pavement surface shall be completely dry and thoroughly cleaned prior to application of the coatings.

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- C. **StreetBond primer** is not required for new HMA pavement. For pre-existing pavement, the Accredited Applicator can determine and advise if **StreetBond primer** is required prior to the application of the **StreetBond SP150E**.
- D. The first layer of coating shall be spray applied then broomed to work the material into the pavement surface. Subsequent applications shall be sprayed then broomed or rolled. The recommended coating coverage and thickness is as described in Table 3 below. Each application of coating material shall be allowed to dry to the touch before applying the next layer.
- E. The Applicator shall apply **StreetBond SP150E** only when the air temperature is at least 50° F and rising, and will not drop below 50° F within 8 hours of application of the coating material. There should be no precipitation expected within 2 hours after the final layer of **StreetBond SP150E** is dry to touch.
- F. The number of passes or layers of **StreetBond SP150E** is dependent upon the application as outlined below in **TABLE 3**.

TABLE 3: REQUIRED LAYERS OF SP150E

APPLICATION	# of layers of SP150E
Pedestrian only - no vehicles (e.g. sidewalks, plazas)	3
Residential driveway	3
Vehicle traffic (e.g. parking lots, X-walks, level medians)	4

Notes:

1. ^ Stationary vehicle tires turning on the pavement surface is a typical cause of scuffing.
2. A maintenance program may be required for applications exposed to:
 - scuffing;
 - abrasive materials (such as salt and sand);
 - abrasive equipment (such as snow removal equipment).

3.4.2 Coating Coverage and Thickness

Recommended coating coverage and thickness is as outlined in **TABLE 4** below. Actual coverage may be affected by the texture of the HMA pavement substrate. There will be less coverage with the first layer and higher coverage with subsequent layers.

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TABLE 4: COATING COVERAGE AND THICKNESS

SPRAY PASSES	COVERAGE (approx.) SF/pail	THICKNESS (approx.)			
		WET		DRY	
		mm	mil	mm	mil
3	225	0.65	25.7	0.36	14.1
4	175	0.87	34.3	0.48	18.9

3.5 OPENING TO TRAFFIC

Minimally, the **StreetBond SP150E** coating must be 100% dry before traffic is permitted. **TABLE 5** is a guide:

TABLE 5: COATING DRY TIMES (TYPICAL)

Air Temperature	Relative Humidity	Time to dry (approx.)
60°F (15°C)	80%	8 hours
81°F (27°C)	57%	4 hours
120°F (49°C)	5%	2 hours

Substrate temperature, wind and humidity can also affect dry times. Generally, warm and dry conditions decrease the time required for the coatings to dry.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

The measured area is the actual area of HMA pavement that has received the **StreetBond SP150E**, 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



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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.