INTEGRATED PAVING CONCEPTS INC
BIKE LANE COATING SPECIFICATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. **StreetBondCL™** bike lane coating is a highly specialized coating specifically designed for application onto asphalt pavement to demarcate bike lanes.

B. **StreetBondCL™** bike lane coating has been scientifically formulated to provide the optimal balance of performance properties for a durable, long lasting color and texture to asphalt pavement surfaces. Some of these key properties include wear and crack resistance, color retention, adhesion, minimal water absorption and increased friction properties.

C. **StreetBondCL™** bike lane coating performance has been tested and verified by an independent recognized testing laboratory. A Certificate of Analysis confirming these test results is available through either an **Accredited StreetPrint® Applicator** or directly from Integrated Paving Concepts, Inc. (Tel. 800-688-5652). Please refer to the certified performance properties of **StreetBondCL™** bike lane coating outlined in Section 2.2 of this specification.

D. **StreetBondCL™** bike lane coating is only available from Integrated Paving Concepts, Inc.

E. A variety of colors are available including, green, and red. Please refer to www.integratedpaving.com to view these. Custom colors are available upon request including LEED compliant colors.

F. To ensure a quality installation, it is recommended to obtain confirmation of applicator accreditation or qualification from Integrated Paving Concepts Inc before proceeding with this work.

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 or organic film coatings.

F. ASTM G-155 Accelerated Weathering Environment Standard Practice for Operating Xenon Arc Light Apparatus for 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.
K. ASTM D-570 Standard Test Method for water absorption of plastics.

1.3 DEFINITIONS

A. **"Accredited StreetPrint® Applicator"** is a licensed **StreetPrint®** applicator who holds a current year 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.
B. **"Owner"** means the Owner and refers to the representative person who has decision making authority for the Work.
C. **"Textured asphalt Pavement"** is asphalt pavement that has been subjected to imprinting or stamping in a specific pattern.
D. **"Non-textured asphalt pavement"** is asphalt pavement that is unstamped and is sometimes referred to as "flatwork".
E. **The "Work"** is the asphalt pavement texturing work contemplated in this bid submission and specification.
F. **"Scuffing"** is a "tear" of the asphalt pavement caused by an external force. Stationary vehicle tires turning on the pavement surface is a typical cause.

1.4 SUBMITTALS TO BE MADE AVAILABLE TO THE OWNER

A copy of the current year accreditation certificate available from the **Accredited StreetPrint® Applicator** is a required submittal.

PART 2 – PRODUCTS

2.1 MATERIALS – StreetBondCL ™ COATING

Materials used for the coating of the asphalt pavement shall consist of the following:

A. **StreetBondCL ™** bike lane coating is an epoxy-modified, acrylic; waterborne coating specifically designed for application on asphalt pavements and is specially formulated by Integrated Paving Concepts, Inc. (Tel. 800-688-5652) to provide a safe, durable, long lasting color and texture to the asphalt pavement surface.
B. **StreetBondCL** colorant is a highly concentrated, high quality, UV stable pigment blend designed to be added to **StreetBondCL ™** coating to provide color to the coating. One pint of colorant shall be used with one pail of **StreetBondCL ™** coating.

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2.2 PERFORMANCE PROPERTIES OF StreetBondCL ™ COATING

The following table outlines performance properties of **StreetBondCL ™** bike lane coating which are backed up by Certificates of Analysis produced by an independent qualified testing facility. Integrated Paving Concepts, Inc. (1-800-688-5652) or the **Accredited StreetPrint® Applicator** can provide a copy upon request.

TABLE 1: Typical Physical Properties of StreetBondCL ™ Coating.

Characteristic	Test Specification	StreetBondCL ™ Coating
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)**

TABLE 2: Typical Performance Properties of StreetBondCL ™ Coating

Characteristic	Test Specification	StreetBondCL ™ Coating	
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	**0.98 g/1000 cycles**	
Taber Wear Abrasion Wet H-10 wheel	ASTM D-4060 7 days cure	**3.4 g/1000 cycles**	
Accelerated Weathering environment.	ASTM G-155 2,000 hours (CIE Units)	**∆E = 0.49 (brick color)**	
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/m²/hr (52 mils)**	
VOC	EPA-24 ASTM D3960-05	**18.7 g/l**	
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 pavement in wheel path
**AC – test conducted on asphalt pavement adjacent to curb.

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

2.3 EQUIPMENT

The following equipment is proprietary and is an integral part of the proper application of **StreetBondCL ™** bike lane coating**.** This equipment is available only from Integrated Paving Concepts Inc. and can only be used by **Accredited StreetPrint® Applicators** or an applicator designated by Integrated Paving Concepts Inc.

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 asphalt pavement surface in a thin, controlled film which will optimize the drying and curing time of the coating.

B. The **StreetBond Coatings mixer** is a motorized mixing device designed exclusively for use with coatings supplied by Integrated Paving Concepts.

PART 3 – EXECUTION

3.1 GENERAL

StreetBondCL ™ bike lane coating shall be supplied and applied by an **Accredited StreetPrint® Applicator** or an applicator designated by Integrated Paving Concepts in accordance with the plans and specifications or as directed by the Owner. Do not begin installation without confirmation of Applicator qualification.

3.2 PRE-CONDITIONS

3.2.1 Pavement

The asphalt pavement must be stable, well compacted and generally in excellent condition for the application of **StreetBondCL ™** bike lane coating to be successful.

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

3.2.2 Asphalt 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 **StreetBondCL ™** bike lane coating. Work shall not proceed until this approval is granted.

3.3 APPLICATION OF StreetBondCL BIKE LANE™ COATING

3.3.1 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.

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3.3.2 Application of coating

A. The applicator shall apply **StreetBondCL ™** bike lane coating 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 **StreetBondCL ™** bike lane coating is dry to touch.

B. Each application of **StreetBondCL ™** bike lane coating material shall be the same color and shall be allowed to dry completely before applying the next layer.

C. The coating application shall be spray applied using the **Rapid Sprayer II** and broomed to work the material into the asphalt surface. Subsequent applications shall be sprayed and rolled, using a 1" to 1½" nap roller or sprayed and broomed.

D. **Coating coverage**. One pail of **StreetBondCL ™** bike lane coating will cover approximately 700 square feet. Actual coverage may be affected by the texture of the asphalt pavement substrate. There will be less coverage with the first layer and higher coverage with subsequent layers.

E. The number of passes or layers of **StreetBondCL ™** bike lane coating is dependent upon the application. Three layers will generally be sufficient, depending upon the asphalt pavement texture and traffic. For areas that will be subjected to vehicle traffic, an additional layer is recommended.

F. Additional layers of **StreetBondCL ™** bike lane coating may be used to provide additional build thickness in high wear areas such as wheel paths and vehicle turning areas.

3.4. COATING THICKNESS

Approximate coating thickness is as outlined in **TABLE 3** below.

TABLE 3: COATING THICKNESS

	THICKNESS (approx.)			
	WET		DRY	
SPRAY PASSES	mm	mil	mm	mil
3	0.65	25.7	0.36	14.1
4	0.87	34.3	0.48	18.9

3.5 OPENING TO TRAFFIC

Minimally, the **StreetBondCL ™** bike lane coating must be 100% dry before traffic is permitted. **TABLE 4** is a guide:

TABLE 4: 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. Areas exposed to direct sun-light will dry faster. Generally, warm and dry conditions decrease the time required for the coatings to dry.

3.6 EDGE STRIPING

Once **StreetBondCL ™** bike lane coating has dried, a hot, spray applied white strip may be installed along the edge of the bike path if desired.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

The measured area is the actual area of asphalt pavement that has received the **StreetBondCL ™** coating**,** 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.