

COUNTY OF ROCKLAND  
Department of General Services  
**Purchasing Division**

# Contract Award Notification

**Title:** Asphalt Pavement Rejuvenator Service

**Contract Period:** August 16, 2022 through August 15, 2023 w/ 2 1-year options  
Ext thru 8/15/24 w/1 year option

**Original Date of Issue:** August 16, 2022

**Date of Revision:** 05/31/23

**Bid No:** RFB-RC-2022-101

**PRC #:** 2022007346

**Catalog:** Highway Department

**Authorized Users:** County Agencies, All Political Subdivisions

Address Inquiries to:

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**Description**

**This contract is to provide asphalt pavement rejuvenator service.**

Contract #	Vendor Number	Contractor & Address	Telephone No.
BID 22-101	0000021977	Sealcoating, Inc. d/b/a indus 825 Granite Street Braintree, MA 02184 Contact: Sarah Kalemkeridis <a href="mailto:sarah.kalemkeridis@indusinc.com">sarah.kalemkeridis@indusinc.com</a>	781-428-3400  <b>FAX:</b> 781-428-3430

COUNTY OF ROCKLAND  
 DGS – PURCHASING DEPARTMENT  
 BLDG. A, 6TH FLOOR, 50 SANATORIUM ROAD  
 POMONA, NY 10970  
 TELEPHONE NO.: 845-364-3820  
 FAX NO.: 845-364-3809

Vendor Sealcoating Inc dba Indus

LINE NO.	DESCRIPTION	ITEM NUMBER	EST. QTY.	UNIT	UNIT PRICE	EXTENDED PRICE
<b>SECTION ONE</b>						
1	POLYMER MODIFIED REJUVENATING FOG SEAL (Fog Seal)	91384000001	30000	SQ/YD	\$1.47	\$44,100.00
2	Asphalt Price Adjustment, Fog Seal Price Adjustment as per Specifications Section 1 Subsection I	91384000009	500	Dollar	\$1.00	\$500.00
3	Abrading Existing Pavement Marking net per linear foot at 4" wide (0 to 1000 LF)	91384000002	500	LF	\$6.06	\$3,030.00
4	Abrading Existing Pavement Marking net per linear foot at 4" wide (1001 to 10000 LF)	91384000003	2000	LF	\$3.03	\$6,060.00
5	Abrading Existing Pavement Marking net per linear foot at 4" wide (Greater than 10000 LF)	91384000004	11000	LF	\$0.91	\$10,010.00
6	TOTAL SECTION ONE ITEMS 1-4					\$63,700.00
<b>SECTION TWO</b>						
7	Spray Applied Penetrating Asphalt Rejuvenator (Delta Mist)	91384000005	30000	SQ/YD	\$1.99	\$59,700.00
8	Abrading Existing Pavement Marking net per linear foot at 4" wide (0 to 1000 LF)	91384000006	500	LF	\$6.06	\$3,030.00
9	Abrading Existing Pavement Marking net per linear foot at 4" wide (1001 to 10000 LF)	91384000007	2000	LF	\$3.03	\$6,060.00
10	Abrading Existing Pavement Marking net per linear foot at 4" wide (Greater than 10000 LF)	91384000008	11000	LF	\$0.91	\$10,010.00
11	TOTAL SECTION TWO ITEMS 6-9					\$78,800.00
<b>TOTAL BID</b>						<b>\$142,500.00</b>

**COUNTY OF ROCKLAND - DGS-PURCHASING**  
 BLDG. A., 6TH FLOOR, 50 SANATORIUM RD, POMONA, NY 10970  
 TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

**TITLE:**  
**ASPHALT PAVEMENT REJUVENATOR SERVICE**

**BID NUMBER:**  
**RFB-RC-2022-101**

## **SPECIFICATIONS**

### **1. SCOPE**

- 1.1. The County of Rockland wishes to establish an annual contract to furnish Polymer Modified Rejuvenating Fog Seal (Fog Seal) and Spray Applied Penetrating Asphalt Rejuvenator (Delta Mist) services on an as needed basis as detailed in the specifications for various locations throughout the County. Prices quoted per SQ./YD shall include all: labor, supplies, supervision, equipment, and site cleanup. Rockland County will provide the traffic control.

### **2. QUALIFICATIONS OF CONTRACTORS**

- 2.1. The Contractor shall show that he/she has available under his/her direct employment and supervision the necessary organization and facilities to properly fulfill all the services and conditions required under these specifications.
- 2.2. The Contractor shall show that he/she has maintained an organization capable of performing the work specified herein, and that said organization has been in continuous operation for at least the past five (5) years. Contractor shall submit the following information with bid:
- 2.2.1. Present address of the main operating office of his/her organization.
- 2.2.2. Contractor shall have a minimum of five (5) years of experience in the repair and servicing of fueling sites similar in size and scope to the work specified herein.
- 2.2.3. Contractor shall submit with their bid a list of five accounts for which they are presently doing such work. Reference must include contact person and telephone number.
- 2.2.4. Contractor shall have on staff personnel experienced in the service and repair of fueling equipment as required under these specifications. Personnel shall have 3 years of experience

### **3. USE OF PREMISES**

- 3.1. On or about the premises and adjacent areas, the Contractor shall ensure that all apparatus, storage of materials, and activities of workmen be confined to the limits indicated by law, ordinances, permits and the direction of the authorized County of Rockland representative, and shall not encumber or permit the premises or adjacent areas to be encumbered with such materials or apparatus.
- 3.2. The work site shall be kept in an orderly and safe fashion so as not to interfere with the progress of the work or the work of any other Contractor.
- 3.3. The Contractor shall be responsible for repairing and replacing anything damaged by his operations, within thirty (30) days after notification by the authorized County of Rockland representative that damage has occurred.
- 3.4. It will be the responsibility of the Contractor to report, to the authorized County of Rockland representative, any damages found prior to any work at this site.

### **4. CLEANING UP**

- 4.1. The Contractor shall at all times keep the premises and adjacent areas free from accumulations of waste material or rubbish. At the completion of the work, he/she shall remove from and about the premises, including adjacent areas, all rubbish, tools, and surplus materials used for work and shall have the area "Broom Clean" and ready for use. In case of a dispute, County of Rockland may remove rubbish and clean up, then may charge the Contractor either by deduction of amounts unpaid to the Contractor, or by other means as determined to be fair and equitable by the authorized County of Rockland representative.

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## 5. CONTRACT PRICE ADJUSTMENTS

- 5.1. The County recognizes this product or service has a price component that may have a commodity with changing costs. The Contractor/Supplier may request a Price Adjustment no more frequently than once each quarter (3-month period).
- 5.2. A Price Adjustment request must be made in writing and include the reason for the request, documentation supporting the request (i.e., commodity increases), the current pricing, and the requested revised pricing.
- 5.3. The County will review the Price Adjustment request. If the Price Adjustment is deemed reasonable the Price Adjustment request will be accepted by written acknowledgement. If the request is not accepted the County may entirely reject the request or may counter with revised pricing. In either case the County will provide a written explanation in support of the decision.
- 5.4. The Director of Purchasing may use available indexes (e.g., CPI or PPI) to determine if the requested Price Adjustment is reasonable. Typically, a Price Adjustment that exceeds 5% will not be approved unless very unusual and significant changes have occurred in the industry.
- 5.5. In the event industry costs decline, the County shall have the right to receive, from the Contractor, a reasonable reduction in prices/pricing that reflect such cost changes in the industry. The County will make a written request to the Contractor for a Price Adjustment in writing with supporting documentation

## 6. AWARD

- 6.1. This contract will be awarded in two parts to the lowest responsible responsive bidder per section.
  - 6.1.1. SECTION ONE - Polymer Modified Rejuvenating Fog Seal (Fog Seal)
  - 6.1.2. SECTION TWO - Spray Applied Penetrating Asphalt Rejuvenator (Delta Mist)

### SECTION ONE

#### A. DESCRIPTION

This work shall consist of furnishing all materials, equipment, labor and preparation necessary for the application of a topically applied, petroleum-based penetrating asphalt sealer with a rejuvenating agent to existing or newly constructed asphalt pavements for the primary purpose of slowing the oxidation, raveling and other damage caused to unprotected asphalt pavements.

#### B. MATERIALS

- a) **Emulsion:** Rejuvenating asphalt emulsion, **CMS-1PF**, shall contain a polymer and conform to the following specifications. The emulsion shall be certified as meeting this specification from the manufacturer and shall not be diluted prior to application.

Property	Test Procedure (AASHTO)	Specification	
		(min)	(max)
<b>Emulsion Properties</b>			
Viscosity, Saybolt-Furol, @ 77°F, SFS	T59	10	100
Storage, 24 hour, %	T59		1
Oil Distillate, %	T59		0.5
Sieve Test, %	T59		0.1
Residue by Distillation <sup>(1)</sup> @350°F, % Residue by Distillation, % by weight	T59	34	

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Residue Properties From Distillation	T59		
Penetration @ 4C, 200g weight, 60 sec Residue by Distillation, % by weight	T49	34	
Residue Properties From Low Temp Evaporation	PP72-11, Procedure B		
Dynamic Shear, G*/sin @ 64oC, kPa	T315	Report Only	
Polymer Properties			
Swelling in rejuvenating agent, % max weight increase: 48 hrs	ASTM D471 <sup>(2)</sup>	40%	
Tensile Strength (psi)	ASTM D412a <sup>(3)</sup>	800	
Glass Transition Temperature (T <sub>g</sub> ) – Midpoint by DSC (°C)	ASTM D7426 <sup>(4)</sup>	0	
Latex Density at 23°C (g/cm <sup>3</sup> )	ASTM D6937 <sup>(5)</sup>	1.00	1.05
Latex pH	ASTM E70 <sup>(6)</sup>	6.0	8.0
Test on Rejuvenating Agent			
Flash Point, COC, °F	T48	380	
Viscosity, 140°F, CST	201	50	175
Saturate, % by wt	ASTM D2007		34
Asphaltenes	ASTM D2007		1.0
Test on Residue			
Weight Change, %			6.5
Viscosity Ratio			3

<sup>(1)</sup> Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.

<sup>(2)</sup> Polymer Testing, Resistance to Swelling: Using a syringe, place 0.8 gm of latex into a 18 mm diameter DSR mold. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench for 72 hours. Sample should be easily removable from the mold. Take the “button” out of the mold and place the sample into a forced air oven at 40°C (104°F) for 48 hours (on release paper). If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1-2 hours. After 48 hours, cool and weigh the sample to the nearest 0.0001 gram and record the weight. Put ½ inch of Rejuvenating Agent into a 3 oz penetration tin. Place the “button” on the Rejuvenating Agent, and add another ½ inch of Rejuvenating Agent, so that the “button” is covered. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours. Remove the “button” from the Rejuvenating Agent, blot surface of the “button” to remove excess Rejuvenating Agent, cool the “button” to room temperature and weigh it. Calculate weight gain of the “button”, express as a %.

<sup>(3)</sup> To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 7” X 7” X ¼”. Allow to dry at 23°C (73 °F) and 50% RH (controlled conditions) for 7 – 10 days total time, during which time the film should be flipped around once, preferable after 3 or 4 days. The film should be transparent in the end. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil +/- 5 mils. Discard films <20mil. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

<sup>(4)</sup> Use between 3 – 30 mg dry polymer. Instrument used is TA Q2000 Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.

<sup>(5)</sup> Replace “Emulsified Asphalt” with “Latex” in text of test method. The testing temperature used should be 25 +/-

3°C. The calculation in Section 7 should be as follows:

$$D = (W_f - W_t) * 0.1$$

$$S.G. = D/8.337$$

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Where: Wf = Weight of filled cup (g), Wt = Weight of empty cup (g)

⑥ A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

- 1) Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)
- 2) Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.
- 3) Take the Electrode and ATC probes from the sample and rinse thoroughly with deionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

**b) Material Certifications and Testing**

- 1) The emulsion manufacturer, through the Contractor, shall submit to the Owner certified test results that the emulsion meets the specification. The polymer manufacturer and the rejuvenating agent manufacturer, through emulsion supplier and the Contractor, shall submit to the Owner certified test results on the polymer and the rejuvenating agent that meets the required specifications. The Owner will not accept test results dated more than 90 days from the date of bid opening.
- 2) Certifications and test results on the emulsion must be submitted to the Owner and approved by the Owner 5 days prior to supplying material.
- 3) Prior to and during the project the Owner may require samples of the finished emulsion, rejuvenating agent and the polymer used in the emulsion to be submitted to the Owner designated laboratory for testing. All testing shall be at the Owner’s expense.

c) **Aggregate:** The aggregate material shall be a dry, clean, dust and dirt-free, sound, durable, angular shaped manufactured specialty sand, such as that used as an abrasive (i.e., trade name “Black Beauty”), with a Mohs hardness of 6 to 8. The Contractor shall submit manufacturer’s technical data and a manufacturer’s certification indicating that the specialty sand meets the requirements of the specification to the Engineer prior to start of construction. The sand must be approved for use by the Engineer and shall meet the following gradation limits.

Aggregate Material Gradation	Percentage Retained Sieves
No. 8 (2.38 mm)	0
No. 16 (1.19 mm)	0-10
No. 20 (0.84 mm)	0-25
No. 30 (0.60 mm)	15-50
No. 40 (0.42 mm)	20-45
No. 50 (0.30 mm)	5-35
No. 70 (0.21 mm)	0-5
No. 200 (0.07 mm)	0-2

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**C. EQUIPMENT**

**C.1. Pressure distributor:** The emulsion shall be applied with a computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour or seven hundred (700') feet per minute. Before use the equipment must be tested under pressure for leaks to ensure it is in good working order.

The distributor truck shall be equipped with a 12-foot minimum, spreader bar with individual nozzle control. The distributor truck shall be capable of specific application rates in the range of 0.05 to 0.25 gallons per square yard. These rates shall be computer-controlled rather than mechanical. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy.

A distributor truck shall be provided, if necessary, equipped to effectively heat and mix the material to the required temperature prior to application. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Care shall be taken not to overheat or over-mix the material.

The distributor shall be equipped to hand-spray the emulsion in areas identified either on the plans or by the Engineer, or not accessible to the distributor truck itself.

**C.2. Calibration:** Furnish all equipment, materials, and labor as necessary to calibrate the computer-controlled distributor. Perform the calibration with the specified material prior to applying the rejuvenating fog seal on the prepared surface, in accordance with applicable standards and the project specifications.

**C.3. Aggregate spreader:** The asphalt distributor truck shall be equipped with an aggregate spreader mounted to the distributor truck that can apply sand to the emulsion in a single pass operation without driving through the wet emulsion. The aggregate spreader shall be equipped with a variable control system capable of uniformly distributing the sand at the specified rate at varying application widths and speeds. The sander shall have a minimum hopper capacity of at least 3,000 pounds of sand. Push-type hand sanders will be allowed for use around lights, signs and other obstructions.

**D. WEATHER LIMITATIONS**

Place the fog seal when both the pavement and atmospheric temperature is 50°F and rising.  
 Do not place fog seal if any of the following conditions exist:

- a) Impending weather conditions do not allow for proper curing, or if temperatures are forecasted below 32°F within 24 hours from the time of work.
- b) The existing pavement temperature is 140°F or above.
- c) The pavement surface is wet, or rain is forecasted within 24 hours of placement.

**E. SURFACE PREPARATION**

The Contractor shall clean the pavement surface prior to placement with a power broom or road sweeper. Clean any muddy or dirty areas by flushing with water. Allow surface to dry completely prior to applying asphalt emulsion.

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Remove oil or grease that has not penetrated the asphalt pavement by scraping or by scrubbing with a detergent, then wash thoroughly with clean water.

Existing pavement markings will need to be abraded as part of the surface preparation when authorized by the Rockland County.

**F. APPLICATION OF ASPHALT EMULSION & AGGREGATE**

The Contractor shall follow the construction methods as described. Target application rates for the emulsion shall be in the range of 0.06 to 0.15 gallons per square yard as established by the Engineer after spraying a test strip or strips with varying application rates in order to determine the optimum rate to achieve coating without runoff or delayed curing times. Target application rate for the aggregate shall be 0.5 pounds per square yard, also as established by the Engineer after spraying the test strip(s). Apply the asphalt emulsion at the target rate(s) established during the test strip. Maintain the asphalt emulsion temperature from 120° to 160°F during construction, including the start of each day. Reheat the asphalt emulsion at a rate of no more than 25° F per hour whenever the asphalt emulsion is allowed to cool below 110°F. If the target application rates are not the optimum application rates to achieve proper coating of the existing or newly constructed pavement surface, or if the break time is too long or too short, immediately notify the Engineer. Adjust and document the new application rate by stationing. Do not allow the asphalt emulsion to streak on the road surface. If the Engineer determines that streaking is occurring, cease operations until the Engineer is satisfied that streaking has been eliminated. Apply the asphalt emulsion to all exposed areas of asphalt surface as directed by the Engineer.

During the application of the fog seal, ensure there are no deficiencies in the fog seal, resulting from poor workmanship, flushing, tracking from equipment, surface patterns, and sweeping. Inspect workmanship for untreated areas, minimum overlap on longitudinal joints, and minimum overlap on construction joints.

Verify the following for daily acceptance:

- a) Fog seal edges are neat and uniform along the roadway lane, shoulder and curb lines.
- b) Fog seal has no surface patterns such as lean or heavy lines.
- c) Fog seal has no bleeding/flushing areas.
- d) Fog seal uniformly covers all portions of the asphalt surface
- e) Blotter sand is broadcast uniformly and at the proper rate.

**G. TRAFFIC CONTROL**

Unless otherwise specified in the contract documents, Rockland County will provide the traffic control. Daily detail assignments of the traffic control configuration will be coordinated between the Contractor and the Rockland County.

**H. MEASUREMENT AND PAYMENT**

- H.1. Fog Seal - The quantity to be measured for payment will be the area Fog Seal completed measured in square yard
- H.2. Abrading Existing Pavement Marking - This price shall include all costs for pavement marking abrading including all labor, materials, and equipment necessary to abrade the pavement markings with traffic control provided by the Rockland County. Abrading existing pavement markings measurement shall be net per linear foot at 4 inches wide of pavement markings actually abraded by the contractor.
- H.3. No additional compensation shall be made for additional work required to apply Fog Seal to areas outside the normal operating width of the distributor.



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**I. ASPHALT PRICE ADJUSTMENT**

- I.1. Base Average F.O.B.Terminal Price will be based on the average of the F.O.B. terminal price per ton of unmodified PG 64S-22 binder without anti-stripping agent as posted by the New York State Department of Transportation for the month of the bid letting, with the site entitled Fuel, Asphalt and Steel Price Adjustment.
- I.2. New Monthly Average F.O.B. terminal price per ton for unmodified PG 64S-22 binder without anti-stripping agent as posted by the New York State Department of Transportation for the month of the work complete. Normally New Monthly Average F.O.B. terminal price per ton will be posted on the 20<sup>th</sup> of each month.
- I.3. Fog Seal (Gallon) Price Adjustment conversion factor = 0.135 Gal/SY or approved by the Rockland County for the area completed with Fog Seal.
- I.4. The price adjustment of the POLYMER MODIFIED REJUVENATING FOG SEAL applied on this specification will be adjusted based on the following formula rounded to three(3) decimal places:

Price Adjustment (per gallon)	=	$\frac{\text{New Monthly Average FOB Terminal Price} - \text{Base Average Terminal Price}}{235}$	X	Total Allowable Petroleum %
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Total Allowable Petroleum % = 34%

I.5. Asphalt Price Adjustment – Fog Seal : Example

Base Average Terminal Price = \$719/Ton (Bid Letting Month = May 2022)  
 New Monthly Average Terminal Price = \$779/Ton (Work Completed Month = June 2022)  
 Area Completed = 10,000 SY

Price Adjustment (per gallon)	=	$\frac{(779.00 - 719.00)}{235}$	X	0.34
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Price Adjustment (per gallon)	=	+\$0.087 per gallon
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Total Price Adjustment for the Fog Seal work completed = 0.135 \* 1000 \* 0.087  
 = \$11.745

**J. SECTION AWARD**

Award shall be made to the lowest responsive, responsible bidder meeting all the stated requirement of this bid

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## SECTION TWO

### **A. DESCRIPTION**

This work shall consist of furnishing all materials, equipment, labor and preparation necessary for the application of a light coating of a penetrating asphalt rejuvenator to existing or newly constructed asphalt pavements for the primary purpose of slowing the oxidation, raveling and other damage caused to unprotected asphalt pavements.

### **B. MATERIALS**

Plant-based rejuvenating product will be accepted for this bid if it meets the material requirements listed below:

Penetrating plant-based rejuvenators may be emulsified, factory-blended or placed in its original formulation as per manufacturer's recommendations. Petroleum-based asphalt rejuvenating products shall be an emulsion composed of a petroleum resin oil base uniformly emulsified with water. Each bidder must submit with their bid a certified statement from the asphalt rejuvenator manufacturer evidencing that the asphalt rejuvenating agent conforms to the required physical and chemical properties required to achieve the Material Performance and Testing outlined below in Section 2a, Parts 1 and 2 below.

At no time is any dilution or altering of the rejuvenating agent permitted once it leaves the blending facility or manufacturer. Rejuvenating materials shall follow all manufacturer's recommended storage controls with regards to temperature (never frozen or overheated), agitation and exposure to UV light. The manufacturer/contractor shall ensure that the products are free of defect and within the product's useable shelf-life.

#### **a) Material Performance and Testing:**

- 1) The asphalt rejuvenating agent shall be capable of penetrating the asphalt pavement, absorbed into the asphalt, and become incorporated into the asphalt binder such that the viscosity and stiffness (rheological properties) of the asphalt binder is reduced by the amounts listed in Tables 1 and 2 below.
- 2) If the owner so chooses, the effectiveness of the asphalt rejuvenator shall be determined by testing the asphalt binder extracted from the top 3/8" of cores taken from the treated roadway 30-45 days after application of the rejuvenator and comparing those results to the properties of the asphalt binder extracted from the top 3/8" of cores taken from the roadway prior to treatment. Asphalt rejuvenation shall be considered successful when the properties of the recovered asphalt binder satisfy the requirements in Tables 1 and 2 below. The costs associated with coring/sampling, asphalt binder extraction, and asphalt binder testing shall be paid by the Owner.

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Reference Tables 1 and 2 below.

**Table 1. Pavement Three (3) Years or Less in Age**

Item	Property of Recovered Binder <sup>2</sup>	Requirement	Test Method
1	Absolute Viscosity <sub>60°C</sub> , P	≥ 25% Decrease <sup>2</sup>	ASTM D2171
2a	Complex Modulus <sub>60°C</sub> , G*		AASHTO T315
2b	Viscosity <sub>60°C</sub> , η = G* / ω Pa·s		
2c	Phase Angle <sub>60°C</sub> , δ, °	Report	

**Table 2. Pavement More than Three (3) Years in Age**

Item	Property of Recovered Binder <sup>2</sup>	Requirement	Test Method
1	Absolute Viscosity <sub>60°C</sub> , P	≥ 40% Decrease <sup>2</sup>	ASTM D2171
2a	Complex Modulus <sub>60°C</sub> , G*, kPa		AASHTO T315
2b	Viscosity <sub>60°C</sub> , η* = G* / ω Pa·s		
2c	Phase Angle <sub>60°C</sub> , δ, °	Report	

<sup>2</sup>Procedures: Sample collection for application and acceptance as noted in this specification. Sample weights and measure by ASTM D3549; Extraction by: ASTM D2172, Method A using toluene (conditioning to remove moisture will not be accomplished); Recovery by: ASTM D1856 (Abson) or ASTM D5404 (Roto-Vap); and binder extraction, recovery and testing within 48-96 hours of obtaining pavement cores or equivalent surface area samples.

**C. EQUIPMENT**

- a) **Pressure distributor:** The emulsion shall be applied with a computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spreader bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour or seven hundred (700') feet per minute. Before use the equipment must be tested under pressure for leaks to ensure it is in good working order.

The distributor truck shall be equipped with a 12-foot minimum, spreader bar with individual nozzle control. The distributor truck shall be capable of specific application rates in the range of 0.05 to 0.25 gallons per square yard. These rates shall be computer-controlled rather than mechanical. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy.

A distributor truck shall be provided, if necessary, equipped to effectively heat and mix the material to the required temperature prior to application. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Care shall be taken not to overheat or over-mix the material.

The distributor shall be equipped to hand-spray the emulsion in areas identified either on the plans or by the Engineer, or not accessible to the distributor truck itself.

**COUNTY OF ROCKLAND - DGS-PURCHASING**  
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 TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

**TITLE:**  
**ASPHALT PAVEMENT REJUVENATOR SERVICE**

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- b) **Calibration:** Furnish all equipment, materials, and labor as necessary to calibrate the computer-controlled distributor. Perform the calibration with the specified material prior to applying the penetrating rejuvenator on the prepared surface, in accordance with applicable standards and the project specifications.

**D. WEATHER LIMITATIONS**

- a) Place the rejuvenation product when both the pavement and atmospheric temperature is 50°F and rising. Do not place penetrating rejuvenator if any of the following conditions exist:
- i. Impending weather conditions do not allow for proper curing, or if temperatures are forecasted below 32°F within 24 hours from the time of work.
  - ii. The existing pavement temperature is 140°F or above.
  - iii. The pavement surface is wet, or rain is forecasted within 24 hours of placement.

**E. SURFACE PREPARATION**

- a) The Contractor shall clean the pavement surface prior to placement with a power broom or road sweeper. Clean any muddy or dirty areas by flushing with water. Allow surface to dry completely prior to applying penetrating rejuvenator.
- b) Remove oil or grease that has not penetrated the asphalt pavement by scraping or by scrubbing with a detergent, then wash thoroughly with clean water.
- c) Existing pavement markings will need to be abraded as part of the surface preparation when authorized by the Rockland County

**F. APPLICATION OF PENETRATING ASPHALT REJUVENATOR**

- a) The Contractor shall follow the construction methods as described. Target application rates for the penetrating asphalt spray rejuvenator shall be in the range of 0.05 to 0.135 gallons per square yard as established by the Engineer after spraying a test strip or strips with varying application rates in order to determine the optimum rate to achieve coating without runoff or delayed curing times. Generally, the application rate for pavements 2 years old and less will be in the range 0.05 to 0.075 gallons per square yard, the application rate for pavements 3 to 5 years old will be in the range 0.08 to 0.10 gallons per square yard, and the application rate for pavements 6 years old and older will be 0.11 to 0.135 gallons per square yard.
- b) The penetrating asphalt spray rejuvenator shall be applied at an initial rate determined by the manufacturer's recommendation and the Engineer on site. A 200' test strip will be required to ensure that the rate is at a sufficient amount for uniform coverage of the asphalt surface. Continuous monitoring of surface conditions or changes in asphalt mat characteristics requiring adjustment to the application rates to conform to conditions shall be determined by the manufacturer's representative. If the target application rates are not the optimum application rates to achieve proper coating of the existing or newly constructed pavement surface, or if the break time is too long or too short, immediately notify the Engineer. Adjust and document the new application rate by stationing.
- c) Do not allow the asphalt rejuvenating agent to streak on the road surface. If the Engineer determines that streaking is occurring, cease operations until the Engineer is satisfied that streaking has been eliminated.
- d) Apply the penetrating asphalt spray rejuvenator treatment to all exposed areas of asphalt surface as directed by the Engineer.

**G. TRAFFIC CONTROL**

- a) Unless otherwise specified in the contract documents, Rockland County will provide the traffic control. Daily detail assignments of the traffic control configuration will be coordinated between the Contractor and the Rockland County.

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**H. MEASUREMENT AND PAYMENT**

- a) Delta Mist - The quantity to be measured for payment will be the area Penetrating Asphalt Rejuvenator (Delta Mist) completed measured in square yard.
- b) No additional compensation shall be made for additional work required to apply penetrating rejuvenator treatment to areas outside the normal operating width of the distributor.

**I. ASPHALT PRICE ADJUSTMENT**

- a) There will be no price adjustment in Spray Applied Penetrating Asphalt Rejuvenator (Delta Mist) application

**J. SECTION AWARD**

- a) Award shall be made to the lowest responsive, responsible bidder meeting all the stated requirement of this bid

**END SECTION TWO**