

SPECIFICATIONS FOR POLYMER MODIFIED FOG SEAL WITH COVER AGGREGATE

1.0 DEFINITIONS

The term Director [Superintendent, etc.] shall mean the Director of Public Works of the awarding authority.

The term Designee shall mean an employee of the awarding authority, designated by the Director.

The term Contractor shall mean a professional company contracted by the awarding authority to perform work under this agreement.

2.0 DESCRIPTION

Work under this contract shall consist of the Contractor furnishing and applying a polymer modified asphalt emulsion and cover aggregate on properly prepared bituminous streets. Bid quantities are approximate only; payment shall be for actual quantities applied to streets. Streets to be fog sealed shall be selected by the Contractor and the Director or his/her Designee.

3.0 MATERIALS

3.1 Asphalt Emulsion:

The base asphalt emulsion grade shall be CRS-1h conforming to AASHTO M208. The CRS-1h asphalt emulsion shall be modified with the addition of 5% (+/- 0.5%) Acronal NX 4627 acrylic latex or equivalent. It is required that the acrylic latex be co-milled at the bulk emulsion facility, to ensure complete and balanced blending. The modified asphalt emulsion shall be diluted at the emulsion manufacturing facility and certified to meet the criteria in Table 1.

Test requirements for diluted material	Range
Sieve test %	0 – 0.10
Residue by distillation, %	35 - 50
Penetration	40 - 90

3.2 Cover Aggregate:

The cover aggregate shall be clean, dry, durable, and shall meet the physical requirements of Black Beauty® (or equivalent boiler slag) fine or extra-fine gradation.

3.3 Material Quantities

The quantity of asphalt emulsion to be used shall be in the range of 0.08 to 0.12 gallons per square yard. Cover aggregate shall be spread in the range of 0.3 to 1.0 pounds per square yard. Variations in material quantities will be made without adjustment to contract unit price. The Contractor must maintain a laboratory open to the inspection of the awarding agency.

4.0 EQUIPMENT

The equipment used by the Contractor shall include, but not be limited to, one or more of the following:

4.1 Asphalt Distributor:

The asphalt distributor shall contain suitable mechanical circulating and heating mechanisms to provide a uniform approved temperature of the entire mass of material. The distributor shall be equipped with a radar type sensor used to measure ground speed, and feed a Digital Volumetric Accumulator capable of measuring liters applied and distance traveled. It shall be capable of applying asphalt material in accurately measured quantities at any rate between 0.1 to 2.0 gallons per square yard, of roadway surface, at any length of spray bar up to 16 feet. The distributor shall be capable of maintaining a uniform rate of distribution of asphalt material regardless of change in grade, width or direction of the road. It shall be equipped with an electronic control for setting asphalt pump discharge rate and on/off switching of spray for nozzles in one (1) foot, increments which shall be located in the truck cab. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of asphalt material throughout the entire length of the spray bar at all times while operating. The spray shall completely cover the roadway surface receiving the treatment.

4.2 Aggregate Spreader:

The aggregate spreader shall be mounted on the asphalt distributor. It shall have a minimum capacity of 3000lbs. The hopper shall have vibratory agitation to facilitate material flow. The cover aggregate spinners shall be variable speed, capable of distributing cover aggregate consistently over variable roadway widths in a single pass. All controls shall be cab-mounted and capable of being operated during the application of the asphalt emulsion by the distributor operator.

5.0 CONSTRUCTION PROCEDURES

5.1 Streets to be Treated:

The Contractor and the Director shall mutually determine the streets which shall receive fog seal treatment. Measurements of streets to be treated shall be made by the Contractor and the Director or his/her Designee, and the Contractor shall prepare a cost estimate for each street prior to beginning work.

5.2 Staging Location

The awarding authority shall provide a staging area for equipment and materials to be used on the project. The Contractor and Director shall mutually review and agree that the location is of adequate size and condition to allow for safe and secure usage for the required operation(s).

The awarding authority shall provide a location for disposal of asphalt/aggregate debris created in the adjustment of utility castings/structures, milling of keyways, and any pre- or post- project sweeping.

5.3 Surface Preparation:

All surface preparations shall be completed by the awarding authority prior to applying the surface treatment unless otherwise noted or bid as separate items.

The awarding authority shall be responsible for removal of all thermoplastic traffic markings, cleaning and flush filling all cracks and joints greater than 1/4" wide. The awarding authority shall place a leveling course on planed, milled or existing surface, if required.

The contractor shall cover all manhole covers, water boxes, gas boxes, catch basins and other such utility structures with plastic or building felt. Reference each for location and uncovering after application.

The contractor shall thoroughly clean the surface by sweeping immediately prior to application of the emulsion. Prior to sweeping, the awarding authority shall have removed all vegetation and soil that is bound to the roadway surface.

5.4 Weather Limitations:

No work shall be completed in wet conditions, or when wet weather conditions are forecasted within a 4 hour period after application. The ambient temperature must be 50°F and rising.

5.5 Aggregate Storage:

The awarding authority shall be responsible for providing the Contractor with an acceptable aggregate storage area near the job site.

5.6 Asphalt and Aggregate Application:

The asphalt emulsion and cover aggregate shall be applied simultaneously at the material quantities as designated in Section 3.3. The asphalt emulsion shall be applied at 120 - 170°F.

Application shall not commence when water or moisture is present on the pavement surface.

5.7 Traffic Control:

Traffic control is the sole responsibility of the awarding authority. Unless otherwise specified, the roadway shall be kept open to one-way traffic at all times, with traffic discontinued on the lane being fog sealed. The total lane closure allowed for placement of the treatment shall be a maximum of **1.0 mile**. All traffic shall be kept off of the treated areas until curing is complete. The fog seal will be considered cured when the emulsion does not track off the treated surface. All requirements for signage, safety cones, and other traffic control requirements shall be in place prior to commencement of the work.

If traffic control is the responsibility of the contractor, a separate pay item shall be included.

6.0 PERFORMANCE

The awarding authority will not award this contract unless the Contractor furnished satisfactory evidence of his/her ability and experience to perform this work, and that he/she has sufficient capital and equipment to enable him/her to prosecute the work successfully and to complete it within the time named in the contract. The Contractor shall not sublet any portion of this contract, and will own all equipment used to complete such contract. As part of the bid, the

Contractor must submit a list of six similar and successfully completed jobs on which they have been the prime contractor, whose relevance to the proposed job shall be deemed by the awarding authority. The name, address, and telephone number of a contact person involved with each of these projects must be included so they can be investigated prior to the award of the contract. It will be the responsibility of each bidder to visit the job site with the Director. The awarding authority can reject any bid of a contractor who has not visited the work site.

7.0 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for work under this agreement shall be made at the contract unit price per square yard times the number of square yards, measured by the Contractor and the Director or his/her designee, of road surface treated. Price per square yard shall be for complete in place quantities. Upon completion of work, and acceptance by the Director, the Contractor shall submit a payment request to the Director. Payment shall be net thirty (30) days.

8.0 GUARANTEE

Any material or workmanship found to be defective for up to one (1) year from the date of acceptance by the Director shall be replaced by the Contractor at no cost to the awarding authority. Upon notification of defective material or workmanship, the Contractor shall immediately replace such defective areas.

BID FORM

BASE BID: FOG SEAL applied to town prepared roadways in accordance with the attached specifications.

Estimated Quantity _____ x Price per Square Yard \$ _____ = _____

OPTIONAL: TRAFFIC CONTROL provided by the contractor.

Estimated Quantity _____ x Price per Square Yard \$ _____ = _____

Bidder: _____ Phone: _____

Address: _____ Fax: _____

Signature: _____

Printed Name & Title: _____

Date: _____

REFERENCE LIST FOR FOG SEAL

Please list six similar projects that have been completed as the Prime Contractor:

Owner:	Owner:
Address:	Address:
City, State, Zip:	City, State, Zip:
Contact:	Contact:
Phone:	Phone:
Contract Amount:	Contract Amount:

Owner:	Owner:
Address:	Address:
City, State, Zip:	City, State, Zip:
Contact:	Contact:
Phone:	Phone:
Contract Amount:	Contract Amount:

Owner:	Owner:
Address:	Address:
City, State, Zip:	City, State, Zip:
Contact:	Contact:
Phone:	Phone:
Contract Amount:	Contract Amount: