

## SECTION 32 12 36

### SEAL COATS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes
  - 1. Requirements for seal coating of existing pavements
- B. Related Sections
  - 1. Section 01 50 00 – Temporary Facilities and Control
  - 2. Section 32 01 17 – Seal Coats
  - 3. Section 32 17 23 – Pavement Markings

##### 1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
  - 1. Payment will be by the square yard for street surfaces sealed. Measurement will be from the edge of the concrete gutter to the edge of concrete gutter, times the centerline length. Temporary pavement markings are incidental to the seal coat. Bid prices shall include all labor, materials, equipment, traffic control, temporary striping and sweeping to complete project described within these specifications.
- B. The furnishing and installing of specific items and/or the performance of work under certain circumstances shall not be individually paid. The costs shall be included in the unit price bid for the associated bituminous seal coat items. Such items of work include but are not limited to:
  - 1. Provide adequate barricades and personnel to control vehicular and pedestrian traffic
  - 2. Locating and notifying vehicle owners to move their vehicles so the streets can be sealed.
  - 3. Protecting existing improvements from damage.
  - 4. Protecting of manhole castings and gate valve covers from being seal coated with bituminous material.
  - 5. Sweeping and removing all objectionable foreign material, including weed growth, prior to applying the seal coat material
  - 6. Cleaning of gutters or other areas as necessary if the seal coat oil and rock get washed by rain into them prior to setup of the oil and rock. Re-sealing of areas that are washed is also required.
  - 7. Equipment and labor necessary to provide for a neat clean, and orderly stockpile of aggregate if a temporary stockpile is to be used.
  - 8. Maintaining seal coated roadways, including the removal of "wash boards" and leveling aggregate to provide a uniform surface thickness, and avoid bleeding up until the time of sweeping up the excess rock.
  - 9. The cost of all labor, equipment and materials necessary for meeting the testing requirements of Source Quality Control, if required, include in price bid for Bituminous Seal Coat.
  - 10. Cleanup of temporary aggregate stockpile location(s) following completion of the project.
  - 11. Placing and removing "No Parking" signs, as specified.
  - 12. Mobilization of equipment and personnel to and from the job site.

##### 1.03 REFERENCES

- A. Minnesota Department of Transportation "Standard Specifications for Construction" 2020 Edition (MnDOT Spec.).
  - 1. 2356 –
- B. MNMUTCD Temporary Traffic Control Manual

#### 1.04 WEATHER LIMITATIONS

- A. Seal coating operation (including traffic restrictions on the freshly constructed seal coat) will be conducted:
  - 1. Not before June 1 nor after August 31,
  - 2. Only during daylight hours,
  - 3. When the air and pavement temperature is 60 degrees F and rising,
  - 4. When the relative humidity is less than 75 percent, and
  - 5. When the road surface is dry and clean.
- B. In addition, seal coating operations will not be conducted in foggy or rainy weather.
  - 1. Seal coating operations will not be allowed to start and will be suspended if any of the above conditions cannot be met.

#### 1.05 ITEMS PRIOR TO WORK

- A. Sweeping
  - 1. Sweeping of all streets to be sealed shall be completed by the Contractor immediately before they are sealed.
    - a. Streets that are swept and not sealed the same day, regardless of reason, shall be re-swept whenever work resumes.
  - 2. Upon completion of seal coat and aggregate placement, streets will be re-swept by the Contractor. Sealed street must set for a minimum of twenty-four (24) hours from the time the final rolling is completed to when excess material can be swept up. After all materials have been placed on the designated streets and final rolling completed, final sweeping must occur within seventy-two (72) hours.
  - 3. Sweepers used on project shall be capable of sweeping, picking up and dumping of materials.
  - 4. All sweeping operations including sweeping, trucking and traffic control will be considered incidental to the contract.
  - 5. Excess material swept up prior to construction becomes the property of the contractor. Aggregates picked up by sweeping operation after seal coating becomes the property of the contractor.

## **PART 2 PRODUCTS**

#### 2.01 MATERIALS

- A. Minnesota Department of Transportation Standard specifications dated 2020 shall govern the work under this contract with modifications as specified herein.
  - 1. Bituminous Material:
    - a. Bituminous material for seal coat shall be CRS-2, applied at the rate of 0.24 plus or minus 0.01 gallon per square yard.
    - b. "0.24" refers to asphalt content of the material including wetting agent. The wetting agent shall not be more than 30% of the total mixture.
  - 2. Aggregate:
    - a. Aggregate for seal coat shall be FA-2.

- b. Aggregate at the time of application shall not contain more than four (4) percent free moisture.
- c. Cover aggregate shall be applied at the rate of one (1) pound per each 0.01 of a gallon of bituminous material spread.

B. Materials not described here shall be in accordance with the City's Standard Specifications

## 2.02 EQUIPEMENT

### A. Distributor

- 1. The Distributor shall meet requirements described in MnDOT Specification 2321.3C1.

### B. Aggregate Spreader

- 1. Aggregate will be spread with approved mechanical-type aggregate spreader that is capable of distributing the aggregate uniformly to required width and at the designated ratio, with the application being sharply defined at the edges.
- 2. The typical aggregate application rate is low, the calibration of the spreaders used is very important.
- 3. The Contractor will be required to conduct the testing procedure outline in Appendix A of these specifications for every spreader used on this project.
- 4. The test must be witnessed by City inspectors. Spreaders not capable of uniformly spreading the FA-2 aggregate at the design rate shall not be used.

### C. Pneumatic-Tire Roller

- 1. A sufficient number of self-propelled pneumatic-tire roller will be used for rolling aggregates after spreading such that the entire width of the treatment area is covered in one pass of the rollers.
  - a. Typically this will require a minimum of three (3) rollers.
- 2. Each roller will have a total compacting width of not less than sixty (60) inches and will have a minimum ground contact pressure of eighty (80) pounds per square inch.

### D. Brooms

- 1. Brooms shall be self-propelled with means of controlling down pressure on the broom, capable of cleaning the road surface prior to spraying bituminous material, and removing loose particles after the seal coating operation is completed.

## PART 3 EXECUTION

### 3.01 TRAFFIC CONTROL

#### A. Traffic Control Devices

- 1. The Contractor will install, maintain, and remove all traffic control devices.
- 2. Traffic control devices shall include all channelizing devices, advanced warning signs and flaggers necessary to keep the work area safe for the public as well as Contractor's employees.
- 3. Traffic control devices should be of such nature that they could be moved easily with the construction process.

#### B. Post Sealing Traffic Control

- 1. Upon completion of seal coating streets shall be posted with loose aggregate signs at the beginning and the end of the project area.
- 2. Loose aggregate signs may also be required at various intermediate locations along the longer stretches of the project.

3. Final placement of loose aggregate signs will be determined in the field by the Street Division Manager.
  4. Loose aggregate signs shall be picked up by the Contractor immediately after sweeping is completed.
- C. An agreement on the traffic control configuration shall be reached between the City Streets and Parks Supervisor and Contractor, prior to any construction work beginning.
- D. Work may be suspended if at any point, the Streets and Parks Manager determines that additional traffic control is necessary.

### 3.02 CONSTRUCTION REQUIREMENTS

#### A. ROAD SURFACE PREPARATION

1. The entire roadway surface to be sealed will be cleaned by the Contractor.
2. The Contractor will sweep the pavement with a motorized broom to remove all loose materials.
3. The Contractor using hand brooms will clean all depressions not reached by the power broom.
4. Seal coating will not be allowed to proceed until road surface to be treated are approved by the Street Manager.
5. All gate valves and manholes shall be covered to prevent bituminous materials from being applied to them.
6. Suitable coverings would be roofing felt, sand, or cut-to-fit plywood disks.
7. The Contractor shall remove all covering material within two (2) hours after seal coating is completed.

#### B. APPLICATION OF BITUMINOUS SEALANTS

1. The Engineer will make final approval on all streets prior to sealants being applied.
2. Bituminous sealants shall be applied on surfaces that are dry and clean.
3. Bituminous sealants shall be applied at a rate listed in the application rate table in applied at the rate of 0.24 gallons plus or minus 0.01 gallon per square yard
  - a. "0.24 gallons" refers to asphalt content of the material including wetting agent. The wetting agent shall not be more than 30% of the total mixture.
4. The Contractor shall take special care not to have excessive sealant overspray on the concrete gutters.
  - a. Excessive overspray of sealant would be considered a band on the curb exceeding 2" wide.
5. The Contractor shall protect all manhole covers, valve box covers and catch basin castings by covering them with building paper or other suitable methods to prevent such items from being sprayed with bituminous material.
  - a. Placing aggregate directly on these structures without a barrier is not acceptable.

#### C. APPLICATION OF COVER AGGREGATE

1. Aggregates shall be distributed over the entire treated pavement surface at a rate listed in the application rate table of one (1) pound per each 0.01 gallon of bituminous material spread.
  - a. Aggregates shall be spread within 1-minute after bituminous sealer has been applied.
  - b. The speed of spreader shall be set so stones do not roll over when hitting treated pavement.
2. All aggregates will be moistened prior to placement to provide aggregate that are uniformly damp at time of placement on the roadway.
3. The aggregate will be spread in one operation, in such a manner that an 18" strip of emulsified asphalt is left exposed along the longitudinal center to form a lap for succeeding applications of emulsion.
4. Any bare spots in the spread of aggregates will be corrected immediately by hand spreading or other methods.

5. Special care should be taken so that there are not any bumps or overlaps in the roadway caused from the seal coating operation.
6. The Contractor shall also take the necessary precautions to prevent the seal coat aggregate from entering any manholes, catch basins or water valve boxes.
  - a. Any aggregate spill and/or tracking shall be cleaned by the Contractor from the surface prior to the application of the bituminous seal coat material.
7. The aggregate spreader shall be a self-propelled type mounted on pneumatic tired wheels located to operate on the freshly applied aggregate.
8. Truck mounted spreaders are not acceptable.

D. ROLLING OPERATIONS

1. A maximum of 3 (three) minutes will be allowed between application of aggregates and completion of the initial rolling of the aggregates.
2. Rollers will move in a longitudinal direction not exceeding 5 (five) miles per hour.
3. Extra rollers may be required if it is anticipated or demonstrated that the aggregates are not being embedded in the aggregate before the sealant breaks.

E. FINAL SWEEPING

1. The Contractor shall sweep up the excess aggregate starting five (5) calendar days, but not more than ten (10) calendar days, after completion of the first day's seal coat application.
2. Sweeping shall be with a pick-up power sweeper and shall continue until all loose aggregate is completely cleaned up to the satisfaction of the City Engineer.
3. The excess aggregate shall be disposed of at a site designated within the City by the City Engineer.

F. MANHOLE AND VALVE COVER PROTECTION

1. It shall be the Contractor's responsibility to cover all manholes and valves with a protective material or device to keep the bituminous material from sealing the covers to the frame during the seal coat process.

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