

**Subsection 4.15
Seal Coat**

I. SCOPE: This item includes a wearing surface composed of one or more applications of asphalt, covered with a layer of aggregate constructed on a prepared base course or existing surface.

II. MATERIAL

A. Asphalt: Asphalt shall conform to requirements as specified in Subsection 4.23 "Asphalts, Oils, & Emulsions."

B. Aggregate: Furnish aggregate for seal coats in conformance to the type, grade, and Surface Aggregate Classification (SAC) shown on the plans.

The materials will be uncontaminated and of uniform quality throughout that meets the requirements shown on the plans and specifications. Notify the ODR of all proposed material sources and of changes to material sources.

Furnish aggregate of the type shown on the plans and listed in Table 1.

**Table 1
Aggregate Types**

| Type | Material |
|-------------|---|
| B | Crushed gravel or crushed stone |
| E | Aggregates shown on the plans |
| L | Lightweight aggregate |
| PB | Precoated crushed gravel or crushed stone |
| PE | Precoated aggregates shown on the plans |
| PL | Precoated lightweight aggregate |

Ensure the aggregate gradation meets the requirements in Table 2 for the specified grade shown.

Furnish aggregates that meet the requirements shown in Table 3, unless otherwise shown on the plans. Provide aggregates from sources listed in TxDOT's Bituminous Rated Source Quality Catalog (BRSQC). Aggregates not listed in the BRSQC will have to have testing submitted to the ODR for approval.

Aggregates used on the final surface will have to meet the SAC shown on the plans. This will only apply to aggregate placed on travel lanes. SAC list can be found in the BRSQC and Aggregate Quality Monitoring Program (AQMP).

C. Precoating: Precoat aggregate uniformly and adequately with asphalt material to the satisfaction of the ODR. Meet Table 2

and Table 3 requirements before precoating. Furnish precoated aggregate that spreads uniformly using approved mechanical spreading equipment. Asphalt shall conform to the requirements of Subsection 4.21 "Asphalts, Oils, & Emulsion."

The ODR retains the right to select a target value for the desired percent by weight of residual asphalt coating on the aggregate. Furnish precoated aggregate that is within $\pm 0.3\%$ of the target value when tested in accordance with Tex-236-F. The ODR may require trial batches to assist in selecting the target value.

The ODR retains the right to remove precoat material from aggregate samples in accordance with Tex-236-F and test aggregate to verify compliance with Table 2 and Table 3 requirements.

Table 2
Aggregate Gradation Requirements (Cumulative % Retained)

| Sieve Size | Grade | | | | | |
|------------|--------|--------|-----------------|-------------|--------|--------|
| | 1 | 2 | 3 | | 4 | 5 |
| | | | Non-Lightweight | Lightweight | | |
| 1" | - | - | - | - | - | - |
| 7/8" | 0-2 | 0 | - | - | - | - |
| 3/4" | 20-35 | 0-2 | 0 | 0 | - | - |
| 5/8" | 85-100 | 20-40 | 0-5 | 0-2 | 0 | - |
| 1/2" | - | 80-100 | 20-40 | 10-25 | 0-5 | 0 |
| 3/8" | 95-100 | 95-100 | 80-100 | 60-80 | 20-40 | 0-5 |
| 1/4" | - | - | 95-100 | 95-100 | - | - |
| #4 | - | - | - | - | 95-100 | 50-80 |
| #8 | 99-100 | 99-100 | 99-100 | 98-100 | 98-100 | 98-100 |

Table 3
Aggregate Requirements

| Property | Test Method | Requirement | Remarks |
|--|--------------------|-----------------------|--|
| Sampling | Tex-221-F | - | |
| SAC | AQMP | As shown on the plans | |
| Deleterious Material, %, Max | Tex-217-F, Part I | 2.0 | Not required for lightweight aggregate |
| Decantation, %, Max | Tex-406-A | 1.5 | |
| Flakiness Index, Max | Tex-224-F | 17 | |
| Gradation | Tex-@200-F, Part I | See Table 2 | |
| L.A. Abrasion, %, Max | Tex-410-A | 35 | |
| Magnesium Sulfate Soundness, 5 Cycle, %, Max | Tex-411-A | 25 | |
| Coarse Aggregate Angularity, 2 Crushed Faces, %, Min | Tex-460-A, Part I | 85 | Only required on crushed gravel |
| Additional requirements for Lightweight Aggregate | | | |
| Dry Loose Unit Wt., lb./cf | Tex-404-A | 35-60 | |
| Pressure Slaking, %, Max | Tex-431-A | 6.0 | |
| Freeze-Thaw Loss, %, Max | Tex-432-A | 10.0 | |
| Water Absorption, 24 hr., %, Max | Tex-433-A | 12.0 | |

III. Equipment

- A. Distributor:** Furnish a distributor that conforms to the requirements in Subsection 4.25 "Equipment for Asphalt Concrete Pavement."
- B. Aggregate Distributor:** Use a continuous-feed, self-propelled spreader to apply aggregate uniformly at the specified rate.
- C. Rollers:** Provide rollers in accordance with Subsection 4.27 "Rolling."
- D. Broom:** Furnish rotary, self-propelled broom.
- E. Aggregate Haul Trucks:** Use trucks with a uniform capacity to deliver aggregate. Provide ODR with documentation showing measurements and calculation in Cubic yards.

IV. Construction Methods

A. Asphalt Application

Seal coat season is defined in Subsection 4.23 "Asphalts Oils and Emulsion", unless approved by ODR.

No application shall be placed when the air temperature is below 60°F, unless cool weather asphalt is used. The temperature shall be taken in the shade and away from

artificial heat. No asphalt shall be placed when general weather conditions are not suitable. Application of asphalt will cease when temperature is 50°F and falling.

Select an application temperature, as approved, in accordance with Subsection 4.23 "Asphalt, Oils, & Emulsions. Uniformly apply the asphalt material at the rate directed, within 15°F of the approved temperature, and not above the maximum allowable temperature.

Asphalt for the each course shall be applied uniformly on the clean surface free of dirt, dust, vegetation, debris, or other harmful material. The Contractor shall provide placed paper joints or approved material at the beginning and end of each shot. The asphalt shot width shall be covered with aggregate by one pass of an approved spreader of the type shown on the plans.

Stop application if it is not uniform due to streaking, ridging, puddling, or flowing off the roadway surface. Determine and correct the cause of nonuniform application. The ODR may require a test strip to determine if uses are corrected. If shot varies by more than 0.05 gallon per square yard a test strip may be required to show that causes have been corrected. Test strip shall not be applied on the roadway. Test strip will not be paid for.

B. Aggregate Placement: As soon as possible, apply aggregate uniformly at the rate directed without causing the rock to roll over.

C. Rolling: Start rolling operation on each shot as soon as aggregate is applied. Use sufficient rollers to cover the entire mat in one pass. Roll in staggered pattern. Unless otherwise directed, make a minimum of 5 passes, unless emulsion is used, make 3 passes. The course shall be rolled, if a second application of asphalt is shown in the plans, it shall be made in the manner specified for the first application. Rolling shall continue as necessary to imbed the aggregate.

D. Patching and Sweeping: Before opening to traffic, patch area where coverage is not complete. Once aggregate has sufficiently bonded sweep to remove excess rock before opening to traffic.

The asphalt and aggregate shall be applied at the approximate rates indicated on Table 4.

Table 4
Application Rates

| Application | Gallons of Asphalt per Square Yard | | Aggregate Cubic Yards to Square Yards | |
|-------------|------------------------------------|------|---------------------------------------|-------|
| | Min | Max | Min | Max |
| First | 0.25 | 0.30 | 1:110 | 1:90 |
| Second | 0.35 | 0.40 | 1:150 | 1:125 |

The Contractor shall maintain the surface until accepted by the Engineer.

E. Aggregate Furnished by the City: When shown on the plans, the City will furnish aggregate to the Contractor without cost. Stockpile locations will be shown on the plans.

F. Rock Land and Shot:

1. Definitions

a) A "rock land" is the area covered at the aggregate rate directed with 1 truckload of aggregate.

b) A "shot" is the area covered by 1 distributor load of asphalt material.

2. Setting Lengths: Calculate the lengths of both rock land and asphalt shot. Adjust shot length to be an even multiple of the rock land. Verify the distributor has enough asphalt material to complete the entire shot length. Mark shot length before applying asphalt. Contractor shall provide distributor straps and load tickets for rock.

V. Measurement

A. Asphalt shall be measured in gallons at the applied temperature.

B. Aggregate shall be measured by the cubic yard in vehicles at the point of delivery on the site.

C. The measurement for payment may be by the square yard of the surface on which the bituminous surface treatment is actually applied.

VI. Payment

The work performed and materials furnished as prescribed by this item and measured as provided under "Measurement" shall be paid for at the unit price bid for " Seal Coat", which price shall be full compensation for cleaning existing surface; for furnishing, freight involved, preparing, hauling, and placing materials and all incidentals necessary to complete the work.

LAST PAGE OF THIS SUBSECTION