

2356 BITUMINOUS SEAL COAT

2356.1 DESCRIPTION

This work consists of applying bituminous material, a single layer of aggregate, and a fog seal on a prepared surface.

2356.2 MATERIALS

A Bituminous Material

Provide CRS-2P bituminous material for seal coat meeting the requirements of 3151, "Bituminous Material":

Provide diluted CSS-1h bituminous material for fog seal meeting the requirements of 3151, "Bituminous Material".

B Seal Coat Aggregate

Provide aggregate meeting the gradation, job mix formula tolerance and quality requirements of Tables 3127-1 and 3127-2, for the gradation specified in the Contract. If no requirements are specified in the Contract, provide aggregate meeting the requirements of Tables 3127-1 and 3127-2 for FA-3.

C Blank

D Water

Use potable water compatible with the seal coat and meeting the requirements of 3906, "Water for Concrete and Mortar".

E Seal Coat Design

Use the Minnesota Seal Coat Handbook, MN/RC-2006-34 available on the MnDOT website, to design the seal coat and determine the starting application rate for the bituminous material and seal coat aggregate. Base the mix design on the traffic volume and pavement conditions.

Provide the following to the Engineer at least 2 weeks before beginning construction:

- (1) Gradation and quality test results as specified in 3127.3,
- (2) Seal coat aggregate design application rate,
- (3) Bituminous material design application rate and
- (4) 150 lb [70 kg] sample of aggregate from each proposed aggregate source.

The Department may postpone the start of work until receipt of the design and approval by the Engineer in accordance with the requirements of this section.

The Department considers the seal coat's design aggregate application rate as a target amount.

2356.3 CONSTRUCTION REQUIREMENTS

A Weather, Time and Date Limitations

Apply the bituminous seal coat in accordance with the following:

- (1) From May 15 to August 10, if located in the North or North-Central Road Spring Restriction Zone (Zones are defined on the MnDOT Pavement Design Website),
- (2) From May 15 to August 31, if located south of the North and North-Central Spring Road Restriction Zone,
- (3) Work only during daylight hours,
- (4) Begin work when the pavement and air temperatures are 60° F [15.5° C] and rising.
- (5) The road surface may be damp, but ensure that the road is free of standing water and
- (6) Do not perform work during foggy weather.

B Equipment

B.1 Distributor

Use a distributor in accordance with 2360.3.B.2.d, "Distributor."

B.2 Aggregate Spreader

Use a self-propelled mechanical type aggregate spreader, mounted on pneumatic-tired wheels, capable of distributing the aggregate uniformly to the width required by the contract and at the design application rate.

B.3 Pneumatic-Tired Rollers

Provide at least three self-propelled pneumatic-tired rollers in accordance with 2360.3.B.2.e(2), "Pneumatic Tired Rollers."

B.4 Brooms

Provide motorized brooms with the following characteristics:

- (1) Positive means of controlling vertical pressure,
- (2) Capable of cleaning the road surface before applying bituminous material and
- (3) Capable of removing loose aggregate after seal coating.

C Road Surface Preparation

Clean pavements, including depressions, before seal coating.

Cover iron fixtures in or near the pavement to prevent adherence of the bituminous material.

Remove the protective coverings before opening the road to traffic.

D Application of Bituminous Material

Begin the rate of application for the bituminous material as determined by the mix design. Construct a test strip 200 ft [60 m] long to ensure the bituminous material application rate is adequate given the field conditions. After applying the bituminous material to this test strip, place the seal coat aggregate at the design application rate. Inspect the aggregate in the wheel paths for proper embedment. Make adjustments to the rate of application, if necessary. Construct one full lane width at a time. Make additional adjustments to the rate of application, if necessary.

Apply the bituminous material in accordance with Table 2356-2:

Table 2356-2	
Recommended Application Temperatures	
Bituminous Material	Minimum Temperature
CRS-2P	140 F [60 C]*
CSS-1h	100 F [38 C]
* Intended for uniform lay down of emulsion	

E Application of Seal Coat

Before construction, calibrate the aggregate spreader to meet the requirements of ASTM D 5624, in the presence of the Engineer. Maintain the aggregate application rate within ±1 lb per square yard [±0.5 kg/m²] of the design.

Provide uniformly moistened aggregates at the time of placement. Place aggregate within 1 min after applying the bituminous material. Do not use previously applied aggregates.

F Rolling Operations

Complete the initial rolling within 2 min after applying the aggregate at a speed no greater than 5 mph [8 km/h] to prevent turning over aggregate. Make at least three complete passes over the aggregate. Roll the aggregate so the entire width of the treatment area is covered in one pass by all the rollers.

