



Wisconsin Department of Transportation

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Division of Transportation Systems Development

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NOTICE TO ALL CONTRACTORS:

Proposal #13: 1185-02-61, WISC 2016 348
Ashland - Hurley
Ashland County Line to CTH B
USH 2
Iron County

Letting of November 8, 2016

This is Addendum No. 02, which provides for the following:

Special Provisions

Revised Special Provisions	
Article No.	Description
13	Prepare Existing Pavement for Seal Coat Special, Item SPV.0125.01

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 02

1185-02-61

October 31, 2016

12. Prepare Existing Pavement for Seal Coat Special, Item SPV.0125.01.

A Description

This special provision describes the work necessary to prepare the existing pavement surface prior to application of the seal coat. Work includes rout and seal, re-seal, and clean and seal random traverse, centerline, and longitudinal cracks in asphalt pavement as well as adequately preparing the existing pavement marking for adhesion of the Seal Coat Special.

A1. Rout and Seal

Transverse and centerline cracks between $\frac{1}{4}$ " - $\frac{3}{4}$ " wide shall be routed, cleaned, and sealed.

A2. Re-Seal

Previously sealed cracks exhibiting signs of failure such as missing or loss of existing sealant material, cracking of the existing sealant, loss of adhesion to existing pavement, and overband wear shall be routed, cleaned and sealed, or cleaned and sealed without routing.

A3. Clean and Seal

Transverse and centerline cracks between $\frac{1}{8}$ " and $\frac{1}{4}$ " wide shall be cleaned and sealed.

B Materials

B1. Rout and Seal at Transverse Cracks

Furnish material conforming to requirements of the standard specification for joint and crack sealants, hot applied, for concrete and asphalt pavements, ASTM designation: D6690, Type II or Type IV, and compatible with seal coat special. If the sealant is more than 12 months old from the delivery date of the product, the manufacturer's recommendations shall be used to determine if the product shall be used.

B2. Rout and Seal at Centerline Cracks

Furnish material conforming to the requirements of the standard specification for joint and crack sealants, hot applied, for concrete and asphalt pavements, ASTM designation: D6690, Type II or Type IV, and compatible with seal coat special. If the sealant is more than 12 months old from the delivery date of the product, the manufacturer's recommendations shall be used to determine if the product shall be used.

B3. Re-Seal at Transverse, Centerline, and Longitudinal Cracks

Furnish material conforming to the requirements of the standard specification for joint and crack sealants, hot applied, for concrete and asphalt pavements, ASTM Designation: D6690, Type II or Type IV, and compatible with seal coat special. If the sealant is more than 12 months old from the delivery date of the product, the manufacturer's recommendations shall be used to determine if the product shall be used.

B4. Sealant Requirements

Deliver the sealant in the manufacturer's original sealed container legibly marked with the following information:

- Manufacturer's name
- Trade name of sealant
- Manufacturer's batch or lot number
- ASTM designation
- Minimum application temperature
- Maximum (or safe) heating temperature

Before applying the sealant, submit a manufacturer's certificate of compliance certifying the compound meets the requirements of this specification and a copy of the manufacturer's recommendations on heating, re-heating, and applying the sealant.

The temperature of the sealant in the field application equipment shall not exceed the safe heating temperature recommended by the manufacturer. Temperatures above the safe heating temperature will result in rejection of the sealant material and will require disposal of the sealant material.

Do not place sealant if the temperature of the material is below the manufacturer's recommended minimum application/pouring temperature.

Mixing of different manufacturer's brands or different types of sealants is prohibited.

Document locations where the material from each lot number of sealant is placed.

C Construction

C1. Weather Limitations

Sealant materials shall only be placed during a period of rising temperature after the air and surface temperature in the shade and away from artificial heat sources has reached 40° F and indications are for a continued rise in temperature. During a period of falling temperatures, which may fall below 40° F, placement of the sealant material shall be suspended until the above conditions are met.

Do not place sealant material if weather conditions are raining or wet. Should the sealant be placed and rain should fall before the sealant has properly cured, remove and replace the wet/contaminated sealant.

C2. Equipment Requirements

C2.1 Melting Kettle

The melting kettle shall be an oil jacketed double boiler type, equipped with both agitation and recirculation systems capable of starting at ambient temperature and bringing the sealant material to application temperature within one hour, while continuously agitating and recirculation the sealant. The melter shall be equipped with automatic thermostatic controls and temperature gauges to monitor the sealant temperature in the applicator lines and temperature of heat transfer oil in the kettle jacket. It shall be equipped with a pump to pressure fill cracks with the wand applicator. The melting kettle shall be properly insulated to ensure heat is not radiated to the pavement surface.

Furnish, for use by the engineer, an infrared temperature measuring gun accurate to 1°F at 400°F. The engineer may check the pouring temperature of the sealant at the point of discharge into the reservoir. If the sealant falls below the recommended application/pouring temperature, all production shall stop at the melting kettle until the recommended application/pouring temperature is obtained. Should the sealant temperature at the point of discharge exceed the maximum safe heating temperature, the melting kettle shall be emptied of all sealant, and the sealant shall be legally disposed of in an environmentally safe method.

C2.2 Router

A minimum of two self-propelled routers will be required capable of providing a cut of uniform depth and width. An engine capable of achieving a minimum of 25 horsepower shall power the router. The router blade or blades shall be of such size and configuration to cut the desired joint reservoir in one pass of the route. The sealant reservoir created shall have vertical sides and a flat bottom. The router must be capable of following straight or meandering cracks. It must have an automatic depth control to ensure consistent and accurate routing depths.

C2.3 Air Compressor

The air compressor shall be capable of producing a continuous stream of clean, dry air through the nozzle at 75-150 PSI and 225 CFM minimum. The compressed air unit shall be equipped with water and oil traps and must produce sufficient air volume and pressure to remove all debris from the crack, whether route or not, and all adjacent road surfaces in a safe manner so the debris will not re-enter the crack prior to the sealing operation. The traps used to remove moisture and oil shall be checked by the contractor at least once per day of production and replaced when necessary.

- The use of backpack blowers is not allowed.
- The use of vacuum cleaning equipment may be allowed after demonstrating to the engineer the vacuum equipment can successfully clean the cracks.

C2.4 Heat Lance

Heat Lance shall operate with propane and compressed air in combination and be capable of achieving a temperature of heated air at the exit orifice of 1,800°F and a discharge velocity of 3,000 feet per second.

C3. Preparation, Cleaning and Conditioning

C3.1 Preparation

Transverse and centerline cracks measuring less than or equal to $\frac{3}{4}$ " wide shall be routed to a width and depth of $\frac{3}{4}$ ". The router shall at all times exhibit the capability of cutting the desired reservoir in one easy pass. Change cutters when it is evident the reservoir configuration specified is not being achieved. Demonstrate the cutters capability of following meandering cracks and maintaining centering of the reservoir over the crack within $\pm\frac{1}{4}$ ". The resulting reservoir shall have vertical sidewalls and a uniform flat bottom. Anytime the contractor cannot meet these requirements, the production of the cutter shall cease until the requirements can be met.

C3.2 Cleaning

For all cracks to be sealed, immediately prior to conditioning, the cracks shall be thoroughly cleaned with a minimum of one pass of the air wand not more than 2 inches from each face of the reservoir/crack. Cleaning shall continue until the reservoir/crack is dry and all dirt, dust, or deleterious matter is removed. If the air compressor produced dirt or other residue, the contractor will be required to re-clean the reservoir/crack. Routing may be required on 're-seal' cracks to remove old sealant.

C3.3 Conditioning

For all cracks to be sealed, immediately prior to the placement of the crack sealant, the surfaces of a routed reservoir, as well as the adjacent pavement on either side of the reservoir or a crack shall be conditioned with hot compressed air from a heat lance. The heat lance shall be placed within 3 inches of each sidewall of the reservoir or crack. This treatment shall continue until the affected areas are conditioned. The heat lance shall not scorch the routed reservoir, crack, or adjacent

pavement surface. The engineer reserves the right to randomly spot check the reservoirs/cracks to verify they are clean and dry. Anytime the engineer determines this requirement is not being met, modify operation to meet these requirements.

Provide protective screening if preparation, cleaning, and conditioning operations should cause damage to or interference with traffic in adjacent lanes.

C4. Crack Sealing Operations

The crack sealant shall be placed immediately after the completion of the preparation, cleaning, and conditioning with the heat lance. Cracks shall be sealed when the sealant material is at the application/pouring temperature recommended by the manufacturer.

For 'Rout and Seal' cracks completely fill the reservoirs/cracks using multiple passes if necessary. The width of the overband, including the routed reservoir, should be about 3.0 inches wide with a maximum film thickness of the overband limited to 1/8 inches thick. The contractor may be required to use a squeegee to force the sealant material into narrow cracks if the sealant material is not flowing into the crack properly.

For 'Re-seal' cracks, sealant shall be applied using an application wand followed by a "V" shaped squeegee or using a round application head having a concave underside or other methods to meet the requirements for size and shape. The maximum width of the application head shall be 3 inches for standard coverage and 6 inches for multi-crack locations. The maximum film thickness of the overband is limited to 1/8 inches thick.

Care shall be taken in the sealing of the cracks so the cracks are not overfilled and the final appearance shall present a neat, fine line. The applicator wand shall be returned to the machine and the joint sealant material re-circulated immediately upon completion of each crack sealing.

Sealants shall not be removed from their packaging until immediately before it is placed in the melter. Feed additional sealant into the melter at a rate equal to or less than the rate of placement of the sealant in the reservoirs/cracks.

After the sealant has been placed and cured and prior to opening the road to traffic, any additional debris left on the roadway surface shall be removed. Any method used to complete this work shall not damage the newly placed sealant; repair any damage to the sealant. The contractor may apply toilet paper or a light coating of sand, dust, or an approved de-tacking agent for use with the specified sealant to the surface of the newly placed sealant if traffic results in tracking of the crack sealing material. Repair any damage by traffic to treated pavement areas.

C5. Documentation

Melting kettle production data sheets shall be developed, completed, and submitted daily for each kettle on the project with the following information.

- Date, county, highway route number, and highway segment.
- Weather conditions at morning, mid-day, and afternoon intervals.
- Kettle number, ambient air and pavement temperature in °F at the beginning, mid-day and end of the day.
- Kettle temperature in °F once an hour during working production
- Sealant material temperature in °F at the wand once an hour during working production.
- Beginning and ending locations on project for the day, including lane and direction.
- The amount of materials used for the day in pounds, including lot numbers.
- Unique or atypical situations on the project which may affect the placement or performance of the sealed cracks.

- The contractor's authorized signature.

C6. Workmanship

During crack sealing operations, the engineer may review the sealant temperatures at the melting kettle intermittently. If the temperatures are above the manufacturer's specified safe heating temperature, the sealant will be rejected. Empty the kettle of the over-heated material and legally dispose of it in an environmentally safe method.

Asphalt cracks, whether sealed by the 'rout and seal', 'clean and seal', or 're-seal' method, will be observed on a crack-by-crack basis for acceptable workmanship. Unsealed cracks will be brought to the attention of the contractor. Fill all unsealed cracks before re-opening the roadway to traffic.

Sealed cracks shall be rejected if there is evidence of poor workmanship or obvious defects, including, but not limited to:

1. Routed reservoir not filled completely and over-banded
2. Lack of bond to the sidewalls of the joint reservoir, crack, or asphalt pavement
3. Excessive debris or moisture in the joint reservoir or crack
4. Contamination of the sealant
5. Excessive pools of sealant on the pavement or shoulder surface
6. Excessively wide, thick sealant overband

Rejected sealed cracks shall be repaired, the sealant removed and disposed of in a legal and appropriate manner and the cracks resealed as necessary.

D Measurement

The department will measure Prepare Existing Pavement for Asphaltic Seal Coat by mile of the project. A mile is defined as a linear measurement taken along the centerline to the nearest tenth of a mile and will include the sealing of asphalt cracks in the traffic lanes, auxiliary lanes, and paved shoulders as well as preparing the existing pavement marking for adhesion of the Seal Coat Special.

For a divided highway the mile will be measured separately in each direction.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0125.01	Prepare Existing Pavement for Asphaltic Seal Coat	MI

Payment is full compensation for completing all work detailed in this section, and for furnishing all materials.

END OF ADDENDUM