

53.9 ASPHALT SURFACE TREATMENT

53.9.1 GENERAL

The Work consists of scarifying and salvaging existing asphalt bound aggregate and/or gravel surfacing, adding and blending additional crushed aggregate when required, adding liquid asphalt, mixing and compacting the asphalt bound aggregate on the roadway in accordance with the specifications and plans herein.

53.9.2 MATERIALS

53.9.2.1 Aggregate

When required, the Contractor shall provide gravel surfacing aggregate in accordance with Specification 53.29, Spot Gravelling or Specification 53.30, Gravel Surfacing as shown on the Work Order.

53.9.2.2 Asphalt

The Contractor shall supply the type and grade of asphalt material generally accepted for this work from the Alberta Transportation Recognized Products list.

The Contractor shall verify that all asphalt delivered and used in the Work is the type and grade ordered.

Asphalt binder shall not be fluxed or cut back with oil, or any other fluxing agent.

53.9.3 PROCEDURE

53.9.3.1 Preparing Subgrade Surface

Where specified by the Engineer, the subgrade surface shall be prepared in accordance with the provisions of Specification 53.27, Maintenance and Preparation of Gravel Surface Roads and Snow Removal and Ice Control on Gravel and Paved Surfaces, prior to application of the asphalt surface treatment.

53.9.3.2 General

Unless otherwise specified, asphalt surface treatment materials shall be mixed and processed on the subgrade surface of the roadbed.

Application of asphaltic binder shall be performed only when the air temperature in the shade is 5°C or higher, and when the weather conditions are otherwise acceptable to the Engineer. The application temperature of the asphaltic binder will be as specified by the Engineer.

Placement of asphalt surface treatment materials on a frozen subgrade will not be permitted.

53.9.3.3 Road Mixing Methods

When the area to be treated already has surfacing gravel, with or without asphalt, this material shall be scarified with approved equipment only to the depth of the existing surfacing aggregate, windrowed uniformly upon the subgrade, additional aggregate added as directed by the Engineer, and mixed and dried by blading back and forth. When the material has been dried to a moisture content of 2% or lower, it shall be spread by blades and asphalt shall be uniformly applied by an approved type of pressure distributor at a rate of from 45 litres to 90 litres per cubic metre, as directed by the Engineer. Lesser quantities of asphalt may be required when aggregates being used have been treated previously. Care shall be taken to avoid rich or lean areas at the ends of each distributor run. Mixing shall start immediately, and shall continue until uniform colour is obtained and the cutback has been released by thorough aeration of the material.

Mixing shall be accomplished by approved types of pulvi-mixers, motor graders, gravel mixers, or other approved equipment only, and shall be continued until the resulting mixture is entirely uniform in asphalt content. Mixing shall be carried out between passes of the distributor, as well as subsequent to the completion of addition of asphalt.

Mixing equipment used shall be controlled and operated on each pass to pick up and/or mix all the material to be treated, and to avoid cutting into the subgrade or picking up unmixed material on successive passes of the mixer.

The mixture shall then be brought to a single windrow, and from there bladed out to required cross-section and uniform depth. The surface shall then be rolled with pneumatic-tired rollers, or such other equipment as approved by the Engineer, in conjunction with light blading where necessary to maintain the required cross-section and grade. Rolling shall be continued until all aggregate is firmly embedded and the asphalt surface treatment layer is impervious to moisture penetration.

In lieu of mixing the asphaltic binder as specified above, the Contractor may employ such other procedures as approved by the Engineer.

Spreading equipment shall be constructed and operated to produce a layer of material of uniform thickness and width. The type of spreading equipment used shall be approved by the Engineer.

Where the asphalt surface treatment has been aerated or mixed in a blanket type layer on the subgrade, it shall be windrowed to a uniform windrow prior to spreading and compaction.

Where spreading of the asphalt surface treatment mixture is carried out by motor grader, the material shall be thoroughly compacted by equipment hereinbefore specified immediately upon completion of each portion of the spreading operation. Rolling shall be performed in such a manner as to avoid the formation of irregularities.

Where traffic must travel over the roadway surface during the curing period, the Contractor shall restrict traffic speeds sufficiently to prevent surface damage.

53.9.4 SAMPLING AND TESTING

The Contractor shall retain copies of his supplier's QC testing results, and undertake the quality control and quality assurance testing as required by the QC/QA Program as shown in the Special Provisions. The Contractor shall supply material samples to the Engineer for QA (Audit) testing purposes when requested.

53.9.4.1 Interim Traffic Markings (Spotting)

Where newly constructed patches obliterate existing painted roadway lines, the Contractor shall provide interim painted traffic markings (spotting) on the patched area immediately upon completion of the patching work. The end points of the barrier lines shall be marked or otherwise referenced where applicable.

All spotting shall be applied using the same colour paint as the permanent marking. Spots shall be 10 centimetres wide and 30 centimetres long, applied lengthwise to the road surface and shall delineate the travel lanes and/or edge lines as applicable. The maximum distance between spots shall be 15 metres on tangent sections and 10 metres on curves.

The spots and centerline barrier line reference marks shall be completely covered with glass beads at the time of painting.

53.9.5 ACCEPTANCE CRITERIA

Evaluation of the work will be based on a visual inspection by the Engineer. The Work will be considered acceptable when;

- ! all materials are supplied in conformance with the specifications,
- ! the treated area:
 - is uniform in appearance with no areas exhibiting inadequate or excessive amounts of oil,
 - is properly compacted,
 - provides a smooth, level transition to the adjacent undisturbed oil bound surface,
- ! any loose aggregate material is removed and the work site left in a clean condition.

The Contractor shall re-treat any failed areas at his expense.

53.9.6 TIME TO COMPLETE

In urgent situations, the Contractor shall complete the Work within 10 calendar days of the issuance of the Work Order. When the Work is required expeditiously but is not urgent, the Engineer will request the Work be completed within 30 calendar days. In all other cases, the Contractor shall complete the Work within 60 calendar days of the issuance of the Work Order.

53.9.7 MEASUREMENT AND PAYMENT

53.9.7.1 General

Asphalt surface treatment will be measured by the square metre of surface area treated and will be classified according to the total treated area for each contiguous five kilometre section of roadway as follows:

- ! Areas up to 1000 m² will be classified as "Asphalt Surface Treatment - Patching".
- ! Areas from 1000 m² to 10 000 m² will be classified as "Asphalt Surface Treatment - Minor Repair".
- ! Areas over 10 000 m² will be classified as "Asphalt Surface Treatment - Major Repair" and will apply to reworking large areas of existing asphalt bound roadway.
- ! The treatment of previously untreated gravel roadways will be classified as "Asphalt Surface Treatment - New Construction".

53.9.7.2 Preparing Subgrade

When the Engineer directs that the existing subgrade requires reworking, payment will in accordance with Specification 53.27, Maintenance and Preparation of Gravel Surface Roads and Snow Removal and Ice Control on Gravel and Paved Surfaces.

53.9.7.3 Repair of Existing Asphalt Bound Surfaces

Payment for repairs to existing asphalt bound surfaces will be made at the applicable unit prices bid per square metre for "Asphalt Surface Treatment - Patching", "Asphalt Surface Treatment - Minor Repair" or "Asphalt Surface Treatment - Major Repair". Payments will be full compensation for scarifying the existing asphalt bound material, incorporating new aggregate material when necessary, applying asphalt binder, mixing, spreading, compacting, maintaining traffic, and all labour, tools, equipment and incidentals necessary to complete the Work.

Supplying and applying interim marking paint and glass beads will not be paid for separately but will be considered incidental to the Work.

Any damage caused to the roadway structure outside the patch area shall be repaired at the Contractor's expense.

53.9.7.4 New Construction

Payment for the construction of new asphalt bound roadway will be made at the unit price bid per square metre for "Asphalt Surface Treatment - New Construction". This payment will be full compensation for salvaging the existing surfacing gravel, adding and blending additional surfacing gravel when required, applying asphalt binder, mixing, spreading, compacting, maintaining traffic and all labour, tools, equipment and incidentals necessary to complete the Work.

53.9.7.5 Surfacing Gravel

When additional surfacing gravel is required to complete the Work, payment will be made in accordance with Specification 53.29, Spot Gravelling or Specification 53.30, Gravel Surfacing.

53.9.7.6 Supply of Asphalt

Payment for the supply of asphalt binder will be made at the unit price bid per tonne for "Supply of Asphalt for Surface Treatment".

53.9.7.7 Accelerated Scheduling Premiums

In urgent situations where the Contractor is required to complete the Work within 10 calendar days of the issuance of the Work Order, an additional payment will be made at the unit price bid per occurrence for "Asphalt Surface Treatment - Premium". This payment will be full compensation for complying with the accelerated scheduling required to complete the Work, including accelerated scheduling for all related Work.

In situations where the Contractor is required to complete the Work within 30 calendar days of the issuance of the Work Order, an additional payment will be made at the unit price bid per occurrence for "Asphalt Surface Treatment - Interim Premium". This payment will be full compensation for complying with the accelerated scheduling required to complete the Work, including accelerated scheduling for all related Work.

53.9.8 WARRANTY

The warranty period for asphalt surface treatment patches and repairs will be 120 days. The warranty period for new construction will be one year.