

## 1.0 GENERAL

### 1.1 Work Included

- .1 Localized removal of existing asphalt pavement, preparation of subgrade, and installation of new asphalt where affected by the work.

### 1.2 Reference Standards

- .1 All referenced Standards are latest editions referenced by the Building Code in the Place of the Work, or latest editions if not referenced by Code.
- .2 Ontario Building Code
- .3 ASTM C117 Standard Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
- .4 ASTM C136/136M Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- .5 ASTM D98 Standard Specification for Calcium Chloride
- .6 ASTM D6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
- .7 CAN/CGSB-8.1-88 Sieves, Testing, Woven Wire, Inch Series (Withdrawn)
- .8 CAN/CGSB-8.2-M88 Sieves, Testing, Woven Wire, Metric Series (Withdrawn)
- .9 OPSS 310 Hot Mix Asphalt
- .10 OPSS 1010 Aggregates - Base, Subbase, Select Subgrade, and Backfill Material
- .11 OPSS 1150 Hot Mix Asphalt
- .12 OPSS1212 Hot-Poured Rubberized Asphalt Joint Sealing Compound

### **1.3 Submittals**

- .1 Submit, to Consultant, certificates from suppliers attesting that materials comply with the Specifications.
  - .1 Submit viscosity-temperature chart for asphalt cement to be supplied showing either Saybolt Furol viscosity in seconds or Kinematic Viscosity in centistokes, temperature range 105°C to 175°C.
  - .2 Submit manufacturer's test data and certification that asphalt cement meets requirements of this Section.
  - .3 Submit manufacturer's test data and certification that hydrated lime meets requirements of this Section.
- .2 Submit asphalt mix design for Consultant review.
- .3 Provide copies of waybills for granular base and asphalt materials to the Consultant at end of each working day. These waybills shall form a basis for determining if specified quantities of materials have been used in the pavement.
  - .1 Unit weight for materials shall be determined by the average of three compaction tests conducted in the field or the minimum specified weights used and volume based on measured areas.

### **1.4 Warranty**

- .1 Warrant work of this section against defects in materials and workmanship as outlined in Section 01 78 36. Replace, repair, and otherwise make good faulty or damaged work, particularly settlements, cracks, and surface finish defects to an "as new" condition.

## **2.0 PRODUCTS**

### **2.1 Materials**

- .1 Granular Base Material: 200mm min Granular A - OPSS 1010
- .2 Base Course of Asphalt: 100mm min HL8 - OPSS 1150
- .3 Modified asphalt cement to be produced with asphalt cement compatible with latex or polymer modifier used.

- .4 Crushed stone or gravel consisting of hard, durable, angular particles; free from clay lumps, cementation, organic material, frozen material, and other deleterious materials.
- .5 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1 or 8.2.
- .6 Calcium Chloride: ASTM D98 approved commercial grade material, suitable for highway construction.
- .7 Tack coat for asphalt to be an asphalt emulsion.
- .8 Joint sealant shall be hot poured rubberized asphalt joint sealant conforming to OPSS No. 1212 and ASTM D6690.

## **2.2 Equipment**

- .1 Submit proposed equipment weight for Consultant review.

## **3.0 EXECUTION**

### **3.1 Surface Preparation Prior to Installation of New Asphalt**

- .1 Verify grade of items set in paving area for conformity with elevations and sections before placing granular base material.
- .2 Allow Consultant's review of subgrade before placing granular base.
- .3 Place granular base material on clean unfrozen surfaces that are free from snow and ice.
- .4 Place granular base to compacted thicknesses as indicated in Contract Documents or as directed by the Consultant. Do not place frozen material.
- .5 Place in layers not exceeding 150 mm compacted thickness. Compact not less than 98% Standard Proctor Maximum Dry Density.
- .6 Finished base surface to be within 10 mm of specified grade but not uniformly high or low.
- .7 Ensure all damaged and deteriorated sections of existing asphalt pavement have been repaired, including replacement of granular base.
- .8 Ensure all cracks and joints have been routed and sealed with hot poured rubberized joint sealant.

- .9 Ensure all asphalt termination points have been treated per Drawings and/or Specifications.
- .10 All surfaces to be clean and dry.
- .11 Following cleaning operations, apply tack coat at rate of 0.6 to 0.9 L/sq. m (0.1 to 0.15 gal/sq. yd) to surfaces.

### **3.2 Asphalt Placement**

- .1 Do not carry out paving work unless air temperature at pavement surface is at least 2°C and rising.
- .2 Deliver hot mix to paver continuously at a constant temperature. Maintain temperature within range specified by the PGAC (Performance Graded Asphalt Cement) supplier.
- .3 Lay mixtures not lower than 120°C for regular mixes. Temperature requirements apply to location of asphalt placement.
- .4 Place asphalt concrete wherever possible by a self-propelled asphalt spreader using full-width of the machine. Where this is impractical or in confined areas, use small pavers or spread by hand. Asphalt to be placed in layers not exceeding 50 mm lifts.
- .5 Unless otherwise shown, lay asphalt concrete over prepared existing pavement to provide 100 mm (4") minimum thickness after compaction.
- .6 Do not allow traffic onto asphalt surface until asphalt sealer is adequately cured.

### **3.3 Compacting**

- .1 Compact asphalt paving in accordance with the Ontario Provincial Standard Specifications, using proper equipment to achieve the specified density and complying with OPSS 310.
- .2 Compact to a minimum of 92% of Maximum Relative Density (MRD).
  - .1 Density shall be measured using a nuclear density gauge.
- .3 Compact at curbs and inaccessible locations by hand tapping or other approved means. Avoid damage to curbs, edgings, and other work adjacent. Perform this work concurrently with operations of vibratory roller.

- .4 Finished surfaces to be finished grades indicated, with slope to drains and catch basins. Finished surfaces to be uniform, smooth, even, dense; free from shallow areas, protrusions, and surplus asphalt. Correct any irregularities that vary more than 6 mm in 3,050 mm (1/4" in 10'-0").
- .5 Compress mixture uniformly by rolling as soon after being spread as it will bear the roller without checking or undue displacement.
- .6 Where physically possible, start rolling longitudinally at sides and proceed towards centre of pavement course, overlapping on successive trips by at least 1/2 the width of the rear wheel. Make alternate trips of the roller of slightly different lengths. Where width permits, roll pavement diagonally on two directions, with second diagonal rolling crossing the lines of the first.
- .7 Place mixture as continuous as possible and pass roller over unprotected edge of the freshly laid mixture only when laying of this course is to be discontinued for a length of time to allow the mixture to become chilled.
- .8 Bond wheel and seal longitudinal, transverse, and all other joints. Make joints between old and new pavements or between successive days work in such a manner as to ensure a thorough and continuous bond between the old and new surfaces. Except when a board or canvas rope is used to form transverse joints, cut back the edge of the previously laid course to its full depth to expose a fresh surface; after which, place the hot mixture in contact with it and rake to a proper depth and grade. Employ hot smoothers and tampers in such a manner as to heat up the old pavement sufficiently (without burning it) to ensure a proper bond. Before placing mixture against it, paint contact surfaces of all joints, including curbs and gutters, with a thin uniform coating of asphalt cement or asphalt cement dissolved in naphtha.
- .9 In making the joint along any adjoining edge of the curb, gutter, or adjacent pavement and after hot mixture is placed by finishing machine, carry back just enough of the hot material to fill any space left open. Set up this joint properly with the back of the rake and approved lightweight steel broom at proper height and bevel to receive maximum compression under rolling.
- .10 Consolidate asphalt concrete paving by rolling with a three-wheeled or tandem power-driven roller of not less than five tons (4.5 t).
- .11 Where no wood or concrete screeds occur, bevel edge of paved areas 45°. If screeds are used, remove same after asphalt pavement is laid and make good sod or grounds adjacent to new paving.

- .12 Existing paving that is damaged or removed to permit construction of new work shall be reinstated. Conform to requirements of this Specification.

### **3.4 Cleaning**

- .1 Refer to Section 01 74 00.

### **3.5 Inspection and Testing**

- .1 Testing to be conducted by a testing agency designated by Owner. Unless otherwise noted, Owner will pay costs of inspection and testing described in this Section.
- .2 Inform Consultant and testing agency 24 hours in advance of work to be performed under this Section.
- .3 During application, material temperatures and compaction tests will be performed. Samples of asphalt shall be taken to laboratory to verify conformance of material supplied with Specifications
- .4 To ensure proper bonding of overlay to existing pavement, adhesion tests may be performed. Number and location of tests shall be designated by the Consultant on site, based on one test per 500 sq. m of asphalt placed.
- .5 Tests may be performed, at discretion of Consultant, to confirm in-situ material thickness.

**END OF SECTION**