CONSTRUCTION SPECIFICATION FOR ASPHALT HEATER SCARIFYING

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TS 3.10.01 SCOPE

This Specification covers the requirements for the preparation of the existing pavement surface, heating and scarifying the existing asphaltic concrete, and redistribution and compaction of the mixture in a single operation.

TS 3.10.02 REFERENCES

This Specification refers to the following specifications and publications:

Ontario Provincial Standard Specifications, Construction

OPSS 332 – Hot In-Place Recycling and Hot In-Place Recycling with Integral Overlay (Sept. 1996)

City of Toronto Specifications

TS 310 – Construction Specification for Hot Mixed, Hot Laid, Asphaltic Concrete Paving (June 2001)

TS 3.10.03 DEFINITIONS – Not Used

TS 3.10.04 SUBMISSION AND DESIGN REQUIREMENTS – Not Used

TS 3.10.05 MATERIALS – Not Used

TS 3.10.06 EQUIPMENT

TS 3.10.06.01 Preheaters

The heating units shall apply heat in a uniform manner to the surface of the existing pavement to be scarified. Direct flame shall not contact the asphaltic concrete pavement.

The preheaters shall be capable of penetrating heat to the full depth of scarification and obtaining the required temperature for the scarified mixture.

The entire preheater assembly shall be designed to be raised or lowered by a single control. The preheater shall be adjustable in width from 1.0 to 4.0 metres.

TS 3.10.06.02 Asphalt Heater Scarifier

The asphalt heater scarifier is to be self-propelled and the heating system must be capable of turning on or off instantaneously. It must also be capable of ranging in width from 1.0 m to 4.0 m and shall be designed to be raised or lowered by a single control.

The heating assembly of the scarifier shall meet the requirements for the preheater.

At an ambient air temperature of 15.5°C or higher, the preheater and asphalt heater scarifier, must be capable of covering a minimum of 500 m² per hour, at a depth of 40 mm. Where a preheater and heater scarifier cannot meet this requirement, the Contractor shall then supply a second separate preheater unit, to enable him to meet the above requirement.

TS 3.10.06.03 Rollers

All equipment required for compaction shall be as specified in TS 310.

TS 3.10.07 CONSTRUCTION

TS 3.10.07.01 Preparation

Materials such as cold mix patching materials, crack sealant and spray patch material shall be removed and disposed off of the site, prior to the heating and scarifying process.

The surface of the pavement shall be swept with a power broom prior to heater scarifying to remove all deleterious material.

TS 3.10.07.02 Scarifying Limits

The scarified surface is to be brought up to within 0.6 m from the existing gutter at all locations unless a deep milling in the curb lane is performed. Where a deep milling is specified or in areas that are not accessible to the scarifier, the asphalt will be milled deep and replaced by high stability HL-8 (high stability) asphalt or as specified.

Under no circumstance shall the scarifier be allowed to make a pass that straddles the crown of the roadway.

The scarified surface shall be 150 mm wider than the screed following, and each pass shall overlap the previous scarified adjacent surface by a minimum of 300 mm.

TS 3.10.07.03 Placing Recycled Mix

The heating and scarifying machines shall heat and scarify the asphalt surface to the required depth within the specified limits. The scarified asphalt shall then be placed and compacted, as specified in TS 310.

TS 3.10.07.04 Heating Fuel

Either propane or butane is to be used for heating fuel to prevent detrimental sooting or oil coating of the aggregate or asphaltic material and to meet air pollution laws to keep smoke produced to a minimum and not objectionable to traffic, in the adjoining roadway or other operations.

TS 3.10.08 QUALITY ASSURANCE

TS 3.10.08.01 Temperatures

The temperature of the scarified material shall be between 110°C and 150°C immediately after screeding and prior to initial rolling. The asphalt binder shall not be charred over more than 0.1% of the area of the work. One hundred percent (100%) of the aggregate of the pavement being scarified shall be moved by spinning and tumbling, thus providing for the filling of cracks and turning the worn and dried faces of exposed aggregate.

TS 3.10.08.02 Depth

The existing asphalt concrete pavement is to be scarified to a minimum depth of 35 mm, or as directed by the Commissioner.

Random testing will be performed to determine the depth of scarification. The location and sizes of the lots will be as specified in the contract or as determined by the Commissioner. The location of each test will be determined by the Commissioner.

Holes in the hot mix mat, which were made during the removal of material for testing, shall be filled with appropriate hot mix and mechanically compacted.

Testing for the depth of scarification shall be the responsibility of the Contractor.

TS 3.10.08.02.01 Determination of Scarification Depth

Testing to determine the scarification depth shall be as specified in OPSS 332.07.09.

The mass of the existing asphalt concrete pavement (E) has been estimated to be approximately 2500 Kilograms per cubic metre (Kg/m^3).

If tests indicate that the existing asphalt concrete pavement weighs less than 2400 Kg/m^3 or more than 2600 Kg/m^3, the mass of the existing asphalt concrete pavement (E) will be adjusted accordingly by the Commissioner. Scarification, for each lot, will be deemed acceptable when the average of three (3) consecutive tests immediately behind the scarifier and in different locations indicate that the required depth has been scarified.

TS 3.10.08.03 Compaction

All compaction requirements will be as specified in TS 310.

TS 3.10.09 MEASUREMENT FOR PAYMENT

TS 3.10.09.01 Scarifying Asphalt

Measurement of the existing pavement area to be scarified will be made in square metres (m^2). No deduction will be made for maintenance holes, valve chambers, etc. The limits for payment shall be 0.6 m along the gutters and the length, as directed by the Commissioner. Any scarifying beyond the limits will be done at the Contractor's expense.

TS 3.10.09.02 Preheater

If a second preheater is required, due to low ambient air temperature, it shall be paid for by the hour under the appropriate tender item. No extra payment will be made for the operator, equipment, material or labourers required to operate the second preheater.

TS 3.10.10 BASIS OF PAYMENT

TS 3.10.10.01 Scarifying Asphalt - Item

Payment at the contract price for the above item shall be full compensation for all labour, equipment, materials and incidentals to do the work. Payment shall include, but not be limited to, the supply and operation of the heater scarifier and the first preheater, the scarifying of the existing asphalt, the addition of the specified additives, the placing and compacting of the resultant mixture, and the testing for depth of scarification.

TS 3.10.10.02 Preheater - Item

Payment at the contract price for the above item shall be full compensation for all labour, equipment, materials and incidentals to do the work. Payment shall include, but not be limited to, the supply and operation of the second preheater.