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**CONSTRUCTION SPECIFICATION FOR
STOCKPILING OF PATCHING MATERIALS
AND PATCHING OF ASPHALT PAVEMENT**

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307.01 SCOPE

This specification covers the requirements for transportation and stockpiling of patching materials and the patch repairs to asphalt pavement using SC-800 patching material, emulsified asphalt patching material, or proprietary cold patching material (PCPM).

307.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 309 Cold Mixed, Cold Laid, Open and Dense Graded Bituminous Mix

Ontario Provincial Standard Specifications, Material

OPSS 1003 Aggregates - Hot Mix Asphalt

OPSS 1152 SC-800 Patching Material
OPSS 1153 Emulsified Asphalt Patching Material

Ontario Ministry of Transportation Publications

MTO Laboratory Testing Manual:

LS-282 Quantitative Extraction of Asphalt Cement and Analysis of Extracted Aggregate from Bituminous Paving Mixtures
LS-289 Workability of Cold Bituminous Patching Materials by Blade Resistance Method

307.03 DEFINITIONS

For the purpose of this specification, the following definitions apply:

Binder means the approved bituminous binding material conforming to the manufacturer's product specification.

Manufacturer means the company that produces the PCPM being used.

Manufacturer's Product Specification means the manufacturer's PCPM specification, including the ingredients that were submitted to obtain Owner approval of the PCPM.

Manufacturer Terminal means the location where the final PCPM is produced, without further blending or modification prior to distribution to the work site.

Proprietary Cold Patching Material (PCPM) means a cold patching mix consisting of binder and aggregates, and manufactured by a specific company.

307.04 DESIGN AND SUBMISSION REQUIREMENTS

307.04.01 Design Requirements

307.04.01.01 Proprietary Cold Patching Material

PCPM to be stockpiled shall be capable of maintaining its effective properties for a minimum period of 8 months from the date of supply.

307.04.02 Submission Requirements

307.04.02.01 Proprietary Cold Patching Material

A copy of the manufacturer's product specification shall be submitted to the Contract Administrator at least 7 Days prior to delivery of the mix.

307.05 MATERIALS

307.05.01 SC-800 Patching Material

SC-800 patching material shall be according to OPSS 1152 and this specification.

307.05.02 Emulsified Asphalt Patching Material

Emulsified asphalt patching material shall be according to OPSS 1153 and this specification.

307.05.03 Proprietary Cold Patching Material

The PCPM shall be according to the manufacturer's product specification and this specification, and shall be either a summer or winter mix category as specified in the Contract Documents. The PCPM shall be supplied directly from the manufacturer's terminal without further blending or modification.

The aggregates used in the PCPM shall consist of clean, hard, durable particles meeting the physical requirements for Superpave 12.5 as specified in OPSS 1003.

All PCPM supplied shall be uniformly coated.

307.06 EQUIPMENT

307.06.01 Placement and Compaction

Suitable method, equipment, and hand tools or according to the Equipment section of OPSS 309 shall be used for placing and compaction of patching materials.

307.07 CONSTRUCTION

307.07.01 Stockpiling

Stockpiles shall be built at locations specified in the Contract Documents to a maximum height of 3 m. Stockpiles shall be constructed in such a manner that compaction, other than by the weight of the material itself, shall not result.

Equipment shall not be run over the surface of the stockpile.

307.07.02 Delivery

The mixture shall be transported in vehicles with smooth metal boxes in good and leak-proof condition, previously cleaned of all foreign materials.

Truck boxes shall be lightly coated with a uniform application of a release agent just prior to loading. If liquid agent is used, the truck boxes shall be drained after each application and prior to loading.

307.07.03 Placement and Compaction

307.07.03.01 General

Asphalt repairs using patching material shall be carried out at the locations identified in the Contract Documents.

At the time of use, stockpiled patching material shall exhibit uniform coating, good cohesion and workability, and be in accordance with the material specification requirements.

The Contractor shall ensure proper adhesion of the mixture placed during the patching operation to the adjacent surfaces.

For repairs, patching material shall be placed in the repair area and compacted as specified in the Contract Documents. Placement and compaction of the patching material shall be sufficient to meet the requirements of the Surface Appearance subsection.

For repairs exceeding 50 mm in depth, the patching material shall be placed in lift thicknesses of maximum 50 mm in depth and each lift shall be compacted prior to the addition of the next lift.

307.07.03.02 SC-800 Patching Material and Emulsified Patching Material

The surface on which the patching material is placed shall be free of dirt, sand, foreign matter, and loose material and the repair area shall be free of standing water.

307.07.03.03 Proprietary Cold Patching Material

The surface on which the patching material is placed shall be free of dirt, sand, foreign matter, and loose material. Standing water in the repair area shall be removed, if required by the PCPM manufacturer's installation instructions.

307.07.04 Surface Appearance

After placement and final compaction of the patching material, patches shall be free of defective areas, including, but not limited to wheel track marking, ravelling, uneven surface, and fat spots.

307.07.05 Sampling

Patching material samples shall be provided when requested by the Owner. Samples may be requested before or during the construction and from the stockpile, truck, or during placement of the material.

Samples required for stripping resistance, workability, and cohesion testing shall be a minimum 25 kg. Samples required for extraction and gradation testing shall be a minimum 15 kg.

The work shall include sampling, packaging, labelling, and delivery of the samples to the laboratory designated in the Contract Documents. Sample containers shall be supplied by the Contractor and shall be metal containers equipped with a wire handle and a tight fitted lid. Samples shall be labelled with the following information:

- a) Contract No.
- b) Sampling date
- c) Mixture type and name
- d) Sampling location
- e) Manufacturer's name
- f) Contractor's name
- g) Weather conditions at the time of sampling
- h) Sampler's name

307.07.06 Management of Excess Material

Management of excess material shall be as specified in the Contract Documents.

307.08 QUALITY ASSURANCE

307.08.01 Acceptance

Acceptance of all patching work shall be based on visual observation of the patching material, surface appearance of the patch at the time of patching, continuity with adjacent surfaces, and conformance of the patching materials to the requirements of this specification.

307.08.02 Visual Observation

During the time of patching, the mix used shall exhibit uniform coating, good cohesion, and workability.

307.08.03 Surface Appearance

All patches after final compaction shall be free of defective areas, including, but not limited to wheel track marking, ravelling, uneven surface, and fat spots. Areas showing such defects shall be deemed rejectable.

307.08.04 Sampling

Representative samples of the patching mixture may be taken at any time for testing by the Owner.

307.08.05 Testing

Patching material samples may be tested by the Owner to ensure it meets the requirements of this specification.

The Owner may request the Contractor to provide test results showing that the patching material possesses required property as determined by the following tests.

307.08.05.01 Emulsified Asphalt Patching Material and Proprietary Cold Patching Material

307.08.05.01.01 Stripping Resistance

Stripping resistance of samples shall be determined using the following procedure:

- a) Place 50 g of the patching material in 400 mL of boiling distilled water in a 600 mL glass beaker.
- b) Stir the mixture with a glass rod at one revolution per second for 3 minutes.
- c) Once stirring is complete, visually evaluate the percentage of coating retained.

Samples with retained coatings of less than 75% shall be deemed rejectable

307.08.05.01.02 Workability

Workability of the patching material sample shall be determined according to LS-289.

Patching material with a workability index of more than 2,000 N shall be deemed rejectable.

307.08.05.01.03 Cohesion

Cohesion of the patching material sample shall be determined by LS-290.

Patching material with a cohesion index of less than 60% shall be deemed rejectable.

307.08.05.02 SC-800 Patching Material

307.08.05.02.01 Extraction and Gradation

Residual asphalt content and gradation of SC-800 Patching Material shall be determined according to LS-282.

SC-800 patching material not complying within the requirements of the subsection for Tolerances of OPSS 1152 shall be rejected.

307.08.06 Rejection

All material and patches rejected by the Contract Administrator shall be removed and replaced. The replaced portion of the work shall meet the requirements of this specification.

307.09 MEASUREMENT FOR PAYMENT

307.09.01 Actual Measurement

**307.09.01.01 SC-800 Patching Material
Emulsified Asphalt Patching Material
Proprietary Cold Patching Material**

Measurement of patching material shall be by mass in tonnes.

307.10 BASIS OF PAYMENT

**307.10.01 SC-800 Patching Material - Item
Emulsified Asphalt Patching Material - Item
Proprietary Cold Patching Material - Item**

Payment at the Contract price for the above tender items shall be full compensation for all labour, Equipment, and Material to do the work.