

**04060 Asphalt Patching****Index**

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**04060-1      Description****1.1            Description**

The work shall include the supplying of all labour, plant, equipment and materials required to cut and remove existing asphalt, replace insufficient load bearing granular and patch paving to the thickness required for street class.

**1.2            Definitions****1.2.1         Shallow Patching**

An area of failed asphalt, that upon removal or milling, shows a hard, stable granular or asphalt concrete structure that does not need to be removed. Removed area is then replaced with a predetermined asphalt type and thickness, according to Table 1.

**1.2.2         Deep Patching**

An area of failed asphalt that, upon removal, shows that the granular structure below the asphalt is not stable. The granular structure would be removed to a depth to accommodate a proper new structure. The structure would be replaced according to Table 1.

**04060-2      Materials****2.1            Granular Base Course**

The Base Course shall conform to the requirements as set out in Section 03005 - "Granular Base Course" of the City of Saskatoon specifications.

**2.2            Pit Run Aggregate**

Pit Run aggregate shall conform to the requirements of Section 03001.

**2.3            Asphaltic Material**

The Asphaltic Material shall meet the current specifications of the Asphalt Institute. The material to be used for tacking saw cut joints shall be 150/200A asphalt cement.

The use of SS-1C as an emulsified prime coat or MC-30 will be permitted for application on the finished base surface as a prime coat.

All Asphaltic Material will meet specifications outlined in Section 04025 - “Asphalt Prime, Tack & Flush Coat” of the City of Saskatoon specifications.

## **2.4 Hot Mix Asphalt**

All Hot Mix Asphalt (HMA) will meet specifications outlined in Section 04010 - “Asphalt Mix” and install in accordance with Section 04015, “Asphalt Concrete” of the City of Saskatoon specifications.

## **2.5 Slurry Seal Coat**

Slurry Seal Coat shall meet specifications outlined in Section 04030 - “Slurry Seal Coat” of the City of Saskatoon specifications.

## **04060-3 Construction**

Table 1: Patch Requirements by Road Classification

<b>Classification</b>	<b>Base</b>	<b>Asphalt</b>	<b>Asphalt Type</b>
Local	300 mm	50 mm	Type 2
Industrial Local	500 mm	80 mm	Type A2
Collector	400 mm	80 mm	Type 2
Arterial	450 mm	100 mm	Type A2
Freeway/Expressway	500 mm	100 mm	Type A2

The Contractor shall supply an experienced operator for any equipment being used.

The Asphalt shall be saw cut prior to the removal of asphalt. The saw cut must extend completely through the asphalt.

## **3.1 Asphalt Removal**

Care must be taken to ensure that the adjacent asphalt is not lifted, nor the edges of the saw cut asphalt damaged. Damaged areas shall be saw cut, removed and fully restored at the Contractor’s expense. Removed asphalt will be stockpiled separately and disposed of at the direction of the Engineer.

Once the asphalt has been removed, the existing granular layer will be proof-rolled by the Contractor. Based on the performance of the granular layer, the Contractor will be directed to either further excavate the area or prepare the existing granular structure. The depth of the excavation will extend to the depth of the pavement structure specified in Table 1. However, based on the results of an axle test or proof-roll on the sub-grade, the Contractor may be directed to further excavate to a specified depth.

### **3.2 Salvage Granular To Stockpile & Reinstall**

Deep patches may have granular material which is suitable for salvaging and reuse. Where appropriate, the Contractor will salvage the granular to a specified depth and stockpile the material on site. During the salvage operation, care must be taken to ensure that the granular material is not contaminated with subgrade soil or other deleterious material. Once the subgrade has been adequately prepared, the salvaged granular will be installed and compacted in accordance with the specification Section 3005-4 Construction - "Granular Base Course", except that densities will not be determined using the Standard Proctor Compaction Test. Instead the salvaged granular shall be proof-rolled. If the salvaged granular is spongy or moves under a concentrated load or during proof-rolling, it shall be reworked until stable and shows no movement.

### **3.3 Prepare Subgrade**

Once exposed, the sub-grade will be compacted to a minimum depth of 150mm. In areas where it is deemed not reasonable to obtain a Proctor value for the sub-grade, it shall be proof-rolled. If the sub-grade is spongy or moves under a concentrated load or during proof-rolling, it shall be reworked until hard and shows no movement.

### **3.4 Placement of Base**

For deep patches granular base course will be installed to the depth specified in Table 1 with the thickness of compacted lifts not exceeding 150mm.

For shallow patches, granular base course will be installed to ensure that the thickness of the asphalt layer does not exceed the designed thickness. Where the lift thickness of the granular base course is less than 75mm, the existing granular shall be scarified and the new base mixed and compacted with the existing granular to provide an homogenous layer.

Special attention is to be taken along the edges of the patches to ensure that proper compaction is achieved across the entire patch surface. Densities will be determined by the Standard Proctor Compaction test, or at the discretion of the Engineer, acceptance of the installation will be subject to proof-rolling. In the case of the latter, should the base be spongy or exhibit deflection under a concentrated load or during proof-rolling, it shall be reworked until no deflection is observed. The compacted base shall be free from all loose material and have a uniform, planar surface prior to applying the prime coat.

### **3.5            Tack Coat**

The saw cut joints will be tacked with a 150/200A asphalt cement. It will be acceptable for the asphalt cement to be reheated in a pail and applied with a broom or other applicator to ensure that the vertical edge of the joint is uniformly coated. Paving operations may commence immediately after tacking joints.

### **3.6            Asphalt Concrete Patching**

After the base has been prepared or installed, and the existing asphalt edges tacked, hot mix asphalt shall be supplied and placed.

Patches with a width of 2 metres or greater shall be paved with a paving machine. Patches with a width of less than 2 metres shall be paved with a paving machine, skidsteer loader, motor grader, or by hand at the Contractor's discretion.

The hot mix asphalt concrete shall be installed in accordance with Section 04015 - "Asphalt Concrete". Adjustment to the unit bid price for the supply and installation of hot mix asphalt concrete will be made for non-compliance with the specifications.

### **3.7            Slurry Seal Coat**

A slurry seal coat may be applied to patches with a width of less than 2 metres at the Engineer's discretion. The slurry seal coat shall be applied in accordance with Section 04030 - "Slurry Seal Coat", and shall extend 100 mm beyond the edges of the patch.

**04060-4      Measurement****4.1            Saw Cutting**

Will be measured by linear metre of asphalt cut.

**4.2            Asphalt Removal**

Will be measured by square metre of asphalt removed.

**4.3            Salvage Granular to Stockpile and Reinstall**

Salvaging granular to stockpile and reinstalling will be based on per cubic metre and shall be measured by the area of removal times the average depth.

**4.4            Excavation to Waste**

Excavation to waste will be based on per cubic metre and shall be measured by the area of removal times the average depth.

**4.5            Sub-grade Preparation**

Sub-grade preparation will be measured by square metre.

**4.6            Granular Base Course**

Granular base course will be measured by the tonne.

**4.7            Hot Mix Asphalt**

Hot mix asphalt shall be measured by the tonne.

**4.8            Slurry Seal Coat**

Slurry seal coat will be measured by the square metre of new asphalt covered with slurry seal.

**04060-5      Payment**

Payment adjustments will be made according to the adjustments outlined in Section 04010, and shall include thickness, density, stability and air voids. Patches tested will be at the discretion of the Engineer.

All items will be paid for as follows:

**5.1              Saw Cutting**

Saw cutting shall be paid for on the unit price per linear metre, and shall include all labour and equipment required to perform the work.

**5.2              Asphalt Removal**

Asphalt Removal shall be paid for on the unit price per square metre, and shall include all costs associated with removing, loading, hauling and disposal of the existing asphalt pavement at a location designated by the Engineer.

**5.3              Salvage Granular to Stockpile and Reinstall**

Salvage granular shall be paid for on the unit price per cubic metre, and will be full compensation for all labour, material and equipment required to excavate to the required depth, load and stockpile on site, and load, place, spread, water, aerate, compact and proof roll the salvaged material.

**5.4              Excavation to Waste**

Excavation to waste will be paid for on the unit price per cubic metre and will be full compensation for all labour, material and equipment required to excavate, load, haul and dispose of the material at a location designated by the Engineer.

**5.5              Prepare Subgrade**

Preparing subgrade will be paid for at the contract unit price per square metre and will include all costs associated with the labour, material and equipment required to shape and compact the subgrade. For shallow patching, this item will refer to any necessary compaction or reworking of the existing granular structure.



**5.6            Granular Base Course**

Payment will be at the contract unit price per tonne and will include all costs for labour, material and equipment required to supply, spread, water, aerate and compact the granular base course.

**5.7            Sealing Joints**

Sealing joints will be a subsidiary obligation of the contract.

**5.8            Hot Mix Asphalt Concrete**

Payment for hot mix asphalt concrete will be at the contract unit price per tonne and will be full compensation for all the labour, material and equipment required to supply, spread and compact the asphalt concrete mix.

**5.9            Slurry Seal Coat**

Payment for slurry seal coat will be at the contract unit price per square metre of new asphalt and will be full compensation for supplying the emulsified asphalt slurry seal aggregate and filler, and preparing and applying the slurry seal coat to the finished asphalt surface.

**End of Specification 04060**