

**CW 3250 – JOINT AND CRACK MAINTENANCE**

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## **CW 3250 – JOINT AND CRACK MAINTENANCE**

### **1. DESCRIPTION**

#### **1.1 General**

- .1 This specification covers the joint and crack sealing relating to the renewal or maintenance of existing pavements.

#### **1.3 Referenced Standard Construction Specifications**

- .1 CW 3410 – Asphaltic Concrete Pavement Works.
- .2 Approved products for Surface Works.

### **2. MATERIALS**

#### **2.1 Joint Sealant**

- .1 Supply low-modulus hot-poured elastic Type IV joint sealant in accordance with ASTM D6690-01.
- .2 Use only those materials listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Material Management Internet site at: <http://www.winnipeg.ca/matmgt/info.stm>

#### **2.2 Longitudinal Joint and Crack Filler (greater than 25 mm width)**

- .1 Supply longitudinal joint and crack filler for joints and cracks greater than 25 millimetres in width in accordance with the requirements of CW 3410.
- .2 Longitudinal joint and crack filler will be Type II Asphalt Material or other asphalt material approved by the Contract Administrator.

### **3. CONSTRUCTION METHODS**

#### **3.1 Joint Cleaning**

- .1 Clean pavement joints as directed by the Contract Administrator.
- .2 Remove all existing sealants, dirt and foreign material to a minimum depth of 20 millimetres below the pavement surface to the satisfaction of the Contract Administrator.
- .3 Remove dust and loose particles with an oil free air jet having sufficient volume and pressure, immediately before placement of the sealant material.

#### **3.2 Crack Cleaning**

- .1 Clean cracks larger than 2 millimetres and less than 25 millimetres in concrete and asphalt pavement surfaces as directed by the Contract Administrator.
- .2 Route cracks between 2 millimetres and 10 millimetres to a minimum width of 10 millimetres and depth of 20 millimetres below the pavement surface.

Optionally for asphalt pavements or overlays route all cracks less than 25 millimetres to a width of 25 – 30 millimetres and a depth of 12 millimetres below the pavement surface.

- .3 Clean cracks greater than 10 millimetres to 25 millimetres wide to a minimum depth of 20 millimetres to the satisfaction of the Contract Administrator.
- .4 Remove dust and loose particles with an oil free air jet having sufficient volume and pressure, immediately before placement of the sealant material.

### **3.3 Joint and Crack Sealing**

- .1 Place joint sealant in joints and cracks for exposed concrete pavements even with the pavement surface.
- .2 For asphalt pavements or overlays seal cracks as follows:  
  
For cracks routed to a width of 10 millimetres, place joint sealant 2 millimetres to 4 millimetres above the pavement surface to provide a band-aid seal over the crack. Upon completion, the sealant will overlap either side of the crack by a minimum 40 millimetres.  
  
For cracks routed to a width of 25 – 30 millimetres, place joint sealant so that upon cooling, the sealant will be recessed approximately 2 millimetres below the pavement surface.
- .3 Fill from the bottom up utilizing an approved mechanical pressure joint filling system equipped with continuous agitation.
- .4 Apply joint sealant in two operations for wide or deep openings to minimize shrinkage.
- .5 Avoid overfilling and spilling of sealant on the pavement surface.
- .6 Complete sealing when surface is dry. Place sealant at ambient temperature of at least 4°C and rising.
- .7 No traffic or construction equipment will be allowed to travel over the sealed joints or cracks until such time as the sealant has cooled to atmospheric temperature. Apply cement dusting to sealed joints and cracks where early opening to traffic is required.
- .8 Reheating of unused joint sealants will not be permitted.
- .9 Remove off site all debris from the routing and cleaning operations to the satisfaction of the Contract Administrator.

### **3.4 Longitudinal Joint and Crack Filling (greater than 25 mm width)**

- .1 Remove all dirt and foreign material to a depth of 60 millimetres below the pavement surface to the satisfaction of the Contract Administrator.
- .2 Remove dust and loose particles with an oil free air jet having sufficient volume and pressure, immediately before placement of filler material.
- .3 Place and compact longitudinal joint and crack filler to match the pavement surface to the satisfaction of the Contract Administrator.
- .4 Remove off site all debris from the filling and cleaning operations to the satisfaction of the Contract Administrator.

### **3.5 Reflective Crack Maintenance**

- .1 Route and seal cracks in asphalt pavements and overlays with a two year warranty period in the first and second construction seasons following placement as directed by the Contract Administrator.
- .2 Route and seal cracks in asphalt overlays with a one year warranty period in the construction season following placement as directed by the Contract Administrator.

- .3 Complete reflective crack maintenance prior to the expiration of the warranty period or the date indicated in the contract documents.
- .4 Route and clean reflective cracks in accordance with Section 3.2 of this specification.
- .5 Place joint sealant in accordance with Section 3.3 of this specification.
- .6 Remove off site all debris from the routing and cleaning operations to the satisfaction of the Contract Administrator.

#### **4. MEASUREMENT AND PAYMENT**

##### **4.1 Joint Sealing**

- .1 Joint sealing of existing concrete pavements will be measured on a length basis and paid for at the Contract Unit Price per metre for “Joint Sealing”. The length to be paid for will be the total number of metres of pavement joints cleaned and sealed in accordance with this specification, accepted and measured by the Contract Administrator.
- .2 Cement dusting of the sealed joints where applicable will be included in payment for “Joint Sealing”.

##### **4.2 Crack Sealing**

- .1 Crack sealing of existing pavements will be measured on a length basis and paid for at the Contract Unit Price per metre for the “Items of Work” listed here below. The length to be paid for will be the total number of metres of cracks routed or cleaned and sealed in accordance with this specification, accepted and measured by the Contract Administrator.

###### **Items of Work:**

###### **Crack Sealing**

- i.) 2 mm to 10 mm Wide
  - ii.) Greater than 10 mm to 25 mm Wide
- .2 Cement dusting of sealed cracks where applicable will be included in payment for the “Items of Works” listed for Crack Sealing.

##### **4.3 Longitudinal Joint and Crack Filling (greater than 25 mm width)**

- .1 Longitudinal joint and crack filling greater than 25 mm wide will be measured on a length basis and paid for at the Contract Unit Price per metre for “Longitudinal Joint and Crack Filling (greater than 25 mm width)”. The length to be paid for will be the total number of metres of longitudinal joints and cracks greater than 25 mm wide that are cleaned and filled in accordance with this specification, accepted and measured by the Contract Administrator.

##### **4.4 Reflective Crack Sealing During the Warranty Period**

- .1 Reflective crack sealing of asphalt pavements and overlays during the warranty period will be measured on a length basis and paid for at the Contract Unit Price per metre for “Reflective Crack Maintenance”. The length to be paid for will be the total number of metres of reflective cracks routed and sealed in accordance with this specification, accepted and measured by the Contract Administrator.
- .2 Cement dusting of sealed cracks where applicable will be included in payment for “Reflective Crack Maintenance”.