

**AMENDMENTS TO OPSS 914 (SEPT 88) –
CONSTRUCTION SPECIFICATION FOR WATERPROOFING BRIDGE DECKS -
ASPHALTIC MEMBRANE ¹**

OPSS 914.03 is amended by the replacement of the definition of the term “lot” with the following:

Lot - means a single bridge deck, or part of a bridge deck, with a surface of 900 m² or less. Decks larger than 900 m² shall be divided into the least number of equal sized lots of 900 m² or less. Decks split longitudinally for staged construction shall be treated as separate decks. The exact limits of each lot will be determined by the Commissioner.

OPSS 914.05.02 is amended with the addition of the following:

In addition to the requirements of OPSS 1213 the waterproofing material shall have a maximum cone penetration of 120 mm at 50°C and no flow at 60°C. The material supplier must certify that the hot applied rubberized asphalt material meets these two (2) requirements.

OPSS 914.05.03 is amended by the addition of the following:

The reinforcement shall be polyester spunbonded fabric “Remay 2016” as supplied by Hydrotech Membrane Corporation or approved equal.

OPSS 914.05.05 is superseded by:

Protection board shall conform to OPSS 1215, March 1998, amended as follows:

The width of the board shall be 1100 mm ± 200 mm and the length shall be 1500 mm ± 200 mm.

OPSS 914.07.02 is amended by the addition of the following subsection:

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- 1. All references to Ops specifications that have been amended (as noted in LIST T1) are superseded by references to the replacement City of Toronto specifications (as given in LIST T1).**

914.07.02.01

The abrasive used to blast clean the deck shall be low free silica.

914.07.02.04 Curing

The deck concrete shall be allowed to air cure a minimum of three (3) days prior to the application of waterproofing.

OPSS 914.07.03.01 is amended by the addition of the following:

The tack coat shall be applied only when the concrete is dry and clean and when the air and concrete surface temperatures are above 2°C.

OPSS 914.07.04.01 is amended by the addition of the following:

The polyester fabric shall be installed and lapped in accordance with the manufacturer's and/or supplier's specification. The polyester fabric shall also be centred on the construction joint and shall be turned up a minimum of 50 mm on all vertical surfaces.

OPSS 914.07.06.01 The first paragraph is amended by deleting the following:

The protection boards shall be placed with edges overlapping 12 mm ± 6 mm both longitudinally and transversely.

and replacing it with:

The protection boards shall be placed with edges overlapping 25 mm both longitudinally and transversely.

OPSS 914.07.07.01 The first and second paragraphs are replaced by the following:

The Contractor shall rout or saw cut the asphalt surface to a depth of 40 mm. The joints shall have a width of not less than 12 mm or more than 20 mm and have roughened faces as near as possible perpendicular to the asphalt surface. The joints at expansion joints are to be routed and not sawn to a width of 12 mm. The joints shall be blown clean with compressed air to clean all dust and debris.

OPSS 914.08 is amended as follows:

Paragraph (V) of clause 914.08.02.02 of OPSS 914 is amended by the addition of the following:

The re-test request must be submitted on a form provided by the Commissioner.

Section 914.08 is amended by the addition of the following subsection:

The Commissioner will determine the acceptability of the waterproofing by determining the membrane quality on a lot-by-lot basis.

914.08.03.01 Sampling and Testing of Membrane Quality

One 4 L sample of membrane, from each lot, shall be drawn by the Contractor from the heating and mixing kettle and placed in a container supplied by the Commissioner. The time of sampling will be determined by the Commissioner and will be based on random numbers.

The sample will be delivered by the Commissioner to a testing laboratory. The sample will be split into two approximately equal parts; one part will be tested immediately and the other will be retained for possible re-testing. If the tested part passes all criteria the remaining half will be discarded. If the tested part fails any of the specification requirements, the retained part will be kept for 30 calendar days after the Contractor has been notified of the test results. If the Contractor requests re-testing within this time period, the retained part will be used for this purpose, otherwise it will be discarded.

The criteria to be tested will be the cone penetration at 50°C and the flow at 60°C.

914.08.03.02 Acceptance Determination

The decision to accept the quality of the waterproofing membrane will be based on the results of tests performed in conformance with OPSS 1213 and this special provision.

Membrane quality will be considered acceptable if all specification requirements for the lot are met, or it will be considered borderline, and subject to a payment adjustment as outlined in subsection 914.10.06, if the total number of points resulting from Table 1 in this special provision are less than or equal to 25, or will be considered rejectable if the total number of adjustment points are greater than 25.

914.08.03.02.01 Re-Testing for Quality

The Contractor may, in writing, request re-testing of any sample which results in a price adjustment or rejection of a lot within 30 calendar days of receiving notification of rejection or price adjustment of the lot. The results of the re-test shall be used for acceptance and shall be binding on both parties. If the re-test results in either a price reduction or rejection of the lot, the Contractor shall be charged \$800.00 for the re-testing. If the re-testing results in the material passing all test criteria, no charge will be levied against the Contractor.

OPSS 914.09.02.01 is superseded by:

Measurement for this item shall be in square metres of deck area acceptably waterproofed as measured on site by the Commissioner. No extra measurement shall be made for material which is turned up on vertical surfaces, and for lapping.

The measurement shall include those areas over which polyester fabric reinforcing is incorporated in the waterproofing membrane.

OPSS 914.09.02.02 is superseded by:

Measurement for payment shall be in square metres as measured on site by the Commissioner with no allowance for overlaps and vertical turn-up.

The unit price bid for these items shall include the supply and installation of the polyester fabric reinforcing mesh and one layer of asphalt membrane. The surface preparation, tack coat, the second coat of asphalt membrane and protection board shall be paid for under the “Waterproofing Membrane” item.

OPSS 914.09.02.03 is superseded by:

Hot-poured rubberized asphalt joints shall be paid for at the unit price bid in the tender form per linear metre for hot-poured rubberized asphalt joints in asphalt surface.

Where no separate item is provided in the tender form, payment for this work shall be included in the unit price bid for the asphalt surfacing.

OPSS 914.10 is amended by the addition of the following subsections:

914.10.06 Payment Adjustment Due to Membrane Quality Deficiency

Quality Payment Adjustment Factors are calculated as follows:

- (a) If the sample meets all test criteria outlined in Table 1 of this amendment, the Commissioner will assign a quality adjustment factor of 1.00.

- (b) If the sample fails one or more test criteria, the adjustment points outlined in Table 1 for each failed criteria shall be totalled. The Commissioner will sign a quality adjustment factor which shall be 100 minus the total of all of the adjustment points and the result divided by 100.
- (c) If the sample fails one or more criteria, the adjustment points outlined in Table 1 for each failed criteria will be totalled and if the total number of points exceeds 25, the Owner will not pay the Contractor for the lot regardless of the adjustment factor for thickness.

914.10.07 Calculation of Total Adjusted Payment

The total adjusted payment for the lot will be based on the quality of the waterproofing membrane, and it is calculated as follows: The contract price for the lot shall be multiplied by the quality adjustment factor.

Payment at the total adjusted contract price for the tender item Waterproofing Membrane shall be full compensation for all labour, equipment and materials to do the work for the lot.

Table 1

Test	Specification Limits	Adjustment Points
Cone Penetration at 25°C	Max. 110	0.4 per 1
Cone Penetration at 50°C	Max. 120	0.4 per 1
Flow at 60°C	Max. 0	0.5 per 1
Low temperature flexibility at -25°C	Pass	5.0 for Failure
Toughness	Min. 5.5	0.5 per 0.1
Toughness/Peak Load	Min. 0.040	0.5 per 0.001