

304 MUNI CONSTRUCTION SPECIFICATION FOR SINGLE AND DOUBLE SURFACE TREATMENT**304.05 Materials****304.05.01 Aggregates****ADD in the following:**

Gradation for Aggregates for Single Surface Treatment shall be Class 4 and Double Surface Treatment shall be Class 2 as per OPSS.MUNI 1006, unless otherwise specified.

304.05.02 Binders**DELETE in its entirety and REPLACE with:**

Binder used for single or double treatments, shall be HF-150S and as per OPSS.MUNI 1103, unless otherwise specified

304.07 Construction**ADD in the following:**

The road width shall conform to GSSD 206.010, Standard Road Section – Rural unless otherwise specified.

304.07.01 Operational Constraints**DELETE paragraphs 3, 4 and 5 and REPLACE with the following:**

Surface treatment shall not be carried out prior to June 1st and shall be completed no later than September 1st of the same year.

ADD in the following:**304.07.01.01 Hand-Placed Surface Treatment**

This item shall include the supply and hand-placement of a single application of bituminous binder as specified for, Single and Double Surface Treatment.

This item is intended to be used for road repair and pothole patching in preparation of Single Surface Treatment and driveway tie-ins for double surface treatment, as agreed to by the General Manager.

In areas where road edge repair is required to maintain uniform road width, Granular 'A' shall be placed flush with the edges of the road and the binder shall be applied by hand at the application rate indicated. Payment shall be made by the square metre. Granular 'A' shall be paid under the appropriate item.

304.07.02 Sampling

304.07.02.01 Binder

ADD in the following:

The General Manager shall deliver the QA and Referee Samples to the appropriate laboratory in a condition that is suitable for testing. The Quality Assurance laboratory will be determined by the General Manager. Contractor is responsible to take the QA and Referee Samples in the presence of the General Manager's designate.

Binder field samples shall be provided for testing purposes as specified in OPSS.MUNI 1103. Contractor is responsible to provide a minimum of 48 hours notification to the General Manager's designate for binder sampling.

A lot shall be deemed to be the quantity of work completed with a shipment (1 truck tank) of binder. A sample of binder shall be taken at the job site from each shipment of binder and this sample shall represent a lot. Sample containers shall be supplied and filled (by the contractor), leaving only sufficient space to allow for liquid expansion. The sample shall be taken from a sampling spigot on the transfer line, or, if one is available, from the end of the transfer. Each sample shall be taken after sufficient material has been drawn from the truck tank to purge line transfer line.

304.07.02.02 Aggregates

DELETE in it's entirety and REPLACE with the following:

The Contractor shall provide all materials required for aggregate samples for testing purposes as specified in OPSS.MUNI 1006.

304.07.03 Determination of Binder and Aggregates Application Rate

304.07.03.01 General

DELETE Paragraph 1 and ADD in the following:

For Single Surface Treatment, the binder shall be sprayed at 1.3 kg/m².

For Double Surface Treatment, the first application of binder shall be sprayed directly on the prepared granular surface at 1.65 kg/m². The second application of binder shall be sprayed at 1.55 kg/m² on the first course before the aggregate has been loosened by traffic.

The Class 4 aggregate is to be placed at a rate of 11 kg/m², after the application of binder.

The Class 2 aggregate is to be placed at a rate of 17 kg/m², after the application of binder.

The following equipment shall be supplied for the determination of binder and aggregate application rates:

- a) A portable electronic balance with the following characteristics:
 - i) Five digit display
 - ii) Accuracy to 0.1%
 - iii) Capacity of 10 kg
 - iv) Minimum platform size of 300 mm by 400 mm

304-02

- b) Sheet metal trays, each 500 mm x 500 mm inside dimension +/- 1 mm, with sides 7 mm in height +/- 1 mm. The sheet metal shall be a minimum of 18 gauge (approximately 1.3 mm) with soldered corners.
- c) One 5 kg test mass.
- d) A carpenter's level for leveling the balance.

304.07.03.02 Acceptance of Binder Application Rate

ADD in the following:

The binder application rate is acceptable when the rate is within the tolerance of +/- 5% of the specified rate.

The binder application rate is unacceptable when the test result is outside the tolerance of +/- 5% of the desired rate and work shall stop. Field testing shall be repeated in a maximum of 50 m sections until two consecutive acceptable tests or four unacceptable test results are obtained.

When two consecutive acceptable binder test results are obtained, work may proceed. When four unacceptable binder test results are obtained before two consecutive acceptable test results, the distributor shall be permanently removed from the Working Areas.

304.07.03.03 Acceptance of Aggregate Application Rate

ADD in the following:

The aggregate application rate is acceptable when the rate of the aggregate application is within the tolerance of +/- 10% of the specified rate.

The aggregate application rate is unacceptable when the test result is outside of the tolerance of +/- 10% of the desired rate and work shall stop. Work may proceed when the application rate has been adjusted to the desired rate.

304.07.03.04 Application Rate Frequency

Field tests shall be carried out by the Contractor to determine the binder application rates:

- a) At the start of each Day's work. If the Contractor provides two distributors, the binder application rate of one distributor shall be determined at this time.
- b) When approximately half of the total Day's production is completed. If the Contractor provides two distributors, the binder application rate of the second distributor shall be determined at this time.

Field tests shall be carried out by the Contractor to determine the aggregate application rates at the start of each Day's work.

304.07.03.05 Procedure

Each section of road used to obtain the application rates shall be a maximum of 50 m in length. Field sampling shall be conducted in the presence of the General Manager, to determine the binder and aggregate application rates as follows:

- a) Set up and level the balance in a firm location protected from the wind.
- b) Check the tolerance of the balance with the 5 kg test mass.

- c) Obtain the tare mass (in kg to three decimal places) of two clean trays and record.
- d) Place the two trays in the centre of the lane being treated approximately 30 cm apart and parallel to the centerline.
- e) Remove the first tray after the binder has been sprayed and before the aggregate has been applied.
- f) Remove the second tray after the binder and aggregate have been applied and before rolling.
- g) Obtain and record the gross mass (in kg to three decimal places) of each tray.
- h) Carefully patch the marks left by the trays using the binder and aggregate specified in the Contract Documents. The patches shall be rolled.
- i) Clean the trays for reuse.

304.07.03.06 Calculations

The following calculation shall be performed in the presence of the Contract Administrator:

- a) Obtain the net mass of the binder applied to the first tray.
 $\text{Net Mass of Binder} = \text{Gross Mass} - \text{Tare Mass}$
- b) Calculate the binder application rate correct to two decimal places.
 $\text{Binder Application Rate (kg/m}^2\text{)} = \text{Net Mass of Binder} \times 4$
- c) Obtain the net mass of binder and aggregate on the second tray.
 $\text{Net Mass of Binder and Aggregate} = \text{Gross Mass} - \text{Tare Mass}$
- d) Obtain the net mass of aggregate on the second tray.
 $\text{Net Mass of Aggregate} = \text{Net Mass of Binder and Aggregate (from 3 above)} - \text{Net Mass of Binder (from 1 above)}$
- e) Calculate the aggregate application rate correct to one decimal place. Aggregate
 $\text{Application Rate (kg/m}^2\text{)} = \text{Net Mass of Aggregate (from 4 above)} \times 4$
- f) The calculation shall be promptly reported to the Contract Administrator.

304.07.04 Surface Preparation

Existing bituminous surfaces shall be clean and free of all debris and standing water before application of binder.

Where a binder is to be applied on a granular surface, the surface shall be free of standing water and shall be prepared by dampening, fine grading, and compacting immediately prior to the application of the binder. The surface shall be finish rolled to ensure a compacted smooth and float free surface.

304-04

304.09 Measurement for Payment

DELETE in its entirety and REPLACE with the following:

304.09.01 Actual Measurement

Payment will include both binder and aggregate, and shall be paid by the square metre.

304.10 Basis of Payment

DELETE in its entirety and REPLACE with the following:

**304.10.01 Single Surface Treatment – Item
Double Surface Treatment - 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.

Damaged areas requiring repair prior to the acceptance of the work shall be repaired by the Contractor at no extra cost to the General Manager.

304-05