

**CITY OF WHITEHORSE SERVICING STANDARDS MANUAL
PART 3 – CONSTRUCTION SPECIFICATIONS
SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION**

TABLE OF CONTENTS

SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION.....	2
3.23.1 DESCRIPTION	2
3.23.2 MATERIAL CERTIFICATION	2
3.23.3 PLANT INSPECTION	2
3.23.4 STORAGE AND HANDLING OF MATERIALS.....	2
3.23.5 PRODUCT ACCEPTANCE	3
3.23.6 SAMPLING DEVICES	3
3.23.7 SAMPLING	4
3.23.8 PAYMENT REDUCTION.....	4
3.23.9 MATERIALS.....	4
3.23.10 TEMPERATURE.....	5

SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION

3.23.1 DESCRIPTION

This section specifies requirements for the production and supply and delivery of asphalt emulsion.

3.23.2 MATERIAL CERTIFICATION

At least four (4) weeks prior to commencing work, submit to the Engineer, details of the asphalt supplier and location of supplier's plant and emulsion plant to be used for production of material. Do not change supplier without Engineer's written approval.

Prior to delivery of emulsion and at any subsequent time upon request, submit manufacturer's test data and certification that asphalt emulsion meets requirements of this section.

The supplier must submit to the Engineer, prior to supplying any material, Material Safety Data Sheets for the finished product and all component products.

If the supplier elects to incorporate non-traditional material components such as, but not limited to, crude oil, waste products and industrial or manufacturing by-products in the High Float emulsified asphalt, the Engineer must be advised in writing before any material is supplied.

3.23.3 PLANT INSPECTION

The Engineer may undertake the inspection of materials at the source. Manufacturing plants may be inspected periodically for compliance with suitable manufacturing methods. Material samples will be obtained for laboratory testing to check for compliance with quality requirements.

- The Engineer is to have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.
- The Engineer is to have full entry at all times to such parts of the plant that deal with the manufacture or production of the materials being furnished.
- Advise the inspector or inspection agency a minimum of 48 hours prior to beginning work on any item requiring inspection. All materials for which the Engineer has requested plant inspection and which are produced without such inspection will be considered unacceptable.
- The Engineer reserves the right to retest all materials which have been tested at the source of supply, prior to incorporation into the work, and to reject or reduce payment on all materials which, when retested, do not meet the requirements of the specifications.

3.23.4 STORAGE AND HANDLING OF MATERIALS

Store materials to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Locate stored materials so as to facilitate their prompt inspection.

Handle all materials in such a manner to preserve their quality and fitness for the work. Transport materials to the designated area in vehicles so constructed as to prevent damage or loss of material.

CITY OF WHITEHORSE SERVICING STANDARDS MANUAL
PART 3 – CONSTRUCTION SPECIFICATIONS
SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION

Ensure that all shipments be made in clean, uncontaminated tanks.

Ensure that all shipments are made in tanks with adequate insulation to provide delivery of material within specified temperature range.

3.23.5 PRODUCT ACCEPTANCE

Asphalt emulsion, received and stored in the Contractor's storage tanks, that is showing signs of separation is to be removed and disposed of at the Contractor's expense and no payment will be made for those materials.

Asphalt emulsion received may be sampled and tested prior to off-loading to ensure that the product is homogeneous and of uniform consistency, free from visible lumps. Testing will be in accordance with paragraph 1.5.2.1. The emulsion supplier will be notified when retained lumps are identified in the sample. Asphalt emulsion which fails the retained lump test is to, at the request of the Engineer, be removed and disposed of at the Contractor's expense and no payment will be made for such material.

RETAINED LUMP TEST:

- Sampling is to be as outlined in paragraph 1.7.
- Pour a 1 litre sample at delivery temperature through a 1000 µm mesh sieve fitted in a 76.2 mm diameter frame and allow to drain for 30 minutes. At the completion of time, observe any retained lumps for type, size and quantity. Failure will be indicated when retained lumps are excessive (more than ten per test) and are of combined type, size and quantity adversely affecting the material consistency and handling properties.
- Asphalt emulsion received may be tested to ensure compliance with non-Newtonian flow characteristics. Testing will be in accordance with paragraph 1.5.3.1. The emulsion supplier will be notified when penetration samples subjected to the flow characteristic testing criteria exhibit flow. Asphalt emulsion in storage that fails the actual flow characteristic test is to, at the request of the Engineer, be removed and disposed of at the Contractor's expense. No payment will be made for material that fails the test.
 - **Flow characteristic test:**
 - Sampling is to be as outlined in paragraph 1.7.
 - Preparation of the test sample is to conform to the requirements for penetration testing.
 - Weigh the prepared sample and place container on its side on a level surface for a period of three hours. At completion of specified time trim off any material which has flowed from the container with a slightly heated knife or spatula. Weigh the remaining residue and determine the percent residue loss. Failure will be determined as percent residue loss greater than 5% by weight.

3.23.6 SAMPLING DEVICES

Equip each tank on all tank trucks with submerged asphalt sampling device in accordance with Fig. 1 ASTM D140, however, devices similar in principle may be approved by Engineer.

Ensure all sampling devices are free and operable when trucks arrive on site.

CITY OF WHITEHORSE SERVICING STANDARDS MANUAL
PART 3 – CONSTRUCTION SPECIFICATIONS
SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION

3.23.7 SAMPLING

All truck loads will be sampled by the Engineer prior to off-loading.

Where delivery is made using multiple tank carrier, any, or all tanks may be sampled.

Discharge at least five (5) litres of asphalt emulsion through sampling device immediately before a test sample is taken.

When delivery is beyond Whitehorse, back haul samples and deliver them to the Whitehorse Weigh Scales upon the request of the Engineer.

3.23.8 PAYMENT REDUCTION

The City of Whitehorse will have tests performed on asphalt emulsion in accordance with standard methods specified.

Material to be accepted in full or in part and may be subject to a payment reduction on basis of results of tests made on samples selected and tested by Engineer. Engineer has option to do any one of, or any combination of tests listed on Form EA-1. Payment reduction will only be assessed, on the basis of out of specification results on those tests actually performed, within four (4) weeks of sampling date.

Loads on which no tests are performed, or where tests have not been made within four (4) weeks of sampling date, will be accepted without payment reduction. Full price will be paid for these loads.

If a test result fails to meet specification, a second test will be done on another portion of same sample, and results averaged to assess penalty. Should duplicate test results differ by more than acceptable A.S.T.M. repeatability as shown in test procedure, then average of test values is not to be used and instead test result numerically nearest specification requirement is to govern.

Reductions in payment for the load from which the sample was taken will be calculated by means of factors shown in Form EA-1. The number of units outside specification requirements will be multiplied by the multiplier factor to get number of adjustment points. The total number of adjustment points will be divided by 100 to get percent pay reduction assessed. "Units" means measurement unit as shown in Table 1 of CGSB CAN2-16.5.

Any payment reduction assessed will apply only to the load from which sample was taken.

No payment reductions will be assessed to loads when test results indicate percentage adjustment of less than 2.0% total pay reduction.

No payment will be made for loads when test results of samples indicate a percentage adjustment of greater than 30.0% total pay reduction.

3.23.9 MATERIALS

ASPHALT EMULSION, HF-350S

- To conform to CGSB CAN 2-16.5, type HF-350S Emulsified Asphalt.

CITY OF WHITEHORSE SERVICING STANDARDS MANUAL
PART 3 – CONSTRUCTION SPECIFICATIONS
SECTION 3.23 – SUPPLY AND DELIVERY OF ASPHALT EMULSION

ASPHALT EMULSION, HF-250S

To conform to CGSB CAN 2-16.5, type HF-250S Emulsified Asphalt, with the following exceptions:

- Saybolt Furol Viscosity at 50°C, measured in seconds, is to be a minimum of 75 s, and a maximum of 150 s.
- Demulsibility, 50 ml, 5.55 g/L, CaCl₂, (% by mass) is to be a minimum of 65%.
- Penetration at 25°C (0.1 mm), minimum of 250 and a maximum of 400.

ASPHALT EMULSION, HF-150S

- To conform to CGSB CAN 2-16.5, Type HF-150S Emulsified Asphalt.

Reference to CGSB CAN 2-16.5 is to be the most current year.

3.23.10 TEMPERATURE

Deliver all asphalt emulsion to the specified site at a temperature between 50°C and 80°C.