

## **INCLUDE IN ALL 2017 AND LATER CONSTRUCTION PROGRAM PROJECTS WITH A PAVING COMPONENT**

### **AMENDMENT TO SPECIFICATION 3.50 ASPHALT CONCRETE PAVEMENT – EPS, RE: REQUIREMENTS FOR MOISTURE SUSCEPTIBILITY TESTING**

- (i) The contents of Subsection 3.50.3.2, **Requirements for Mix Design**, are replaced in their entirety with the following:

*Asphalt mix designs shall follow the Marshall method of Mix Design as described in design procedure TLT-301. The mix design, at the Design Asphalt Content, shall meet the requirements shown in Table 3.50.3.2 for the Asphalt Concrete Mix Type specified, and the following.*

*Mixes, both untreated and treated with an anti-strip additive, shall be evaluated for moisture susceptibility in accordance with AASHTO test procedure T-283, Resistance of Compacted Bituminous Mixture to Moisture Induced Damage, using either gyratory or Marshall compacted specimens. All specimens shall be formed using the same procedure. For projects with more than one mix type using the same aggregate source and asphalt supplier the Contractor shall complete the AASHTO T-283 testing, as a minimum, using the mix type with the largest contract tonnage. All mix design submissions shall include the test results as outlined in test procedure T-283, including the visual estimate of the degree of moisture damage.*

*All asphalt mixes shall be treated with a liquid anti-strip additive regardless of test results reported for evaluation of moisture susceptibility on the untreated mixture. The minimum dosage rate is based upon the supplier's recommendation and shall be 0.3% for Group A anti-strip additives and 0.05% for Group B additive products as identified on the Alberta Transportation Products List. Dosage rates greater than 0.5% by weight of virgin binder will only be allowed if the Contractor completes rheology testing using the AASHTO R 29 Standard Practice for Grading or Verifying the Performance Grade (PG) of an Asphalt Binder to confirm that the treated virgin binder meets the specified PG criteria. Dosage rates are by weight of virgin asphalt binder.*

*The treated mix will be considered suitable for mix production if the TSR value is 60% or higher, and is improved over the untreated TSR value. If the TSR value for the treated mix is less than 60% or less than the untreated TSR value, the mix will be considered unsuitable and shall not be used for mix production.*

*Liquid anti-strip additives acceptable for use are listed on the Alberta Transportation Products List. Liquid anti-strip additives which do not increase the TSR value when compared to the untreated mix shall not be used. Warm Mix Asphalt (WMA) chemical products that display anti-stripping characteristics and are listed on the Alberta Transportation Products List will be treated as a liquid anti-strip additive for payment purposes.*

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*The Contractor shall include the following information with the mix design submission:*

- *Full details on the type of liquid anti-strip additive proposed for use; including product name, manufacturer and supplier*
- *Additive rate*
- *TSR values for the treated and untreated mixes*
- *The proposed method for incorporating the additive into the plant produced mix.*
- *When the liquid anti-strip is not added by the asphalt supplier, the Contractor shall provide documentation from the asphalt binder supplier that the proposed anti-strip additive is compatible with the asphalt crude source and grade contained in the mix design when added within the dosage range recommended by the additive supplier.*

*In lieu of using a liquid anti-strip additive, the Contractor may use hydrated lime at an additive rate of 1.4% by weight of dry aggregate. Hydrated lime shall meet the requirements of AASHTO M303 Lime for Asphalt Mixtures. If elected for use, the Contractor shall include details of his proposed procedure for uniformly incorporating hydrated lime into the asphalt mix as part of the mix design submission.*

*The Contractor shall supply the Consultant with copies of all invoices or bills of lading for asphalt mix treated by the supplier, or for anti-strip additive or lime added by the Contractor.*

*All costs associated with the supply and incorporation of liquid anti-strip additive or hydrated lime into the asphalt concrete pavement mix, regardless of whether the additives are incorporated by the asphalt supplier or the Contractor, shall be included in the unit prices bid for "Asphalt Concrete Pavement – EPS" for the applicable asphalt Mix Type. No separate or additional payment will be made.*

- (ii) The following is added after the last paragraph of Subsection 3.50.5.1.2, Mixing Plant:

*When liquid anti-strip additive is added to the asphalt cement at the mixing plant, the additive shall be introduced through a separate, calibrated pumping and metering system electronically interlocked with the operating controls of the mixing plant. The Contractor shall have a procedure in-place enabling the safe sampling of treated asphalt including, where practicable, an in-line valve and sampling system.*

*When hydrated lime is used, the feed system shall be calibrated to provide a consistent and accurate feed of dry hydrated lime into the mixing plant prior to the asphalt cement injection point. The feed system shall be synchronized to the rate of aggregate feed, and shall be electronically interlocked with the operating controls of the mixing plant. Other methods of incorporating lime into the*

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*aggregate feed or stockpile will be subject to approval by the Consultant prior to implementation.*

*The Contractor shall have monitoring procedures in-place to provide daily "bulk" measurements of all materials used; including anti-strip and warm mix additives, as applicable, to verify that usage quantities match targeted values. The Contractor shall provide daily bulk quantity checks to the Consultant as part of the QC inspection reports.*