**Amendments to Specification 3.50, Asphalt Concrete Pavement (EPS), Re: Quality Control Testing Using Maximum Specific Gravity Testing of Hot Mix Asphalt**

1. Table 3.50.4.2 in Subsection 3.50.4.2**, Methods of Testing for Acceptance and Appeal Testing,** is replaced in its entirety with the following:

***Table 3.50.4.2***

***Test Methods on Managed QA Projects***

|  | ***Test Description*** | ***Test Method*** |
| --- | --- | --- |
| *1* | *Sampling Mixes* | *ATT-37* |
| *2* | *Coring* | *ATT-5* |
| *3* | *Extraction* | *ATT-12* |
| *4* | *Correction Factor, Extracted Asphalt Content* | *ATT-12 Part III* |
| *5* | *Percent Fracture* | *ATT-50* |
| *6* | *Sieve Analysis* | *ATT-26* |
| *7* | *Density, Immersion Method, Waxed Asphalt Concrete Specimens*  | *ATT-6* |
| *8* | *Density, Immersion Method, Saturated Surface Dry Asphalt Concrete Specimens* | *ATT-7* |
| *9* | *Density, Using Automated Vacuum Sealing Method*  | *AASHTO T331* |
| *10* | *Voids Calculations, Asphalt Concrete Specimens* | *ATT-36* |
| *11* | *Percent Compaction, Asphalt Concrete Pavement*  | *ATT-67* |
| *12* | *Forming Marshall Specimens, Field Method* | *ATT-13* |
| *13* | *Moisture Content, Oven Method Asphalt Concrete Mixes* | *ATT-15* |
| *14* | *Smoothness of Pavements using IRI Criteria*  | *See Special Provisions* |
| *15* | *Stratified Random Test Sites for A.C.P. Projects* | *ATT-56* |
| *16* | *Appeal Testing, Asphalt Content, Density and Gradation* | *ATT-68* |
| *17* | *Asphalt Content, Ignition Method* | *ATT-74* |
| *18* | *Correction Factor, Ignition Asphalt Content* | *ATT-74 Part II* |
| *19* | *Maximum Specific Gravity of Bituminous Mixes* | *ASTM 2041* |
| ***Additional Test Methods for all QC or QA Acceptance Lots***  |
| *20* | *Asphalt Content* | *AASHTO T164, T287 or ATT-12 or ATT-74*  |

*NOTES:*

*- In all test methods used as reference in this specification, metric sieves as specified in Canadian General Standards Board Specification 8-GP-2M shall be substituted for any other specified wire cloth sieves in accordance with Specification 3.2, Aggregate Production and Stockpiling.*

*- In all cases the latest amendment or revision current at the closing date of the Tender is implied when reference is made to one of the above standards in the Specification.*

1. Table 3.50.4.3 in Subsection 3.50.4.3**, Quality Control Testing,** is replaced in its entirety with the following:

***Table 3.50.4.3***

***Quality Control Testing Requirements – Managed QA Testing Projects***

| ***Test*** | ***Standard*** | ***Minimum Frequency*** |
| --- | --- | --- |
| ***AGGREGATE PRODUCTION*** |  | *See Specification 3.2* |
| ***ASPHALT MIX PLANT***  |
| *Calibration* | *ATT-17* | *Once per project or as required* |
| *Inspection* | *ATT-16* | *(2)* |
| ***SAMPLES*** |
| *Asphalt Cement* | *ATT-42* | *See Specification 5.7* |
| *Tack, Prime and Fog Materials* | *ATT-42* | *See Specification 5.7* |
| *Cold Feed Aggregate* | *ATT-38* |  |
| *Mix* | *ATT-37* | *(2)* |
| *QA Cores - Stratified Random Test Sites Chosen By The Consultant* | *ATT-56* | *One per segment for each Lot.**One per segment for selected Lots as directed by the Consultant.* |
| * + 1. *QA Cores for Pavement Density*
 | *ATT-5* |
| * + 1. *QA Cores for Asphalt Content and Gradation*
 | *ATT-5* |
| ***TESTS WITH SPECIFIED MINIMUM FREQUENCIES*** |
| *Mix Asphalt Content* | *AASHTO T164, T287 or ATT-12 or AT-74* | *(2)* |
| *Correction Factors* | *ATT-12, Part III or ATT-74, Part II* | *As Required* |
| *Mix Moisture Content* | *ATT-15* | *(2)* |
| *Aggregate Sieve Analysis* | *ATT-26* | *(2)* |
| *Pavement Segregation* | *Segregation Rating Manual* | *Each Lot* |
| ***TESTS WITH NO SPECIFIED MINIMUM FREQUENCIES*** |
| *Field Formed Marshall Briquettes* | *ATT-13* | *(1)* |
| *Density Immersion Method, Saturated Surface Dry* | *ATT-7* | *(1)* |
| *Maximum Specific Gravity of Bituminous Mixes (Gmm)* | *ASTM 2041* | *(1), (3)* |
| *Void Calculations, Cores or Formed Specimens* | *% of Gmm* | *(1), (3)* |
| *Void Calculations, Cores or Formed Specimens* | *ATT-36* | *(1), (3)* |
| *Temperatures* | *ATT-30* | *(1)* |
| *Percent Compaction, Cores or Nuclear Density* | *ATT-67, ATT-5 or* *ATT-11* | *(1)* |
| *Random Test Site Locations* | *ATT-56* | *(1)* |
| *Correction Factors, Nuclear Moisture-Density Measurement* | *ATT-48* | *(1)* |
| *Pavement Smoothness using IRI Criteria* | *See Contract Documents* | *Travel lanes of all top lift paving* |

*(1) Minimum Frequency not Specified.*

*(2) When a Lot has eight hours of plant production or more, a minimum of four plant checks plus four asphalt contents and four sieve analysis of the combined aggregate (cold feed or extraction) are required. When a Lot has less than eight hours of plant production, these tests shall be performed once for every two full hours of plant production.*

*(3) Report Maximum Specific Gravity (Gmm) and air voids calculated by using both ATT-36 (voids table) and by % of Gmm as follows:*

$$Air Voids \left(\%\right)=\left( \frac{G\_{mm} - G\_{mb}}{G\_{mm}}\right)×100$$

*Where: Gmm = Maximum specific gravity, and
Gmb = Marshall or core bulk density (tonne/m3)*

**Notes to the Consultant (Do not insert into the tender)**

**Submit QC Lot Paving Reports along with the QA Lot Paving Reports on a weekly basis to trans.constructqa@gov.ab.ca.**