

ATT-76/22 INTER - LABORATORY REPEATABILITY TESTING

1.0 SCOPE

The Department is continuing, and has revised, the inter-laboratory repeatability for certain asphalt mix design related tests. Testing described within this special provision is to be provided by the Contractor for information gathering purposes and is not intended to be part of the Consultant's current mix design review process.

2.0 PROCEDURE

The independent laboratory shall be chosen by the Contractor and shall have obtained pre-qualification status from Alberta Transportation in the category of Mix Design – Marshall, and shall not be involved in preparation of the asphalt mix design.

2.1 Material Sample Submission

For the mix type with the largest tonnage the Contractor's mix design lab shall provide and deliver the following to the independent testing lab:

- A combined representative sample of all virgin aggregate materials (RAP material, if applicable, is not required) to an independent laboratory for mix design related testing as described in this special provision. The minimum sample weight of the combined virgin aggregates (including blend sand) shall be 100 kg and shall be proportioned at the percentages used in applicable mix design.
- A lab-prepared 10 kg un-compacted sample of the applicable ACP mixture prepared using all component materials (including RAP) at the mix design proportions.
- A copy of the applicable mix design including additional testing and reporting as follows.
- Bulk specific gravities (Bsg) for both the +5,000 μm and the -5,000 μm materials, and the combined virgin aggregate materials.
- Bulk specific gravity value for RAP material, if applicable, used for determining the overall bulk specific gravity of the combined aggregates.
- Gradation of the combined virgin aggregates.
- Water absorption for both the +5,000 μm and -5,000 μm aggregate materials.
- Maximum specific gravity (Gmm) and asphalt absorption values for the applicable ACP mixture sample provided.
- All necessary information (including Bsg) and assumptions used for the RAP material, if applicable.

2.2 Independent Laboratory Testing

Sample preparation and testing by the independent testing lab shall include:

- Gradation analysis of the combined virgin aggregates as supplied.
- Splitting of the combined aggregate on the 5,000 μm sieve and any additional preparation work to obtain sufficient quantity to perform all testing required.
- Bulk specific gravities for both the +5,000 μm and – 5,000 μm aggregate materials.
- Water absorption for both the +5,000 μm and -5,000 μm aggregate materials.
- Maximum specific gravity testing on supplied ACP material.

The independent laboratory will carry out all testing on the supplied virgin aggregate and asphalt mixture required to calculate mixture volumetrics (VMA, Air Voids and VFA) in accordance with design procedure TLT-301 with the exception that the Marshall Density as reported in the mix design for the appropriate mix sample shall be used. Forming Marshall briquette samples or testing of the RAP material by the independent lab is not anticipated to be required. Aggregate testing for other physical properties such as Detrimental Matter in coarse aggregate and aggregate angularity (coarse or fine) is not required.

The independent testing lab shall correspond, as required, with the mix design laboratory in regards to any questions on the testing completed or assumptions made in the preparation of the mix design or in the material sample provided.

2.3 Report Submission

The report provided by the independent testing laboratory shall include:

- Name, address and contact information of testing laboratory.
- Highway project information including Hwy: Control Section, Contractor and Alberta Transportation contract number.
- ACP mix type and a copy of the applicable mix design as supplied by the mix design lab.
- Gradation analysis of the as-supplied combined virgin aggregates.
- As tested, bulk specific gravities of virgin aggregate for both +5,000 and -5,000 μm materials.
- Bulk specific gravity of RAP material as reported by mix design lab.
- Water absorption for both the +5,000 μm and -5,000 μm aggregate materials.
- Calculated bulk specific gravity of combined aggregates at mix design proportions including RAP (if applicable) and calculations used to obtain.
- Total and virgin asphalt contents for the submitted ACP mixture sample as reported by the mix design lab.
- As tested, theoretical maximum specific gravity of the supplied asphalt mix sample; and asphalt absorption value calculated using as tested bulk specific gravities of virgin aggregates and corresponding values for RAP material, if applicable.
- ACP mixture volumetric properties (Air Voids, VMA and VFA) using the as tested information listed above and appropriate Marshall density as reported in the mix design for the applicable asphalt content and mix type.
- A comparison summary table including the as tested information as reported in the Contractor supplied mix design and as tested and reported by the independent laboratory.

The Contractor will not be allowed to produce asphalt mix until written notice has been provided to the Consultant that all required materials and applicable mix design have been delivered to the independent laboratory. The independent laboratory testing and reporting listed in this special provision does not need to be completed prior to the Consultant providing written notice to produce.

The report from the independent laboratory shall be provided in electronic format to the Consultant with a copy to trans.constructqa@gov.ab.ca.

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