PART 1   GENERAL

1.1   REFERENCES

.1   American Association of State Highway and Transportation Officials (AASTHO)

.1   AASHTO T245-97-UL-2004, Standard Method of Test for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.

.2   Ministry of Transportation Ontario (MTO)

.1   MTO Laboratory Testing Manual-09: LS-283, Resistance to Stripping of Asphalt Cement in Bituminous Mixtures by Immersion Marshall.

PART 2   PRODUCTS

2.1   MATERIALS

.1   Representative samples of each asphalt paving mixture proposed for use on Project.

2.2   EQUIPMENT

.1   One or more water baths with automatic controls for immersing specimens. Baths normally used for Marshall Immersion Test are suitable for test.

.2   Scale and water bath with suitable accessory equipment for weighing test specimens in air and in water to determine their densities.

.3   Flat transfer plates of glass or metal. Keep 1 plate under each specimen during immersion period and during subsequent handling, except when weighing and testing, to prevent breakage or distortion of specimens.

.4   Apparatus required to conduct Marshall Immersion Test.

PART 3   EXECUTION

3.1   PREPARATION

.1   Prepare at least 8 specimens for each test with hand-operated hammer, in accordance with AASHTO T245-97-UL LS-283, except where specified otherwise.

3.2   TEST PROCEDURE

.1   Do Marshall testing to AASHTO T245-97-UL LS-283.

.2   Weigh each specimen in air and in water. Weigh in water as rapidly as possible to minimize absorption.

.3   Calculate specific gravity of each specimen as follows:

.1   Specific Gravity =A/A-B

.2   Where A = weight of specimen in air in grams

.3   B = weight of specimen in water in grams

.4   Sort each set of 8 specimens into 2 groups of 4 specimens each so that average specific gravity of specimens in group 1 is essentially same as that of group 2.

.5   Test group 1 specimens for Marshall stability. Calculate S1 = Marshall stability of group 1 (average).

.6   Immerse group 2 specimens in water for 24 h at 60 degrees C, then test immediately for Marshall stability. Calculate S2 = Marshall stability of group 2 (average).

3.3   CLOSEOUT ACTIVITIES

.1   Report test results to Departmental Representative.

.2   Report numerical index of retained stability as resistance of asphaltic paving mixtures to detrimental effect of water, expressed as percentage of original stability retained after immersion period.

.3   Calculate index as follows:

    .1   Index of Retained Stability = S2/S1 x 100

END OF SECTION