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Wharf Reconstruction
Musgrave Harbour, NL

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PART 1 - GENERAL

- 1.1 SUMMARY .1 This method covers measurement of loss of Marshall Stability resulting from action of water on compacted asphalt paving mixtures containing penetration grade asphalt cement.
- .2 Numerical index of retained stability is obtained by comparing stability of specimens determined in accordance with usual Marshall procedures with stability of specimens that have been immersed in water for prescribed period.
- 1.2 RELATED SECTIONS .1 Section 32 12 16 - Asphalt Paving.
- 1.3 REFERENCES .1 American Association of State Highway and Transportation Officials (AASHTO)
.1 AASHTO T245-97(2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.

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

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normally used for Marshall 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 one 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
test.

PART 3 - EXECUTION

3.1 PREPARATION OF TEST SPECIMENS

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

3.2 TEST PROCEDURE

- .1 Do Marshall testing in accordance with
AASHTO T245, except where specified
otherwise.
- .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

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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 S_1 = Marshall stability of group 1 (average).
- .6 Immerse group 2 specimens in water for 24 h at 60°C, then test immediately for Marshall stability. Calculate S_2 = Marshall stability of group 2 (average).

3.3 TEST REPORT

- .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 = $S_2 / S_1 \times 100$.