

METHOD OF TEST FOR MODIFIED HAMBURG WHEEL TRACK TESTING OF COMPACTED HOT MIX ASPHALT

1. SCOPE

1.1 This test method has been developed for internal ministry studies using their Modified Hamburg Wheel Track Machine.

1.2 This method covers the preparation and testing of laboratory compacted samples using a Modified Hamburg Wheel Track equipment.

1.3 The test is used to determine the rutting potential and moisture susceptibility of asphalt mixtures.

2. REFERENCES

AASHTO T324 Standard Method for Test for Hamburg Wheel-Track Testing of Compacted Hot-Mix Asphalt (HMA)

3. TEST PROCEDURE

Procedure of AASHTO T 324 shall be followed, except as modified below.

4. EXCEPTIONS

4.1 SUMMARY OF METHOD: A laboratory compacted specimen of HMA, a saw-cut slab specimen, or a core taken from a compacted pavement, is repetitively loaded using a reciprocating pneumatic tire.

4.2 APPARATUS:

4.2.1 TEST TIRES: A pair of 4.10/3.5-4.0 treaded pneumatic tires inflated to 345 kPa pressure with a 4-ply rating. The tire tread width shall be 70 mm. The load applied to the specimen shall be 65.5 kg.

4.2.2 WHEEL CARRIER: Shall be modified to accommodate the pneumatic test tires. The wheel carrier shall house the wheel and have the arm parallel to the sample surface.

4.3 SPECIMEN PREPARATION: Laboratory compacted slab samples compacted to an air void content of $7 \pm 1\%$ with a Linear Kneading Compactor (or equivalent) shall use a rectangular tamping foot with dimensions of 133 mm x 76 mm x 19 mm. The specimens shall be to AASHTO dimensions (320 mm long by 260 mm wide) or 381 mm long by 140 mm wide. Alternatively, pavement cores or gyratory-compacted briquettes shall be sawed to provide a sufficient wheel path length and width to allow the wheel to travel over. Briquettes shall be set in plaster of Paris with their surface level and flush with each other to provide a continuous and smooth running surface. Sample thickness shall be 76 mm.

4.4 PROCEDURE: Turn the pneumatic tire after each test so the same section of the wheel surface is not in contact with the test specimen from test to test. Adjust the sample supports to maintain sample surface approximately 10 mm under the water.

4.5 TEST TEMPERATURE: Tests are being conducted at 60°C. Specimens shall be submerged in 60°C water bath to ensure that their temperature has reached to 60°C. Preferably, sample temperature should be verified using thermocouples inserted in mid-depth of the samples.

4.6 VERIFICATION OF EQUIPMENT: Verify that the pneumatic tire is reciprocating back and forth on the test sample at 50 ± 5 passes per minute. Calibrate the LVDT's before starting every test.

4.7 DATA TRANSFER: Transfer the data from the controller to the DataXport software after every test is complete.

4.8 REPORT: In addition to the reporting requirements listed in AASHTO T 324, the report shall also include the rut depth to 0.01 mm accuracy after 500, 1000, 2000, 4000, 8000, and 10,000 passes.