METHOD OF TEST FOR
THE DETERMINATION OF PERCENT COMPACTION
OF COMPACTED BITUMINOUS PAVING MIXTURE
(MRD METHOD)

1.　　SCOPE

1.1　　This method covers the determination of the percent compaction of a sample of compacted bituminous pavement. The percent compaction is given by the bulk relative density expressed as a percentage of the theoretical maximum relative density. A correction is applied when the thickness is less than 40 mm.

2.　　RELEVANT DOCUMENTS

2.1　　ASTM D-3549

2.2　　MTO LS-262

2.3　　MTO LS-264

3.　　TEST PROCEDURE

3.1　　Determine the thickness of the test specimen according to the procedure outlined in ASTM D-3549 and record the average of four measurements.

3.2　　Determine the bulk relative density of the pavement sample according to the test procedure outlined in LS-262.

3.3　　Determine the theoretical maximum relative density of the pavement sample according to the test procedure outlined in LS-264.

4.　　CALCULATION

4.1　　The percent compaction is given by the equation:

$$\text{Compaction, \%} = \left(\frac{BRD}{MRD} \times 100 \right) + C$$

Where:　BRD　=　Bulk Relative Density of the pavement sample

　　　　　MRD　=　Theoretical Maximum Relative Density of the pavement sample

　　　　　　C　=　Thickness correction factor (0.1% for each whole millimetre that the pavement course thickness is less than 40 mm)

5.　　REPORTING OF RESULTS

　　5.1　　Calculate the results to one decimal place.

6.　　GENERAL NOTES

　　6.1　　The pavement sample taken for establishing the thickness and bulk relative density must be free from distortion or cracks or foreign material, and must consist of a minimum of a 150 mm diameter core with a minimum mass of 1000 g, or a sawn sample of the same minimum mass.

　　6.2　　Where desirable, specimens may be separated from other layers by shearing or other means provided a well defined construction plane is achieved.