Australian Standard®

Methods of testing soils for engineering purposes

Method 5.2.1: Soil compaction and density tests—Determination of the dry density/moisture content relation of a soil using modified compactive effort

AS 1289.5.2.1:2017

1 SCOPE

This Standard sets out a method for the determination of the relationship between the moisture content and the dry density of a soil, when compacted, using modified compactive effort (2703 kJ/m^3). Compaction is conducted over a range of moisture contents to establish the maximum mass of dry soil per unit volume achievable for this compactive effort, and its corresponding moisture content. The procedure is applicable to that portion of a soil that passes the 37.5 mm sieve. Soil that passes the 19.0 mm sieve is compacted in a 105 mm diameter mould. Soil that contains more than 20% of material retained on the 19.0 mm sieve is compacted in a 152 mm diameter mould.

This test method may be used for establishing a maximum dry density and optimum moisture content for the determination of other engineering properties. For compaction control testing, the use of alternative test methods such as AS 1289.5.7.1 may be considered.

NOTE: Corrections for oversize material are not made in this method but may be made using AS 1289.5.4.1 when required for compaction control.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1289	Methods of testing soils for engineering purposes	
1289.0	Method 0:	Definitions and general requirements
1289.1.1	Method 1.1:	Sampling and preparation of soils—Preparation of disturbed soil samples for testing
1289.2.1.1	Method 2.1.1:	Soil moisture content tests—Determination of the moisture content of a soil—Oven drying method (standard method)
1289.2.1.2	Method 2.1.2:	Soil moisture content tests—Determination of the moisture content of a soil—Sand bath method (subsidiary method)
1289.2.1.4	Method 2.1.4:	Soil moisture content tests—Determination of the moisture content of a soil—Microwave-oven drying method (subsidiary method)
1289.2.1.5	Method 2.1.5:	Soil moisture content tests—Determination of the moisture content of a soil—Infrared lights method (subsidiary method)
1289.2.1.6	Method 2.1.6:	Soil moisture content tests—Determination of the moisture content of a soil—Hotplate drying method