Australian Standard™

Methods of testing rocks for engineering purposes

Method 2.1.1: Rock porosity and density tests—Determination of rock porosity and dry density—Saturation and calliper techniques

AS 4133.2.1.1—2005

1 SCOPE

This Standard sets out the method for determining the porosity and dry density of rock samples in the form of specimens of regular geometry.

The method is applicable only to non-friable, coherent rocks that can be machined and do not appreciably swell or disintegrate when they are oven-dried or are immersed in water. The method is suitable when regularly shaped specimens are required for other test purposes.

NOTE: Information on uncertainty of measurement is given in Appendix A.

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: General requirements and list of methods
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
ISO	
GUM	Guide to the expression of uncertainty in measurement

3 APPARATUS

The following apparatus is required:

(a) A drying oven complying with AS 1289.0.

(b) A measuring instrument capable of measuring specimen dimensions to 0.1 mm.

(c) Vacuum saturation equipment such that the specimens can be immersed in water under a vacuum of not less than 800 Pa for a period of at least 1 h.

(d) A balance of suitable capacity, and with appropriate limit of performance.

NOTE: The limit of performance and precision of mass determination of the balance will depend on the sample mass. Suitable balances are shown in Table 1.

(e) A thermometer or other suitable temperature measuring device covering the range of 0°C to 50°C graduated to 1°C or less.