Australian Standard™

Methods of testing rocks for engineering purposes

Method 3.1: Rock swelling and slake durability tests—Determination of the swelling strain developed in an unconfined rock specimen

1 SCOPE

This Standard sets out the method for determining the swelling strain developed when an unconfined undisturbed rock specimen is immersed in water. This method is only applicable to specimens that do not change their rigidity appreciably on swelling.

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

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
4133	Methods of testing rocks for engineering purposes
4133.1.1.1	Method 1.1.1: Rock moisture content tests—Determination of the moisture content of rock—Oven drying method (standard method)
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 container to hold the specimen assembly, capable of being filled with water to a level above the top of the specimen.

(b) A dial gauge or other deformation measurement device reading to 0.002 mm, mounted to measure the swelling displacement on the axis of the specimen in the direction of interest.

(c) Bearing plates of glass or other hard material which may be cemented to the specimen with water-stable adhesives. These plates should be small compared with the area of specimen exposed to water, and positioned at points of gauging and of support to prevent indentation of the specimen.

(d) A measuring instrument capable of reading the specimen dimensions to a precision of 0.1 mm.