Australian Standard™

Methods of testing rocks for engineering purposes

Method 3.4: Rock swelling and slake durability tests—Determination of the slake durability index of rock samples

1 SCOPE

This Standard sets out the method for determining the resistance offered by a rock sample to weakening and disintegration when subjected to two standard cycles of drying and wetting and physical abrasion in a controlled chemical environment.

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

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1152	Specification for test sieves
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) Immersion machines, consisting of the following:

(i) A cylindrical drum of 100 mm unobstructed length and 140 mm diameter, with solid fixed base. The drum shall be fabricated from 2.00 mm aperture sieve cloth as detailed in AS 1152, Appendix B, and shall be provided with a solid removable lid. It shall be sufficiently strong to retain its shape during use, with no obstruction to the exterior of the mesh or the interior of the drum, for example by reinforcing members, and capable of withstanding a temperature of of 115°C.

(ii) A trough to contain the test drum supported with axis horizontal in a manner allowing free rotation, and capable of being filled with a slaking fluid such as water to a level 20 mm below the drum axis. The drum shall be mounted to allow 40 mm unobstructed clearance between the trough and base of the mesh. The principal features of the trough and drum assembly are illustrated in Figure 1.