Australian Standard™

Methods of testing soils for engineering purposes

Method 7.1.1: Soil reactivity tests—Determination of the shrinkage index of a soil—Shrink-swell index

1 SCOPE

This Standard sets out a method for conducting a swell test and a simplified core shrinkage test on companion samples of undisturbed soil. Soil suction determinations are not essential to the method. The method is applicable to samples with any initial moisture content but is particularly useful for determining the shrinkage index (see AS 2870) of soils sampled in an initially dry state.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS		
1289	Methods of testing soils for engineering purposes	
1289.0	Part 0:	General requirements and list of methods
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)
1289.6.6.1	Method 6.6.1:	Soil strength and consolidation tests—Determination of the one-dimensional consolidation properties of a soil—Standard method
2870	Residential slabs and footings—Construction	

3 APPARATUS

The following apparatus is required:

(a) Thin-walled sampler consisting of a tube with a bevelled cutting edge machined directly on the sample tube. The bevelled cutting edge shall make an angle not exceeding 15° to the axis of the tube with a permitted land width at the cutting edge not exceeding 0.5 mm. The ratio of net projected area of sampler to projected area of sample core shall not exceed 10%, and any internal clearance shall not exceed 1% of the diameter at the cutting edge.

(b) Drying oven complying with AS 1289.0.

(c) Balance of 500 g capacity having a limit of performance not exceeding ±0.05 g.

(d) Spatula or palette knife of convenient size.

(e) Flat glass plate approximately 10 mm thick and at least 400 mm square.

(f) Metal drawing pins.

(g) Vernier callipers with a precision of 0.05 mm, capable of measuring lengths 50 mm to 120 mm.