Australian Standard®

Methods of testing soils for engineering purposes

Method 6.4.1: Soil strength and consolidation tests—Determination of compressive strength of a soil—Compressive strength of a specimen tested in undrained triaxial compression without measurement of pore water pressure

1 SCOPE This method describes a basic test procedure applicable to cohesive soils and sets out a procedure for determining the compressive strength of a specimen of soil in the triaxial compression apparatus under conditions in which the cell pressure is maintained constant, and in which there is no change in the total water content of the specimen (see Notes 1 and 2). The test is limited to specimens in the form of right cylinders of height approximately equal to twice the diameter of the cylinder (see Notes 3 and 14).

Cohesionless materials may be tested by triaxial methods; however, special techniques are required for the specimen preparation, for which information can be obtained from the reference source (see Note 4). The specific conditions of any test procedure are defined by a geotechnical engineer who ensures that test method is appropriate for the data required.

2 REFERENCED DOCUMENT The following document is referred to in this Standard:

AS

1289 Methods of testing soils for engineering purposes

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)

3 APPARATUS The following apparatus is required:

(a) A triaxial test cell of dimensions appropriate to the size of the specimen, suitable for use with the selected fluid at the highest test pressure, and provided with a means of applying additional axial compressive load to the specimen through a loading ram. The cell shall include end caps of the same diameter as the test specimen. The vertical stress due to the top cap shall not exceed 1% of the maximum principal stress difference. The upper end cap has a central seating which will not transmit moment (a ball and cone assembly is suitable) to receive the loading ram. If end caps of low friction characteristics at the soil/cap interface are used, they are required to be of slightly larger diameter than the specimen.

(b) Apparatus for applying, maintaining and measuring the desired pressure in the fluid within the cell to an accuracy of ±5 kPa or to 1% of the applied pressure, whichever is the greater.