

Australian Standard[®]

Methods of testing soils for engineering purposes

Method 6.4.2: Soil strength and consolidation tests—Determination of compressive strength of a soil—Compressive strength of a saturated specimen tested in undrained triaxial compression with measurement of pore water pressure

AS 1289.6.4.2:2016

PREFACE

This Standard was prepared by Standards Australia Committee CE-009, Testing of Soils for Engineering Purposes, to supersede AS 1289.6.4.2—1998.

The objective of this Standard is to set out the method for performing isotropically consolidated undrained (CIU) triaxial tests.

This revision is motivated by improvements in the equipment, instrumentation and computer control capabilities of recent triaxial test apparatus. More emphasis is placed on minimizing sample disturbance during specimen preparation as research since the last revision has emphasized the importance of minimal disturbance on soil strength and stiffness.

This revision describes the procedure for a single stage test. It doesn't preclude multi-stage tests, however the determination of c and ϕ has been removed. This revision also brings the Standard more in line with other international Standards.

METHOD

1 SCOPE

This Standard sets out a test procedure applicable to cohesive soils and a method for determining the compressive strength of a specimen of soil in a triaxial compression apparatus under conditions in which the cell pressure is maintained constant (see Appendix B1).

A typical test will involve a stage in which an all-round pressure is applied following which the sample is allowed to drain, a saturation stage in which pressures are increased to minimize the amount of air within the specimen, and a shearing stage performed at a constant rate of axial deformation. During the shearing stage, drainage of water from the specimen is prevented so that there is no change in the total water content of the specimen. The pore pressure is monitored throughout the test. The test described is limited to specimens in the form of right cylinders with height to diameter ratio of $2 \pm 2\%$.