

DIN EN ISO 17892-9:2018-07 (E)

Geotechnical investigation and testing - Laboratory testing of soil - Part 9: Consolidated triaxial compression tests on water saturated soils (ISO 17892-9:2018)

Contents	Page
European foreword	4
Foreword	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 Symbols	9
5 Apparatus	11
5.1 General	11
5.2 Triaxial cell	12
5.3 Confining membrane	12
5.4 Porous discs	12
5.5 Filter paper	14
5.6 Pressure systems	14
5.7 Load frame	14
5.8 Measuring devices	14
5.8.1 Load measuring device	14
5.8.2 Pressure measuring devices	15
5.8.3 Vertical displacement measuring device	15
5.8.4 Volume change measuring device	15
5.9 Cell and back pressure fluids	15
5.10 Ancillary apparatus	15
6 Test procedure	16
6.1 General requirements and equipment preparation	16
6.2 Preparation of specimens	16
6.3 Saturation of specimen	17
6.3.1 Saturation	17
6.3.2 Application of cell and back pressure	18
6.3.3 Saturation checks	18
6.4 Isotropic consolidation (CIU and CID tests)	19
6.5 Anisotropic consolidation (CAU and CAD tests)	19
6.6 End of consolidation	19
6.7 Shearing	19
6.7.1 General	19
6.7.2 Undrained tests (CIU and CAU)	20
6.7.3 Drained tests (CID and CAD)	20
6.8 Dismounting	21
7 Test results	21
7.1 Bulk density, dry density and water content	21
7.2 Calculations of test parameters	22
7.2.1 Height after consolidation	22
7.2.2 Corrected cross sectional area	22
7.2.3 Corrections for elastic membrane	22
7.2.4 Correction for filter paper strips	23
7.2.5 Vertical total stress	23
7.2.6 Vertical effective stress	23
7.2.7 Horizontal total stress	24
7.2.8 Horizontal effective stress	24

7.2.9	Pore pressure change.....	24
7.2.10	Vertical strain.....	24
7.2.11	Vertical strain during shear.....	24
7.2.12	Volumetric strain.....	24
7.2.13	Volumetric strain during shear	24
8	Test report.....	25
8.1	Mandatory reporting	25
8.2	Graphical presentation.....	26
8.3	Optional reporting	26
Annex A (normative) Calibration, maintenance and checks		27
Annex B (informative) Additional calculations for effective shear strength		29
Bibliography.....		31