

DIN EN ISO 22476-16:2025-03 (E)

Geotechnical investigation and testing - Field testing - Part 16: Borehole shear test (ISO 22476-16:2024)

Contents		Page
European foreword		4
Foreword		5
Introduction		6
1	Scope	8
2	Normative references	8
3	Terms, definitions and symbols	8
3.1	Terms and definitions	8
3.2	Symbols	10
4	Equipment	11
4.1	General	11
4.2	Phicometer probe	13
4.3	Connection tube line and pulling rods	13
4.3.1	Connection tube line	13
4.3.2	Pulling rods	13
4.4	Equipment at ground surface	15
4.4.1	Pulling device	15
4.4.2	Pressure-volume control unit (CU)	15
4.4.3	Regulation system of the traction speed of the probe	15
4.5	Means of measurement and control	15
4.5.1	Time	15
4.5.2	Pressure, volume and pulling force	15
4.5.3	Axial displacement	16
4.5.4	Display of readings	16
4.5.5	Dimensions of the shearing zone of the probe	16
5	Test procedure	16
5.1	Checks and measurements before insertion of the probe in the ground	16
5.2	Borehole drilling phase, probe placing phase and zero setting	16
5.3	Minimum spacing between tests	17
5.4	Teeth insertion phase	19
5.5	Shearing phase	21
5.5.1	Loading program - applied hold pressures in the probe	21
5.5.2	Successive shearing stages under pressure holds	21
5.5.3	End of the test	22
6	Back-filling of the phicometer borehole	22
7	Safety requirements	22
8	Test results	23
8.1	General	23
8.2	Shearing curve graph -- Shear strength parameters i and c_i	23
8.3	Associated graphs	23
8.4	Adjustment and determination of the in situ phicometer angle of friction i and the in situ phicometer cohesion c_i	23

8.5	Examples of adjustment and determination of the in-situ angle of friction i and cohesion c_i	24
9	Reporting	25
9.1	General	25
9.2	Field report	25
9.3	Test report	28
9.4	Tests log	29
Annex A (normative) Characteristics of the phicometer probe		30
Annex B (normative) Calibration, checks and corrections		31
Annex C (normative) Execution of the PBST borehole		35
Annex D (normative) Determination of the shear strength parameters		37
Annex E (informative) Correlations to estimate p_{IM} from other soil resistance parameters q_c and N		39
Annex F (normative) Accuracy and uncertainties		40
Annex G (informative) Examples of adjustment and determination of the in situ phicometer angle of friction i and cohesion c_i		42
Annex H (informative) Example of installation of the PBST equipment		47
Bibliography		48