

DIN 4020:2010-12 (E)

Geotechnical investigations for civil engineering purposes - Supplementary rules to DIN EN 1997-2

Contents	Page
Foreword	4
1 General	5
Re 1.1.2 Scope of EN 1997-2	5
Re 1.2 Normative references	5
Re 1.4 Distinction between Principles and Application rules	6
Re 1.5 Definitions	6
Re 1.5.3 Specific definitions used in EN 1997-2	6
Re 1.8 Symbols and units	7
A 1.9 Supplementary quantities and symbols	7
Re 2 Planning of ground investigations	8
Re 2.1.1 General	8
Re 2.1.2 Ground	8
Re 2.1.4 Ground water	8
Re 2.2 Sequence of ground investigations	8
A 2.2.1 Requirements	8
A 2.2.2 Geotechnical categories	8
A 2.2.3 Scope of investigations	9
Re 2.4 Design investigations	9
A 2.6 Controlling and monitoring	10
Re 3 Soil and rock sampling and ground water measurements	10
Re 3.4.2 Soil identification	10
Re 4 Field tests in soil and rock	10
Re 4.1 General	10
Re 4.2 General requirements	11
Re 4.2.2 Execution	11
Re 4.3 Cone penetration and piezocone penetration tests (CPT, CPTU)	11
Re 4.4 Pressuremeter tests (PMT)	11
Re 4.6 Standard Penetration Test (SPT)	12

Re 4.6.1 Objectives	12
A 4.12 Borehole jack test (BJT)	12
A 4.13 Borehole dynamic probing (BDP)	12
Re 5 Laboratory tests on soil and rock	13
Re 5.5.3 Water content determination	13
Re 5.5.4 Bulk density determination	13
Re 5.5.5 Particle density determination	13
Re 5.5.6 Particle size analysis	13
Re 5.5.7 Consistency limits determination	13
Re 5.5.8 Determination of the density index of granular soil	13
Re 5.6 Chemical testing of soil and ground water	14
Re 5.6.2 Organic content determination	14
Re 5.6.3 Carbonate content determination	14
Re 5.6.4 Sulfate content determination	14
Re 5.6.5 pH value determination (acidity and alkalinity)	14
Re 5.6.6 Chloride content determination	14
Re 5.8 Strength testing of soil	14
Re 5.8.4 Unconfined compression test	14
Re 5.8.5 Unconsolidated, undrained triaxial compression test	14
Re 5.8.6 Consolidated triaxial compression test	15
Re 5.8.7 Consolidated direct shear box tests	15
Re 5.9 Compressibility and deformation testing of soil	15
Re 5.9.2 Oedometer compressibility testing	15
Re 5.10 Compaction testing of soil	15
Re 5.10.2 Compaction tests	15
Re 5.11 Permeability testing of soil	15
Re 5.11.2 Requirements	15
Re 6 Ground investigation report	15
Re 6.2 Presentation of geotechnical information	15
Re 6.3 Evaluation of geotechnical information	16
A 7 Geotechnical report	16
A 7.1 Scope	16
A 7.2 Form and content	17
A 7.3 Evaluation of results	17

A	7.3.1 Geometrical data	17
A	7.3.2 Characteristic values for soil parameters	17
A	7.3.3 Characteristic values for rock parameters	18
A	7.3.4 Characteristic values for ground water	18
Annex B (informative) Planning of geotechnical investigations		19
Re B.1 Stages of ground investigations in geotechnical design, execution of works and exploitation of the structure		19
Re B.3 Examples of recommendations for the spacing and depth of investigations		19
Annex D (informative) Cone and piezocone penetration tests		20
Re D.1 Example for deriving values of the effective angle of shearing resistance and drained Young's modulus		20
A	D.8 Examples showing the relationship between cone penetration resistance q_c of the penetrometer (CPT) and the degree of compactness/density index for various coarse-grained soils	21
A	Annex AA (informative) Criteria for and examples of classification into geotechnical categories	23
A	Bibliography	29