

DIN EN ISO 22475-1:2022-02 (E)

Geotechnical investigation and testing - Sampling methods and groundwater measurements - Part 1: Technical principles for the sampling of soil, rock and groundwater (ISO 22475-1:2021)

Contents		Page
European foreword		4
Foreword		5
1	Scope	6
2	Normative references	6
3	Terms, definitions and abbreviated terms	7
3.1	Ground investigation methods	7
3.2	Drilling rigs and equipment	8
3.3	Sampling	9
3.4	Rock and soil properties	14
3.5	Abbreviated terms	14
4	Equipment	15
4.1	Requirements for the drilling rigs and equipment	15
4.2	Drilling parameters	15
4.3	Safety and special requirements	15
5	Procedures	16
5.1	General requirements for sampling	16
5.2	Selection of techniques and methods	16
5.3	Sampling categories for soil	16
5.3.1	General	16
5.3.2	Sample disturbance	17
5.3.3	Category A sampling	17
5.3.4	Category B sampling	18
5.3.5	Category C sampling	18
5.3.6	Category D sampling	18
5.3.7	Category E sampling	18
5.4	Sampling categories for rock	18
5.4.1	General	18
5.4.2	Sampling disturbance	19
5.4.3	Category A sampling	19
5.4.4	Category B sampling	19
5.4.5	Category C sampling	20
5.4.6	Category D sampling	20
5.4.7	Category E sampling	20
5.5	Sampling in trial pits, other excavations, headings and shafts	20
5.6	Requirements for ground investigation sites and points	20
5.7	Preliminary information needed before starting sampling	21
5.8	Backfilling and site reinstatement	21
6	Soil sampling methods	22
6.1	General	22
6.2	Sampling by drilling (continuous sampling)	22
6.2.1	General	22
6.2.2	Sampling by rotary drilling	30
6.2.3	Sampling by use of hammer driving methods	32
6.2.4	Sampling by cable percussion drilling	32
6.2.5	Sampling by hollow stem auger drilling	32
6.2.6	Sampling by grab drilling	32
6.2.7	Soil sampling by small diameter drilling	33

6.2.8	Sampling by resonance drilling	33
6.3	Sampling using samplers	33
6.3.1	General	33
6.3.2	Sampling using the open-tube sampler and the piston sampler	37
6.3.3	Sampling using the standard penetration test sampler	42
6.3.4	Sampling by using the window sampler	42
6.3.5	Sampling using the windowless sampler	42
6.4	Block sampling	42
6.4.1	Sampling from trial pits	42
6.4.2	Sampling using large samplers	43
7	Rock sampling methods	43
7.1	General	43
7.2	Sampling by drilling	47
7.2.1	General	47
7.2.2	Sampling by rotary dry core drilling	47
7.2.3	Sampling by rotary core drilling	47
7.2.4	Sampling by wireline core drilling	48
7.2.5	Sampling of cuttings by rotary open hole drilling	48
7.3	Block sampling	48
8	Groundwater sampling methods for geotechnical purposes	48
8.1	General	48
8.2	Equipment	49
8.3	Techniques of groundwater sampling	49
8.3.1	General	49
8.3.2	Extraction by pumping	49
8.3.3	Extraction by water sampler	50
8.3.4	Extraction by vacuum bottles	50
9	Preservation, labelling, transport and storage of samples	50
9.1	General	50
9.2	Preservation of samples	50
9.3	Labelling of samples	51
9.4	Transport and storage of samples	52
9.4.1	General considerations	52
9.4.2	Sampling category A	52
9.4.3	Sampling category B to E	53
9.4.4	Transport of water samples	53
10	Report	54
10.1	Field report	54
10.1.1	General	54
10.1.2	Summary log	54
10.1.3	Drilling record	55
10.1.4	Sampling record	55
10.1.5	Record of identification and description of soil and rock	56
10.1.6	Backfilling record	57
10.1.7	Record of groundwater measurements during drilling and sampling	57
10.1.8	Daily record	57
10.2	Report of the results	57
	Annex A (informative) Example of a form for the preliminary information on the intended sampling	59
	Annex B (informative) Field reports	61
	Annex C (informative) Drilling and sampling equipment for soil and rock	69
	Annex D (informative) Examples of commonly used samplers and sample types	127
	Annex E (informative) Vacuum bottles for groundwater sampling	129
	Annex F (informative) Sealing and securing samples	131
	Annex G (informative) Sampling of coarse soils by drilling	132
	Annex H (informative) Sample quality	133
- 2 -	Bibliography	139