
**Geotechnical investigation and testing —
Geohydraulic testing —**

**Part 4:
Pumping tests**

*Reconnaissance et essais géotechniques — Essais géohydrauliques —
Partie 4: Essais de pompage*



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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	2
3.1 Terms and definitions	2
3.2 Symbols	2
4 Equipment	2
5 Test procedure	3
5.1 Test preparation	3
5.2 Arranging the disposal of discharge water	3
5.3 Executing and equipping the well	4
5.4 Executing and equipping the piezometers	6
5.5 Execution of the test	6
5.6 Uncertainty of measurement	9
5.7 Interruptions in pumping	9
5.8 Decommissioning	9
6 Test results	9
7 Reports	10
7.1 Field report	10
7.2 Test report	11
Annex A (informative) Record of measured values and test results of the pumping test — Example	12
Annex B (informative) Determining the pumping test discharge	14
Annex C (informative) Interpretation of the pumping test results	18
Bibliography	25

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22282-4 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 341, *Geotechnical investigation and testing*, in collaboration with Technical Committee ISO/TC 182, *Geotechnics*, Subcommittee SC 1, *Geotechnical investigation and testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 22282 consists of the following parts, under the general title *Geotechnical investigation and testing — Geohydraulic testing*:

- *Part 1: General rules*
- *Part 2: Water permeability tests in a borehole using open systems*
- *Part 3: Water pressure tests in rock*
- *Part 4: Pumping tests*
- *Part 5: Infiltrometer tests*
- *Part 6: Water permeability tests in a borehole using closed systems*

Geotechnical investigation and testing — Geohydraulic testing —

Part 4: Pumping tests

1 Scope

This part of ISO 22282 establishes requirements for pumping tests as part of geotechnical investigation service in accordance with EN 1997-1 and EN 1997-2.

A pumping test consists in principle of:

- drawing down the piezometric surface of the groundwater by pumping from a well (the test well);
- measuring the pumped discharge and the water level in the test well and piezometers, before, during and after pumping, as a function of time.

This part of ISO 22282 applies to pumping tests performed on aquifers whose permeability is such that pumping from a well can create a lowering of the piezometric head within hours or days depending on the ground conditions and the purpose. It covers pumping tests carried out in soils and rock.

The tests concerned by this part of ISO 22282 are those intended for evaluating the hydrodynamic parameters of an aquifer and well parameters, such as:

- permeability of the aquifer,
- radius of influence of pumping,
- pumping rate of a well,
- response of drawdown in an aquifer during pumping,
- skin effect,
- well storage,
- response of recovery in an aquifer after pumping.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies

ISO 14688-1, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

ISO 14689-1, *Geotechnical investigation and testing — Identification and classification of rock — Part 1: Identification and description*

ISO 22282-1, *Geotechnical investigation and testing — Geohydraulic testing — General rules*

ISO 22475-1, *Geotechnical investigation and testing — Sampling methods and groundwater measurements — Part 1: Technical principles for execution*