Irish Standard
I.S. EN ISO 22282-5:2012

Geotechnical investigation and testing - Geohydraulic testing - Part 5: Infiltrometer tests (ISO 22282-5:2012)

I.S. EN ISO 22282-5:2012

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English Version

Geotechnical investigation and testing - Geohydraulic testing - Part 5: Infiltrometer tests (ISO 22282-5:2012)

Reconnaissance et essais géotechniques - Essais géohydrauliques - Partie 5: Essais d'infiltromètres (ISO 22282-5:2012)

Geotechnische Erkundung und Untersuchung - Geohydraulische Versuche - Teil 5: Infiltrometerversuche (ISO 22282-5:2012)

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Foreword

This document (EN ISO 22282-5:2012) has been prepared by Technical Committee CEN/TC 341 “Geotechnical Investigation and Testing", the secretariat of which is held by ELOT, in collaboration with Technical Committee ISO/TC 182 "Geotechnics".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2012, and conflicting national standards shall be withdrawn at the latest by December 2012.

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

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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INTERNATIONAL STANDARD

ISO 22282-5

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Geotechnical investigation and testing — Geohydraulic testing —

Part 5: Infiltrometer tests

Reconnaissance et essais géotechniques — Essais géohydrauliques — Partie 5: Essais d'infiltromètres

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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 22282-5 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 5: Infiltrometer tests

1 Scope

This part of ISO 22282 establishes requirements for ground investigations by means of infiltrometer tests as part of geotechnical investigation services in accordance with EN 1997-1 and EN 1997-2.

It applies to the *in situ* determination of the water permeability of an existing geological formation or of treated or compacted materials.

The infiltrometer test is used to determine the infiltration capacity of the ground at the surface or shallow depth. It is a simple test for determining the permeability coefficient. The method can be applied using either steady-state or transient conditions, in saturated or unsaturated soils.

The principle of the test is based on the measurement of a surface vertical flow rate of water which infiltrates the soil under the influence of a positive hydraulic head.

Surface infiltration devices include single and double-ring infiltrometer designs of the open or closed type.

The measurement devices and measurement procedures are adapted to different ranges of permeability. Open systems are adapted to permeability ranges from 10^{-5} to 10^{-8} m/s and closed systems for permeability lower than 10^{-8}.

Depending on the environmental conditions and the water permeability of the soil, a duration of a few minutes to a few days is needed to run the test.

This part of ISO 22282 defines the terminology and the measured parameters. It specifies the required characteristics of the equipment, defines the procedures of the tests relating to the different measurement techniques and specifies the tests results.

It is applicable to:

— civil engineering projects;

— hydrogeology studies; and

— waste storage.

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

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