



BSI Standards Publication

Geosynthetic barriers – Determination of permeability to liquids

National foreword

This British Standard is the UK implementation of EN 14150:2019. It supersedes BS EN 14150:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/553, Geosynthetics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Geosynthetic barriers - Determination of permeability to liquids

Géomembranes - Détermination de la perméabilité aux liquides

Geosynthetische Dichtungsbahnen - Bestimmung der Flüssigkeitsdurchlässigkeit

This European Standard was approved by CEN on 29 April 2019.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 14150:2019) has been prepared by Technical Committee CEN/TC 189 “Geosynthetics”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document supersedes EN 14150:2006.

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1 Scope

This document specifies a method for measuring the steady-state liquid flow through a geosynthetic barrier, used to contain liquids in long-term applications.

The test method and described apparatus allow the measurement of flows accurately down to $10^{-6} \text{ m}^3/\text{m}^2/\text{day}$. In particular circumstances where testing indicates that values obtained for a geosynthetic barrier lie below the threshold of sensitivity of this test method, then the value of liquid flow is declared as being less than $10^{-6} \text{ m}^3/\text{m}^2/\text{day}$.

Due to its long duration, this test method is not suitable for production control testing.

Clay geosynthetic barriers cannot be tested with this apparatus.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Principle

A differential hydraulic pressure is applied between the two sides of a geosynthetic barrier. It is kept constant during the test at 100 kPa, the upstream pressure being set to 150 kPa and the downstream pressure to 50 kPa.

The flow through the geosynthetic barrier is calculated from the variations of the liquid volume measured on both sides of the geosynthetic barrier.

NOTE This test is conducted with water but can also be performed with other liquids, providing chemical resistance and compatibility of the apparatus is ensured.

In the light of laboratory experience, it is recommended that the test procedural improvement and equipment enhancement of the sensitivity threshold of the test procedure be reviewed and the applicability of the test procedure to the product permeability assessed at regular intervals, not exceeding 12 months.

Other pressure levels may be applied with the agreement of all concerned persons or parties. In this case it is recommended that the pressure levels applied be described in the test report

5 Apparatus

5.1 Cell

The two-part cell (see Figure 1) shall resist oxidation and hydraulic pressure applied along the test. In each part of the cell, a cavity allows to apply a hydraulic pressure. A porous disc resisting oxidation placed in the downstream cavity prevents deformations of the geosynthetic barrier.