

Geosynthetic clay barriers - Determination of water flux index - Flexible wall permeameter method at constant head

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Geosynthetic clay barriers - Determination of water flux
index - Flexible wall permeameter method at constant
head**

Barrières géosynthétiques argileuses - Détermination
de l'indice eau par analyse en flux - Méthode au
perméamètre à paroi flexible de charge constante

Geosynthetische Tondichtungsbahnen - Bestimmung
der Durchflussrate - Triaxialzellen-Methode mit
konstanter Druckhöhe

This European Standard was approved by CEN on 25 December 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 16416:2023) 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of an identical text or by endorsement, at the latest by August 2023, and conflicting national standards shall be withdrawn at the latest by August 2023.

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

This document supersedes EN 16416:2013.

In comparison with the previous edition, the following technical modifications have been made:

- Addition of details in Figure 1;
- Addition of details in 7.5 on the compressive stress.

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

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies an index test method that covers laboratory measurement of water flux through saturated clay geosynthetic barrier (GBR-C) specimens using a flexible wall permeameter at constant head.

This test method is applicable to GBR-C products with no additional sealing layers attached (e.g. polymeric or bituminous).

This test method specifies a measurement of flux under a prescribed set of conditions that can be used for manufacturing quality control. The test method can also be used to check conformance.

The flux value determined using this test method is not considered to be representative of the in-service flux of a GBR-C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN ISO 9862, *Geosynthetics — Sampling and preparation of test specimens (ISO 9862)*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 11465, *Soil quality — Determination of dry matter and water content on a mass basis — Gravimetric method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

flux

volumetric flow rate per unit area normal to the plane of the product at a specified head

[SOURCE: EN ISO 10318-1:2015, 2.3.3.4]

4 Apparatus

The apparatus shall consist of the following.

4.1 Constant head hydraulic system

4.1.1 General

The system shall be capable of maintaining constant hydraulic pressures to within $\pm 2,5$ % and shall include means to measure the hydraulic pressures to within the prescribed tolerance. In addition, the system shall be capable of maintaining a constant head loss across the test specimen to within ± 5 % and shall include means to measure the head loss with the same uncertainty of measurement or better.