

SLOVENSKI STANDARD oSIST prEN 16416:2012

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Geosintetične glinene pregrade - Ugotavljanje indeksa vodnega pretoka - Metoda s permeametrom (merilnikom prepustnosti) z gibko steno pri konstantnem vodnem tlaku

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

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

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

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ICS:

59.080.70Geotekstilije91.100.50Veziva. Tesnilni materiali

Geotextiles Binders. Sealing materials

oSIST prEN 16416:2012

en,fr,de



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<u>SIST EN 16416:2013</u> https://standards.iteh.ai/catalog/standards/sist/3407bbe7-8ba9-45af-8439-9b487fcad189/sist-en-16416-2013



EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

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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

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Foreword

This document (prEN 16416:2012) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

1 Scope

This European Standard describes an index test method that covers laboratory measurement of water flux through saturated geosynthetic clay 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.

This test method provides 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 //standards.iteh.ai)

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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)

EN ISO 9863-1, Geosynthetics — Determination of thickness at specified pressures – Part 1: Single layers (ISO 9863-1)

EN ISO 10318, Geosynthetics — Terms and definitions (ISO 10318)

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

ISO 11465, Soil quality – Determination of dry matter and water content on a mass basis – Gravimetric method (ISO 11465:1993, Cor. 1:1994)

3 Terms and definitions

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

3.1

Flux

The volumetric flow rate per unit area normal to the plane of the product at a defined head (EN ISO 10318)

3.2.

Geosynthetic clay barrier

A factory-assembled structure of geosynthetic materials in the form of a sheet, which acts as a barrier. The barrier function is essentially fulfilled by clay. It is used in contact with soils and/or other materials in geotechnical and civil engineering applications (EN ISO 10318).

4 Apparatus

4.1 Constant head hydraulic system

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 accuracy or better.

4.1.1 System de-airing

The hydraulic system shall be designed to facilitate rapid and complete removal of free air bubbles from flow lines.

4.1.2 Back pressure system

The hydraulic system shall have the capability to apply back pressure to the specimen to facilitate saturation. The system shall be capable of maintaining the applied back pressure throughout the duration of the test. The back pressure system shall be capable of applying, controlling, and measuring the back pressure to within \pm 2,5 % of the applied pressure. The back pressure may be provided by a compressed gas supply, a deadweight acting on a piston, or any other method capable of applying and controlling the back pressure to the tolerance specified in this paragraph.

NOTE 1—Application of gas pressure directly to a liquid will dissolve gas in the liquid. A variety of techniques are available to minimize dissolution of gas in the back pressure liquid, including separation of gas and liquid phases with a bladder and frequent replacement of the liquid with de-aired water. ISTEN 16416:2013

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4.2 Flow Measurement System

4.2.1 Accuracy of inflow and outflow

Both inflow and outflow volumes shall be measured unless the lack of leakage, continuity of flow, and cessation of consolidation or swelling can be verified by other means. Required accuracy for the flow measured over an interval of time is \pm 5 %.

4.2.2 De-airing and compliance of the system

The flow-measurement system shall contain a minimum of dead space and be capable of complete and rapid de-airing. Rigid tubing shall be used so that volume change of the system in response to changes in pressure is minimized.

4.3 Permeameter cell pressure system

The system for pressurizing the permeameter cell shall be capable of applying and maintaining the cell pressure to within $\pm 2,5$ % of the applied pressure. However, the effective stress on the test specimen shall be maintained to the desired value with an accuracy of ± 5 %. The device for pressurizing the cell may consist of a reservoir connected to the permeameter cell and partially filled with de-aired water, with the upper part of the reservoir connected to a compressed gas supply or other source of pressure (see NOTE 2).