Geosünteettõkked. Nõutavad omadused transporditaristus kasutamiseks

Geosynthetic barriers - Characteristics required for use in transportation infrastructure

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15382:2013 sisaldab Euroopa standardi EN 15382:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 15382:2013 consists of the English text of the European standard EN 15382:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 17.07.2013.	Date of Availability of the European standard is 17.07.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Geosynthetic barriers - Characteristics required for use in transportation infrastructure

Barrières géosynthétiques - Caractéristiques requises pour l'utilisation dans l'infrastructure des voies de transport

Geosynthetische Dichtungsbahnen - Eigenschaften, die für die Anwendung in Verkehrsbauten erforderlich sind

This European Standard was approved by CEN on 16 May 2013.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Page

Foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms, definitions and abbreviations 8
3.1 Terms and definitions 8
3.2 Abbreviations 8

4 Required characteristics and corresponding methods of test 9
4.1 General 9
4.2 Types of applications 9
4.3 Relevant characteristics 11
4.4 Characteristics relevant to specific conditions of use 16
4.4.1 General 16
4.4.2 Tear strength 16
4.4.3 Friction characteristics (direct shear and inclined plane tests) 16
4.4.4 Chemical resistance 16
4.4.5 Low temperature behaviour 16
4.4.6 Weathering 16
4.4.7 Resistance to wetting and drying 17
4.4.8 Freeze-thaw cycle resistance 17
4.4.9 Resistance to root penetration 17
4.5 Release of dangerous substances 17

5 Evaluation of conformity 17
5.1 General 17
5.2 Verification of values 18
5.3 Initial type tests 18
5.4 Factory production control 19
5.5 Inspection 19

6 Marking 19

Annex A (normative) **Factory production control — Factory production control scheme** 20
A.1 General 20
A.2 Product design 20
A.3 Production 20
A.3.1 Raw or incoming materials 20
A.3.2 Production process 20
A.4 Finished products 20
A.4.1 Raw or incoming materials 20
A.4.2 Alternative tests 23
A.4.3 Equipment 23
A.5 Provisions applicable to A.2, A.3 and A.4 (to be used where appropriate) 24
A.5.1 Records 24
A.5.2 Assessment of results 24
A.5.3 Traceability 24
A.5.4 Corrective action for non-conforming materials and products 24
A.5.5 Personnel 24
A.5.6 Quality management 24

Annex B (normative) **Durability of geosynthetic barriers** 25
B.1 Introduction 25
B.1.1 Standards to which this annex is common 25
B.1.2 Mechanisms of degradation 25
B.1.3 Service life 26

B.1.4 Use of rework materials **26**
B.2 Test requirements **26**
B.2.1 General requirement **26**
B.2.2 Requirements for repeat testing **26**
B.2.3 Requirements for individual materials **27**
B.3 Durability tests **28**
B.3.1 Introduction **28**
B.3.2 Weathering **28**
B.3.3 Resistance to micro-organisms **30**
B.3.4 Resistance to environmental stress cracking **30**
B.3.5 Resistance to leaching **30**
B.3.6 Resistance to oxidation **31**
B.3.7 Chemical resistance **31**
B.4 Evaluation tests and acceptance criteria **31**
B.4.1 General **31**
B.4.2 Evaluation by comparison of tensile properties **31**
B.4.3 Evaluation by comparison of Oxidative Induction Time (OIT) values **32**
B.4.4 Evaluation by change in mass **32**
B.4.5 Evaluation by change in water permeability **32**

Annex C (informative) **Major technical changes to previous edition** **33**

Annex ZA (informative) **Clauses of this European Standard addressing the provisions of the EU Construction Products Directive** **34**
ZA.1 Scope and relevant characteristics **34**
ZA.2 Procedure for the attestation of conformity for geosynthetic barriers used in transportation infrastructure **35**
ZA.2.1 Systems of attestation of conformity **35**
ZA.2.2 Certificate and declaration of conformity **36**
ZA.3 CE marking and labelling **37**

Bibliography **41**

Foreword

This document (EN 15382:2013) 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 January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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.

This document supersedes EN 15382:2008.

Annex C provides details of significant technical changes between this European Standard and the previous edition.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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, Former Yugoslav Republic of Macedonia, 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.

Introduction

This European Standard allows manufacturers to describe geosynthetic barriers on the basis of declared values for characteristics relevant to the intended use and if tested to the specified method. It also includes procedures for evaluation of conformity and factory production control.

This European Standard may also be used by designers, end-users and other interested parties as a tool to define relevant and appropriate characteristics for specifications and on-site quality control. It should be emphasised however that not all characteristics and test methods quoted in this European Standard are suitable for the purpose of on-site quality control.

Tests for several non-mandated characteristics are still under study and will be included when the standard is revised.

The term “product” used in this standard refers to a geosynthetic barrier, including polymeric geosynthetic barriers, clay geosynthetic barriers and bituminous geosynthetic barriers.

This European Standard is part of a group of standards, addressing the requirements for geosynthetic barriers when used in a specific application.

Particular application cases may contain requirements about additional properties and – preferably standardised – test methods, if they are technically relevant and not conflicting with European Standards.

The design life of the product should be determined, since its function may be temporary, as a construction expediency, or permanent, for the lifetime of the structure.

1 Scope

This European Standard specifies the relevant characteristics of geosynthetic barriers (polymeric, clay and bituminous geosynthetic barriers), used as fluid barriers in infrastructure works, e.g. roads, railroads, runways of airports, and the appropriate test methods to determine these characteristics. Tunnels and underground structures are addressed in EN 13491.

The intended use of these products is to control the pathway of liquids through the construction and to limit any contamination, e.g. by de-icing products, of groundwater or water sources.

This European Standard is applicable to geosynthetic barriers, but not to geotextiles or geotextile-related products, as defined in EN ISO 10318.

This European Standard provides for the evaluation of conformity of the product to this European Standard.

This European Standard defines requirements to be met by manufacturers and their authorised representatives with regard to the presentation of product properties.

This European Standard does not cover applications where the geosynthetic barrier will be in contact with water that has been treated for human consumption. In these cases other relevant standards, requirements and/or regulations should be observed.

2 Normative references

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 495-5, *Flexible sheets for waterproofing — Determination of foldability at low temperature — Part 5: Plastic and rubber sheets for roof waterproofing*

EN 1109, *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*

EN 1844, *Flexible sheets for waterproofing — Determination of resistance to ozone — Plastic and rubber sheets for roof waterproofing*

EN 1849-1, *Flexible sheets for waterproofing — Determination of thickness and mass per unit area — Part 1: Bitumen sheets for roof waterproofing*

EN 1849-2, *Flexible sheets for waterproofing — Determination of thickness and mass per unit area — Part 2: Plastic and rubber sheets*

EN 12224, *Geotextiles and geotextile-related products — Determination of the resistance to weathering*

EN 12225, *Geotextiles and geotextile-related products — Method for determining the microbiological resistance by a soil burial test*

EN 12310-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for waterproofing — Determination of resistance to tearing (nail shank)*

EN 12311-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of tensile properties*

EN 12311-2, *Flexible sheets for waterproofing — Determination of tensile properties — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 13361, *Geosynthetic barriers — Characteristics required for use in the construction of reservoirs and dams*

EN 13362, *Geosynthetic barriers — Characteristics required for use in the construction of canals*

EN 13491, *Geosynthetic barriers — Characteristics required for use as a fluid barrier in the construction of tunnels and underground structures*

EN 13492, *Geosynthetic barriers — Characteristics required for use in the construction of liquid waste disposal sites, transfer stations or secondary containment*

EN 13493, *Geosynthetic barriers — Characteristics required for use in the construction of solid waste storage and disposal sites*

EN 14150, *Geosynthetic barriers — Determination of permeability to liquids*

EN 14196, *Geosynthetics — Test methods for measuring mass per unit area of clay geosynthetic barriers*

EN 14414:2004, *Geosynthetics — Screening test method for determining chemical resistance for landfill applications*

EN 14415, *Geosynthetic barriers — Test method for determining the resistance to leaching*

CEN/TS 14416, *Geosynthetic barriers — Test method for determining the resistance to roots*

CEN/TS 14417, *Geosynthetic barriers — Test method for the determination of the influence of wetting-drying cycles on the permeability of clay geosynthetic barriers*

CEN/TS 14418, *Geosynthetic barriers — Test method for the determination of the influence of freezing-thawing cycles on the permeability of clay geosynthetic barriers*

EN 14575, *Geosynthetic barriers — Screening test method for determining the resistance to oxidation*

EN 14576, *Geosynthetics — Test method for determining the resistance of polymeric geosynthetic barriers to environmental stress cracking*

EN 16416, *Geosynthetic clay barriers — Determination of water flux index — Flexible wall permeameter method at constant head*

EN ISO 527-1:2012, *Plastics — Determination of tensile properties — Part 1: General principles (ISO 527-1:2012)*

EN ISO 527-3:1995, *Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets (ISO 527-3:1995)*

EN ISO 527-4:1997, *Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotopic fibre-reinforced plastic composites (ISO 527-4:1997)*

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 9864, *Geosynthetics — Test method for the determination of mass per unit area of geotextiles and geotextile-related products (ISO 9864)*

EN ISO 10318:2005, *Geosynthetics —Terms and definitions (IS0 10318:2005)*

EN ISO 10319, *Geotextiles — Wide-width tensile test (ISO 10319)*

EN ISO 10320, *Geotextiles and geotextile-related products — Identification on site (ISO 10320)*

EN ISO 12236, *Geosynthetics — Static puncture test (CBR test) (ISO 12236)*

EN ISO 12957-1, *Geosynthetics — Determination of friction characteristics — Part 1: Direct shear test (ISO 12957-1)*

EN ISO 12957-2, *Geosynthetics — Determination of friction characteristics — Part 2: Inclined plane test (ISO 12957-2)*

EN ISO 13438:2004, *Geotextiles and geotextile-related products — Screening test method for determining the resistance to oxidation (ISO 13438:2004)*

ISO 34-1:2010, *Rubber, vulcanized or thermoplastic — Determination of tear strength — Part 1: Trouser, angle and crescent test pieces*

EN ISO 11357-6, *Plastics — Differential scanning calorimetry (DSC) — Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT) (ISO 11357-6)*

ASTM D 696, *Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer*

ASTM D 1434, *Standard test method for determining gas permeability characteristics of plastic film and sheeting*

ASTM D 5890, *Standard test method for swell index of clay mineral component of geosynthetic clay liners*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 10318:2005 and the following apply.

3.1.1
product
geosynthetic barrier, including polymeric, bituminous and clay barriers

3.1.2
specification
document in which the works, functions, specific conditions and required material property values of the geosynthetic barrier of use are described

3.1.3
infrastructure
basic transportation system that is necessary for the operation of any kind of traffic

3.1.4
embankment shoulder
slope extending from the edge of a pavement to a linear ditch made of packed soil built above the natural ground

3.2 Abbreviations

For the purposes of this document, the abbreviations given in EN ISO 10318:2005 and the following apply.

GBR-P: polymeric geosynthetic barrier

GBR-B: bituminous geosynthetic barrier

GBR-C: clay geosynthetic barrier