SLOVENSKI STANDARD
SIST EN 13252:2014+A1:2015

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Geotekstilije in geotekstilijam sorodni izdelki - Značilnosti, ki se zahtevajo pri drenažnih sistemih

Geotextiles and geotextile-related products - Characteristics required for use in drainage systems

Geotextilien und geotextilverwandte Produkte - Geforderte Eigenschaften für die Anwendung in Dränanlagen

Géotextiles et produits apparentés - Caractéristiques requises pour l'utilisation dans les systèmes de drainage

Ta slovenski standard je istoveten z: **EN 13252:2014+A1:2015**

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Geotextiles and geotextile-related products - Characteristics required for use in drainage systems

Géotextiles et produits apparentés - Caractéristiques requises pour l'utilisation dans les systèmes de drainage

Geotextilien und geotextilverwandte Produkte - Geforderte Eigenschaften für die Anwendung in Dränanlagen

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

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Foreword

This document (EN 13252:2014+A1:2015) 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of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by November 2016.

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 [A1] EN 13252:2014 [A1].

This document includes Amendment 1 approved by CEN on 2014-12-13.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

Annex D 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 Regulation (EU) Nr. 305/2011.

For relationship with Regulation (EU) Nr. 305/2011, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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 geotextiles and geotextile-related products 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 the assessment and verification of constancy of performance and factory production control.

This European Standard may also be used by designers, end-users and other interested parties to define which functions and conditions of use are relevant.

The term “product” used in this European Standard refers to a geotextile or geotextile-related product.

This European Standard is part of a series of standards, addressing the requirements for geotextiles and geotextile-related products when used in a specific application. Annex C provides guidance on how to select the appropriate standard.

1 Scope

This European Standard specifies the relevant characteristics of geotextiles and geotextile-related products used in drainage systems and the appropriate test methods to determine these characteristics.

The intended use of these geotextiles or geotextile-related products is to fulfil one or more of the following functions: filtration, separation and drainage. The separation function is always used in conjunction with filtration or drainage. Accordingly, separation will never be specified alone.

This European Standard is not applicable to geosynthetic barriers, as defined in EN ISO 10318.

This European Standard provides for the assessment and verification of constancy of performance of the product to this European Standard and for factory production control procedures.

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

NOTE Particular application cases may contain requirements regarding additional properties and – preferably standardised – test methods, if they are technically relevant.

This European Standard may be used to derive design values by taking into account factors within the context of the definitions given in EN 1997-1 (Eurocode 7), e.g. factors of safety. 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.

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

EN 12226, *Geosynthetics - General tests for evaluation following durability testing*

EN 12447, *Geotextiles and geotextile-related products — Screening test method for determining the resistance to hydrolysis in water*

EN ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

A1⟩ EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)* ⟨A1

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

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

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

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

EN ISO 10321, *Geosynthetics — Tensile test for joints/seams by wide-width strip method (ISO 10321)*

EN ISO 10722, *Geosynthetics — Index test procedure for the evaluation of mechanical damage under repeated loading — Damage caused by granular material (ISO 10722)*

EN ISO 11058, *Geotextiles and geotextile-related products — Determination of water permeability characteristics normal to the plane, without load (ISO 11058)*

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

EN ISO 12956, *Geotextiles and geotextile-related products — Determination of the characteristic opening size (ISO 12956)*

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 12958, *Geotextiles and geotextile-related products — Determination of water flow capacity in their plane (ISO 12958)*

EN ISO 13426-1, *Geotextiles and geotextile-related products — Strength of internal structural junctions — Part 1: Geocells (ISO 13426-1)*

EN ISO 13426-2, *Geotextiles and geotextile-related products — Strength of internal structural junctions — Part 2: Geocomposites (ISO 13426-2)*

EN ISO 13433, *Geosynthetics — Dynamic perforation test (cone drop test) (ISO 13433)*

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

EN ISO 25619-1, *Geosynthetics — Determination of compression behaviour — Part 1: Compressive creep properties (ISO 25619-1)*

EN ISO 25619-2, *Geosynthetics — Determination of compression behaviour — Part 2: Determination of short-term compression behaviour (ISO 25619-2)*

ISO 10390:2005, *Soil quality — Determination of pH*

ASTM D7409 — 07e1, *Standard Test Method for Carboxyl End Group Content of Polyethylene Terephthalate (PET) Yarns*

ASTM D4603 — 03(2011)e1, *Standard Test Method for Determining Inherent Viscosity of Poly(Ethylene Terephthalate) (PET) by Glass Capillary Viscometer*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1
product
geotextile or geotextile-related product

3.1.2
specification
any document in which the work, functions and specific conditions of use of the product are described

3.1.3
drainage system
any system used in geotechnical or civil engineering applications, which includes a geotextile or geotextile-related product in contact at least on one side with soil and/or another material and/or a geosynthetic, for the intake and transportation of a fluid

3.1.4
rework material (RWM)
material that is generated in a process and capable of being reclaimed within the same process that generated it

3.1.5
post-consumer material (PCM)
material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain

3.1.6
post-industrial material (PIM)
material diverted from the waste stream during a manufacturing process

3.2 Abbreviations

For the purposes of this document, the abbreviations given in EN ISO 1043-1 and EN ISO 10318 and the following apply.

— AR: aramid

— GCO-D: geocomposite drainage

4 Required characteristics and corresponding methods of test

4.1 General

The main functions of geotextiles and geotextile-related products used in drainage systems are filtration, separation and drainage. If an erosion control system is integrated in the construction, the requirements of the appropriate standard shall also be fulfilled. As the separation function is always used in conjunction with another function, the separation function shall never be specified alone.

The specification shall define which functions and conditions of use are relevant (see Table 1). The producer of the product shall provide the necessary data based on the requirements and test methods described in this European Standard.

The characteristics, their relevance to the conditions of use, and the test methods to be used, are given in Table 1. The list of characteristics in Table 1 includes those needed for regulatory purposes (H), those relevant to all conditions of use (A), and those relevant to specific conditions of use (S). The indication "–" means that the characteristic is not relevant for that function.

Where, for the same property, data for more than one function shall be provided, the following ranking order shall be observed: H overrules A, A overrules S, and S overrules "–".

The functions and conditions of use, corresponding with the characteristics, marked with "S" in Table 1, are specified in 4.3.

When static puncture resistance, dynamic perforation resistance, characteristic opening size and/or permeability normal to the plane are required for composite products, these requirements shall only apply to the filter layers and each filter layer shall be tested separately if they are different.

The producer of the geotextile or geotextile-related product shall provide the data based on the results of tests specified in this European Standard, as described in 5.1.

NOTE If filtration properties cannot be measured on a geocomposite, the filtration-related performance of the product is expressed as the performance of the single layer for the following characteristics:

— dynamic perforation;

— opening size;

— water permeability.

Durability shall be assessed in accordance with the requirements of Annex B.

4.2 Selection of the appropriate standard in a specific application

Guidelines for the selection of the appropriate standard in a specific application are given in Annex C.

Table 1 — Geotextiles and geotextile-related products used in the construction of drainage systems– Functions, function-related characteristics and test methods to be used

Characteristic	Test method	Functions		
		Filtration	Separation	Drainage
(1) Tensile strength [b)]	EN ISO 10319	H	H	H
(2) Elongation at maximum load	EN ISO 10319	H	H	H
(3) Compression strength under load	EN ISO 25619-2	–	–	S
(4) Tensile strength of seams and joints [c) d)]	EN ISO 10321	S	S	S
(5) Tensile strength of internal junction (of GCO)	EN ISO 13426-2	–	–	S
(6) Static puncture resistance (CBR test) [a) b)]	EN ISO 12236	S	H	- -
(7) Dynamic perforation resistance (cone drop test) [a)]	EN ISO 13433	H	A	- -
(8) Friction characteristics	EN ISO 12957-1, EN ISO 12957-2	S	S	S
(9) Compressive creep characteristics	EN ISO 25619-1	–	–	A
(10) Damage during installation resistance	EN ISO 10722	A	A	A
(11) Characteristic opening size	EN ISO 12956	H	H	- -
(12) Water permeability normal to the plane	EN ISO 11058	H	H	- -
(13) Water flow capacity in the plane (soft/soft)	EN ISO 12958	- -	- -	H
(14) Water flow capacity in the plane (soft/rigid or rigid/rigid)	EN ISO 12958	–	–	S
(15) Durability characteristics	According to Annex B	H	H	H

Relevance:

H: required for regulatory purposes

A: relevant to all conditions of use

S: relevant to specific conditions of use

"–": indicates that the characteristic is not relevant for that function.

[a] Static or dynamic puncture resistance may not be relevant for some types of products, e.g. GCO-D.

[b] If the mechanical properties (tensile strength and static puncture) are coded "H" in this Table, the producer shall provide data for both. The use of only one, either tensile strength or static puncture resistance, is sufficient in a tender specification.

[c] The strength of internal structural junctions of geocells shall be tested in accordance with EN ISO 13426-1.

[d] The strength of internal structural junctions of geocomposites shall be tested in accordance with EN ISO 13426-2.