PD CEN/TS 17445:2021

BSI Standards Publication

Geosynthetics — Standard test for the simulation of rainfall-induced erosion on the surface of a slope protected by geosynthetic erosion control products

Currently in preview, click buy full version

bsi.

National foreword

This Published Document is the UK implementation of CEN/TS 17445:2021.

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 committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2021
Published by BSI Standards Limited 2021

ISBN 978 0 539 05905 2

ICS 59.080.70

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 March 2021.

Amendments/corrigenda issued since publication

Date	Text affected

urrently in preview, click buy full versi

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 17445

March 2021

ICS 59.080.70

English Version

Geosynthetics - Standard test for the simulation of rainfall-induced erosion on the surface of a slope protected by geosynthetic erosion control products

Géosynthétiques - Essai normalisé de simulation de l'érosion induite par la pluie à la surface d'une pente protégée par des produits géosynthétiques de lutte contre l'érosion

Geokunststoffe - Prüfverfahren zur Simulation von durch Niederschlag hervorgerufener Erosion an geosynthetischen Erosionsschutzprodukten

This Technical Specification (CEN/TS) was approved by CEN on 11 January 2021 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.

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

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

© 2021 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. CEN/TS 17445:2021 E

Currently in preview, click buy full version

Contents

Page

European foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 5

4 Principle 7

5 Apparatus 7
5.1 Slope simulator 7
5.2 Runoff and Sediment Collection System 8
5.3 Rainfall simulator 8
5.3.1 General 8
5.3.2 Water source 8
5.4 Disdrometer 9

6 Soil 9

7 Specimens 9

8 Conditioning 10

9 Calibration 10
9.1 Setting the rainfall intensity gauges 10
9.1.1 General 10
9.2 Rainfall intensity calibration 10
9.3 Disdrometer preparation 10
9.4 Rainfall calibration 11
9.5 Recording of data 11
9.6 Calculation and expression of results 11
9.7 Calculate the theoretical values 12
9.7.1 Calculate the theoretical values 12
9.7.2 Calculate the theoretical Kinetic Energy 12
9.7.3 Calculate the terminal velocity v_t 12
9.8 Calibration check 12
9.8.1 The apparatus shall be considered as satisfactorily calibrated if 12
9.8.2 The apparatus is considered satisfactorily calibrated 12
9.8.3 The apparatus is not considered satisfactorily calibrated 12
9.9 Calibration Frequency 13

10 Procedure 13
10.1 Slope simulator preparation 13
10.2 Rainfall simulator preparation 14
10.3 Test Operation and Data Collection 14

11 Test report 15
11.1 Pre-Test Documentation 15
11.2 The test report shall include the following information 15

Annex A (informative) Typical apparatus 25

Annex B (informative) Modifications to the standard procedure 28

Currently in preview, click buy full version

Annex C (informative) Calculation and expression of results **29**
Annex D (informative) Evaluation of the C Factor of RUSLE (Revised Universal Soil Loss Equation) **31**
Bibliography **35**

urrently in preview, click buy full versi

European foreword

This document (CEN/TS 17445:2021) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by NBN.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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, Turkey and the United Kingdom.

urrently in preview, click buy full versi

1 Scope

This document specifies an index test method for the simulation of rainfall-induced erosion on the surface of a slope protected by geosynthetic erosion control products.

The test is normally carried out on specimens conditioned under a specified atmosphere.

The test is applicable to most geosynthetics, but is especially suited to geosynthetic erosion control products.

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 13286-2, *Unbound and hydraulically bound mixtures - Part 2: Test methods for laboratory reference density and water content - Proctor compaction*

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

EN ISO 10318-1, *Geosynthetics - Part 1: Terms and definitions (ISO 10318-1)*

EN ISO 11074, *Soil quality - Vocabulary (ISO 11074)*

EN ISO 14688-1, *Geotechnical investigation and testing - Identification and classification of soil - Part 1: Identification and description (ISO 14688-1)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 10318-1, EN ISO 14688-1, EN ISO 11074, and the following apply.

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 https://www.iso.org/obp/ui

3.1
disdrometer
laser-optical source that produces a parallel light-beam

NOTE to entry: The instrument determines the size and fall speed of rain drops by measuring the signal reduction caused by the drop falling through the light-beam; the amplitude and duration of the reduced signal is used to estimate the drop size and fall speed, respectively

3.2
test series
test repetitions including at least one test with and without geosynthetic specimens placed in the test box

Currently in preview, click buy full version