Rubber- or plastics-coated fabrics - Mechanical test methods under biaxial stress states - Part 2: Determination of the pattern compensation values

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17117-2:2021 sisaldab Euroopa standardi EN 17117-2:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 17117-2:2021 consists of the English text of the European standard EN 17117-2:2021.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 28.07.2021.	Date of Availability of the European standard is 28.07.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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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EUROPEAN STANDARD

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English Version

Rubber- or plastics-coated fabrics - Mechanical test methods under biaxial stress states - Part 2: Determination of the pattern compensation values

Supports textiles revêtus de caoutchouc ou de plastique - Méthodes d'essais mécaniques sous contraintes biaxiales - Partie 2: Détermination des valeurs de compensation du patronnage

Mit Kautschuk oder Kunststoff beschichtete Textilien - Mechanische Prüfverfahren unter biaxialen Spannungszuständen - Teil 2: Bestimmung der Kompensationswerte

This European Standard was approved by CEN on 21 June 2021.

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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 17117-2:2021) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by January 2022, and conflicting national standards shall be withdrawn at the latest by January 2022.

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

EN 17117 consists of the following parts, under the general title *Rubber- or plastics-coated fabrics — Mechanical test methods under biaxial stress states*:

— *Part 1: Tensile stiffness properties*

— *Part 2: Determination of the pattern compensation values*

An additional part related to shear stiffness properties will be proposed after the publication of the previous parts.

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, Turkey and the United Kingdom.

Introduction

Compensation is the process of reducing the size of cutting patterns with the objective to introduce and maintain the desired range of prestress specified in the structural design using coated fabrics such as architectural tensioned envelopes. Elastic strain correspondent to the prestress and irreversible strain of the coated fabrics induced by tensioning during installation and potential load incidents over the lifetime of an architectural tensioned envelope, should be compensated to achieve the objective. Different compensation values may be applied to different parts of the same architectural tensioned envelope. Decompensation may also be applied if required.

1 Scope

This document describes methods for the determination of compensation values for orthotropic coated fabrics (different properties along ideally perpendicular directions, such as the weft and warp yarns for woven based coated fabrics, or along the courses and wales of knitted based coated fabrics) for determining cutting patterns.

NOTE The final interpretation and the determination of the compensation values remains the responsibility of the project engineer.

Annex C describes a method to determine comparable measures of extensibility along ideally perpendicular directions of coated fabrics. The comparable measures of extensibility can be used by design engineers to assess the extensibility of a coated fabric by comparison with other coated fabrics. In this way, they can help to interpret results of compensation tests. Moreover, they can be used by material suppliers to measure the consistency of extensibility along perpendicular directions of a coated fabric from batch to batch.

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 17117-1, *Rubber or plastics-coated fabrics - Mechanical test methods under biaxial stress states - Part 1: Tensile stiffness properties*

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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
biaxial
measurement or application along two axes simultaneously

[SOURCE: EN 17117-1:2018, 3.1]

3.2
compensation
reduction in size of a cutting pattern, so that during installation the panel elongates to achieve an initial nominal prestress

3.3
compensation value
amount by which the dimensions of the pattern geometry is reduced by compensation

Note 1 to entry: The compensation value is expressed as a percentage of length in the direction to be compensated.