

**Painduvad hüdroisolatsioonimaterjalid.  
Aluskatete määratlused ja omadused.  
Osa 1: Tükkmaterjalidest katuste aluskatted**

**Flexible sheets for waterproofing -  
Definitions and characteristics of underlays -  
Part 1: Underlays for discontinuous roofing**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|                                                                                                                     |                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| See Eesti standard EVS-EN 13859-1:2014 sisaldab Euroopa standardi EN 13859-1:2014 inglisekeelset teksti.            | This Estonian standard EVS-EN 13859-1:2014 consists of the English text of the European standard EN 13859-1:2014.                  |
| 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 30.04.2014. | Date of Availability of the European standard is 30.04.2014.                                                                       |
| 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](mailto:standardiosakond@evs.ee).

ICS 91.100.50

### Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

### The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:  
Aru 10, 10317 Tallinn, Estonia; [www.evs.ee](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing

Feuilles souples d'étanchéité - Définitions et  
caractéristiques des écrans souples - Partie 1 : Écrans  
souples de sous-toiture pour couverture en petits éléments  
discontinus

Abdichtungsbahnen - Definitionen und Eigenschaften von  
Unterdeck- und Unterspannbahnen - Teil 1: Unterdeck- und  
Unterspannbahnen für Dachdeckungen

This European Standard was approved by CEN on 16 February 2014.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

|                                                                            |    |
|----------------------------------------------------------------------------|----|
| Foreword.....                                                              | 4  |
| 1 Scope .....                                                              | 5  |
| 2 Normative references .....                                               | 5  |
| 3 Terms and definitions .....                                              | 6  |
| 4 Product characteristics .....                                            | 7  |
| 4.1 General.....                                                           | 7  |
| 4.2 Dimensions, straightness and mass per unit area.....                   | 7  |
| 4.3 Application related characteristics .....                              | 7  |
| 4.4 Dangerous substances .....                                             | 8  |
| 5 Testing .....                                                            | 9  |
| 5.1 Sampling.....                                                          | 9  |
| 5.2 Test methods.....                                                      | 9  |
| 6 Assessment and verification of the constancy of performance – AVCP ..... | 11 |
| 6.1 General.....                                                           | 11 |
| 6.2 Type testing.....                                                      | 11 |
| 6.3 Factory production control (FPC) .....                                 | 12 |
| 7 Product data sheet.....                                                  | 16 |
| 8 Marking, labelling and packaging .....                                   | 16 |
| Annex A (normative) Determination of tensile properties.....               | 18 |
| A.1 General.....                                                           | 18 |
| A.2 Apparatus .....                                                        | 18 |
| A.3 Sampling.....                                                          | 18 |
| A.4 Preparation of test specimens .....                                    | 18 |
| A.5 Procedure .....                                                        | 18 |
| A.6 Expression and evaluation of results.....                              | 19 |
| A.7 Test report .....                                                      | 20 |
| Annex B (normative) Determination of resistance to tearing .....           | 21 |
| B.1 General.....                                                           | 21 |
| B.2 Apparatus .....                                                        | 21 |
| B.3 Sampling.....                                                          | 21 |
| B.4 Preparation of test specimens .....                                    | 21 |
| B.5 Procedure .....                                                        | 21 |
| B.6 Expression and evaluation of results.....                              | 22 |
| B.7 Test report .....                                                      | 22 |
| Annex C (normative) Artificial ageing by exposure to UV and heat.....      | 23 |
| C.1 General.....                                                           | 23 |

|                               |                                                                                                                      |           |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------|
| <b>C.2</b>                    | <b>Principle.....</b>                                                                                                | <b>23</b> |
| <b>C.3</b>                    | <b>Apparatus .....</b>                                                                                               | <b>23</b> |
| <b>C.4</b>                    | <b>Preparation of test specimens .....</b>                                                                           | <b>23</b> |
| <b>C.5</b>                    | <b>Procedure .....</b>                                                                                               | <b>24</b> |
| <b>C.6</b>                    | <b>Expression of results .....</b>                                                                                   | <b>24</b> |
| <b>C.7</b>                    | <b>Test report.....</b>                                                                                              | <b>24</b> |
| <b>Annex D (normative)</b>    | <b>Product type determination and frequencies of testing for factory production control.....</b>                     | <b>26</b> |
| <b>Annex E (informative)</b>  | <b>Example of a product data sheet.....</b>                                                                          | <b>28</b> |
| <b>Annex F (normative)</b>    | <b>Determination of the watertightness of seams .....</b>                                                            | <b>30</b> |
| <b>F.1</b>                    | <b>General .....</b>                                                                                                 | <b>30</b> |
| <b>F.2</b>                    | <b>Terms and definitions .....</b>                                                                                   | <b>30</b> |
| <b>F.3</b>                    | <b>Procedure .....</b>                                                                                               | <b>30</b> |
| <b>F.4</b>                    | <b>Apparatus .....</b>                                                                                               | <b>30</b> |
| <b>F.5</b>                    | <b>Preparation of the test specimens.....</b>                                                                        | <b>30</b> |
| <b>F.6</b>                    | <b>Procedure .....</b>                                                                                               | <b>31</b> |
| <b>F.7</b>                    | <b>Evaluation.....</b>                                                                                               | <b>31</b> |
| <b>F.8</b>                    | <b>Test report.....</b>                                                                                              | <b>31</b> |
| <b>Annex ZA (informative)</b> | <b>Clauses of this European Standard addressing provisions of the EU Construction Products Regulation (CPR).....</b> | <b>32</b> |
| <b>ZA.1</b>                   | <b>Scope and relevant characteristics .....</b>                                                                      | <b>32</b> |
| <b>ZA.2</b>                   | <b>Procedures for AVPC of the flexible sheets for underlays .....</b>                                                | <b>33</b> |
| <b>ZA.2.1</b>                 | <b>Systems of AVPC .....</b>                                                                                         | <b>33</b> |
| <b>ZA.2.2</b>                 | <b>Declaration of performance (DoP) .....</b>                                                                        | <b>35</b> |
| <b>ZA.2.2.1</b>               | <b>General.....</b>                                                                                                  | <b>35</b> |
| <b>ZA.2.2.2</b>               | <b>Content.....</b>                                                                                                  | <b>36</b> |
| <b>ZA.2.2.3</b>               | <b>Example of DoP.....</b>                                                                                           | <b>37</b> |
| <b>ZA.3</b>                   | <b>CE marking and labelling.....</b>                                                                                 | <b>39</b> |
| <b>Bibliography.....</b>      |                                                                                                                      | <b>42</b> |

## Foreword

This document (EN 13859-1:2014) has been prepared by Technical Committee CEN/TC 254 "Flexible sheets for waterproofing", the secretariat of which is held by NEN.

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 October 2014 and conflicting national standards shall be withdrawn at the latest by October 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 13859-1:2010.

The main technical changes that have been made in this new edition are as follows:

- a) the application-related characteristic 'emissivity' has been added;
- b) the wording and the Annex ZA have been adapted to the CPR.

EN 13859, *Flexible sheets for waterproofing — Definitions and characteristics of underlays*, is composed of the following parts:

- *Part 1: Underlays for discontinuous roofing* (the present document);
- *Part 2: Underlays for walls*.

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) No. 305/2011.

For relationship with Regulation (EU) No. 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.

## 1 Scope

This European standard specifies the characteristics of flexible sheets for underlays which are to be used under roof covering of discontinuous roofs. It specifies the requirements and test methods and provides for the evaluation of conformity of the products with the requirements of this document.

## 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 1107-1, *Flexible sheets for waterproofing - Part 1: Bitumen sheets for roof waterproofing - Determination of dimensional stability*

EN 1107-2, *Flexible sheets for waterproofing - Determination of dimensional stability - Part 2: 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 1296, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roofing - Method of artificial ageing by long term exposure to elevated temperature*

EN 1297, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water*

EN 1848-1, *Flexible sheets for waterproofing - Determination of length, width and straightness - Part 1: Bitumen sheets for roof waterproofing*

EN 1848-2, *Flexible sheets for waterproofing - Determination of length, width, straightness and flatness - Part 2: 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 1928:2000, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness*

EN 1931, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of water vapour transmission properties*

EN 12310-1:1999, *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 13111, *Flexible sheets for waterproofing - Underlays for discontinuous roofing and walls - Determination of resistance to water penetration*

EN 13416:2001, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling*

EN 13501-1:2007+A1:2009, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 13859-2:2014, *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Part 2: Underlays for walls*

EN 15976, *Flexible sheets for waterproofing - Determination of emissivity*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2010)*

EN ISO 12572, *Hygrothermal performance of building materials and products - Determination of water vapour transmission properties (ISO 12572:2001)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13416:2001 and the following apply.

- 3.1**  
**manufacturer's declared value**  
**MDV**  
value declared by the manufacturer accompanied by a declared tolerance
- 3.2**  
**manufacturer's limiting value**  
**MLV**  
value stated by the manufacturer to be met during testing, that can be a minimum or a maximum value according to statements made under product characteristics of this document
- 3.3**  
**sample**  
sheet from which a test piece is taken
- 3.4**  
**sampling**  
procedure used to select or constitute a sample
- 3.5**  
**test piece**  
part of the sample from which test specimens are taken
- 3.6**  
**test specimen**  
piece of precise dimensions taken from the test piece
- 3.7**  
**underlays for discontinuous roofing**  
factory-made flexible sheets of plastics, bitumen, rubber or other suitable materials, which are used as underlay to coverings of sloping roofs (e.g. tiles, slates)
- 3.8**  
**waterproofing**  
action to prevent the passage of water from one plane to another