SLOVENSKI STANDARD
oSIST prEN 1931:2026

01-oktober-2026

Hidroizolacijski trakovi - Bitumenski, polimerni in elastomerni trakovi za tesnjenje streh - Določanje lastnosti pri prehodu vodne pare

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

Abdichtungsbahnen - Bitumen-, Kunststoff-, und Elastomerbahnen für Dachabdichtungen - Bestimmung der Wasserdampfdurchlässigkeit

Feuilles souples d'étanchéité - Feuilles d'étanchéité de toiture bitumineuses, plastiques et élastomères - Détermination des propriétés de transmission de la vapeur d'eau

Ta slovenski standard je istoveten z: **prEN 1931**

ICS:

91.060.20	Strehe	Roofs
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

oSIST prEN 1931:2026 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT prEN 1931

August 2026

ICS 91.100.50

Will supersede EN 1931:2000

English Version

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

Feuilles souples d'étanchéité - Feuilles d'étanchéité de toiture bitumineuses, plastiques et élastomères - Détermination des propriétés de transmission de la vapeur d'eau

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 254.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 1931:2026) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1931:2000 and EN 1931:2000/AC:2001.

Compared to EN 1931:2000 and EN 1931:2000/AC:2001 the following changes have been made:

— Introduction: Definition of a range of *sd*-values for which the given method is applicable;

— Clause 1 Scope: General rewording and extension of the range of products for which the given method is applicable;

— Clause 2 Normative references: updated;

— Clause 3 Terms and definitions: the used terms and definitions are updated and aligned with other standards for the determination of water vapour transmission properties;

— New Clause 4 Symbols and units: Updated;

— Clause 5 Principle (old Clause 4): Deletion of method A and B;

— Clause 6 Apparatus (old Clause 5): Update of figures and description of the apparatus including updates concerning accuracy;

— Clause 7 Sampling (old Clause 6): Updated reference including provisions for pre-conditioning;

— Clause 8 Preparation of test specimens (old Clause 7): Deletion of method A and B; increase of minimum number of test specimens, informative information concerning distribution of specimens within the product;

— Clause 9 Procedure (old Clause 8): Reference to Annex A for test conditions useful for moisture adaptive vapour control layers; introduction of provisions for the weighing interval; calculation of the compensated mass change; definition of steady state;

— Clause 10 Expression of results (old Clause 9): new structure for the calculation of sd and μ; introduction of the water vapour resistance at standard barometric pressure; deletion of the precision of test method (allocated to the new Annex F);

— Clause 11 Test report (old Clause 10): Update of the mandatory results to be indicated in the test report;

— New Annex A: Test conditions and definitions for moisture adaptive vapour control layers (normative);

— New Annex B: Weighing repeatability and weighing interval needed to achieve the desired accuracy (normative);

— New Annex C: Correction for the effect of a masked edge of a specimen (normative);

— New Annex D: Recommendations for the use of μ-value and *sd*-value and definition of product families (informative);

— New Annex E: Exemplary calculation (informative);

— New Annex F: Precision data (informative);

— Bibliography: Updated references.

Introduction

This document has been prepared by the Technical Committee CEN/TC 254 to determine the water vapour transmission properties of flexible sheets for waterproofing.

This document has been prepared for factory produced waterproofing sheets but it may also be used for other products where it is relevant.

The method provided by this document is applicable for *sd*-values of 0,1 m to 1 500 m.

This document is intended for characterization of flexible sheets for waterproofing as manufactured or supplied before use. This document relates exclusively to products and not to waterproofing membrane systems composed of such products and installed in the works.

1 Scope

This document specifies a method for the determination of the water vapour transmission properties of waterproofing sheets. It is applicable to factory made bitumen, plastic and rubber sheets for roof waterproofing, damp proof sheets, damp proof courses, underlays and vapour control layers.

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 13416:2023, Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling

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 for roof waterproofing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

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

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

3.1
mass change rate
mass of water vapour transmitted through the test assembly per time under specified conditions of temperature and humidity

3.2
density of water vapour flow rate
mass of water vapour transmitted through a unit area of the test specimen per time under specified conditions of temperature and humidity

3.3
water vapour permeance
density of water vapour flow rate divided by the water vapour pressure difference between the two test specimen faces

3.4
water vapour permeability
product of water vapour permeance and the thickness of the test specimen

3.5
water vapour resistance factor
water vapour permeability of the air divided by that of the test specimen

3.6
water vapour diffusion-equivalent air layer thickness
thickness of a motionless air layer which has the same water vapour resistance as the test specimen

3.7
sample
sheet with original packaging as placed on the market

3.8
test piece
part of the sample from which the test specimens are taken

3.9
test specimen
specimen extracted from the test piece with defined dimensions

3.10
test assembly
assembly made of the test cup, sorbent, sealing and test specimen ready for testing

Note 1 to entry: Test assemblies prepared without sorbent, salt solution or water are called blank test assemblies.

3.11
exposed area
effective area of the test specimen that is exposed to the water vapour diffusion flow as used for the calculation of results

3.12
moisture adaptive vapour control layer (VCL)
VCL designed to have variable diffusion resistance dependent on the surrounding relative humidity

3.13
average relative humidity
mean relative humidity of the relative humidity couples used during the test defining the mean moisture content of the test specimen

3.15
difference of relative humidity
difference of relative humidity between relative humidity couples used during the test

4 Symbols and units

For the purposes of this document, the following symbols and units apply.

Symbol	Quantity	Unit
m_n	n^{th} mass of the test assembly	kg
$m_{n,b}$	n^{th} mass of the blank test assembly	kg
Δt_i	Time interval between two consecutive weighing's of the test assembly	s
$\Delta \dot{m}_i$	Blank compensated mass change rate through the specimen	kg/s

G	Water vapour flow rate through the specimen in steady state conditions	kg/s
g	Density of water vapour flow rate	kg/(s·m²)
A	Exposed area of the test specimen	m²
Wp	Water vapour permeance	kg/(s·m²·Pa)
Δp_v	Water vapour partial pressure difference	Pa
p_v	Water vapour partial pressure	Pa
φ	Relative humidity	-
θ	Temperature	°C
T	Absolute temperature	K
Z_{STP}	Water vapour resistance at standard barometric pressure	(s·m²·Pa)/kg
s_d	Water vapour diffusion-equivalent air layer thickness	m
$\delta_{a,STP}$	Water vapour permeability of the air at standard barometric pressure	kg/(m·s·Pa)
p_0	Standard barometric pressure = 1 013,25	hPa
p	Mean barometric pressure within the observed time frame	hPa
R_D	Gas constant of water vapour = 461,5	N·m/(kg·K)
δ	Water vapour permeability	kg/(m·s·Pa)
d	Thickness of the specimen	m
μ	Water vapour resistance factor	-

5 Principle

The test specimen is sealed to the open side of a test cup containing either a desiccant (dry cup) or an aqueous saturated solution or water (wet cup). The assembly is then placed in a temperature and humidity-controlled test chamber. Because of the different partial vapour pressure between the test cup and the chamber, a vapour flow occurs through permeable specimens. Periodic weighings of the assembly are made to determine the water vapour flow rate in the steady-state to calculate water vapour transmission properties. Information about the precision of the method is included in the informative Annex F.

6 Apparatus

6.1 Test cups

Test cups resistant to corrosion from the desiccant or salt solutions they contain with a minimum free test area of at least 0,005 m². Distance between the bottom of the cup and the lower surface of the specimen shall be minimum 16 mm. It is essential that the test assembly provides a well-defined exposed

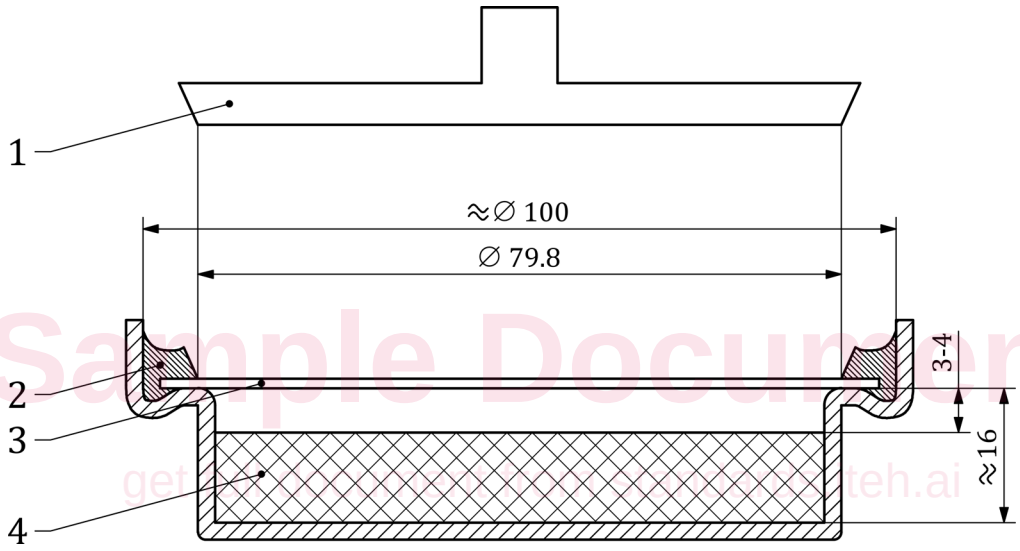
area on the upper specimen surface free of sealant. Total weight of specimen-mounted cup and desiccant or salt solution as shown in Figure 1 must not exceed capability of the analytical balance used.

NOTE 1 The water vapour permeability of the test cup must be significantly lower than the water vapour permeability of the specimen tested. Typically, cups are made of glass or metal. For water proofing membranes preferably test cups made of pure, cold drawn aluminium of 1 mm thickness are used.

NOTE 2 In case of using salt solutions, corrosion and crystallization effects can occur. For more information see Annex A.

NOTE 3 In case of deep test cups, the use of spacers made of lightweight non-hygroscopic materials on the bottom (e.g. open foam material) helps to limit the use of desiccant to the necessary amount of minimum 12 mm height.

Dimensions in millimetres



Key

1 inner template
2 sealing (see 6.7)
3 test specimen
4 desiccant (see 6.6)

Figure 1 — Example for a test assembly consisting of an aluminium cup with a sealed test specimen and an absorption atmosphere with an exposed area formed by an inner template

6.2 Mechanical gauge

Mechanical gauge to determine the thickness of test specimens with a resolution of 0,01 mm.

6.3 Analytical balance

Analytical balance, capable of weighing the test assembly with the repeatability needed for the required accuracy.

Wherever possible, a balance of 0,000 1 g resolution should be used. For heavy test assemblies, a balance resolution of 0,001 g may be sufficient. (see Annex B for information linking the balance resolution to the duration of test).

NOTE The factors that affect the necessary accuracy of measurement are discussed in Annex B.