SLOVENSKI STANDARD
oSIST prEN ISO 12572:2015

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Higrotermalno obnašanje gradbenih materialov in proizvodov - Ugotavljanje lastnosti za prehod vodne pare (ISO/DIS 12572:2014)

Hygrothermal performance of building materials and products - Determination of water vapour transmission properties (ISO/DIS 12572:2014)

Wärme und feuchtetechnisches Verhalten von Baustoffen und Bauprodukten - Bestimmung der Wasserdampfdurchlässigkeit (ISO/DIS 12572:2014)

Performance hygrothermique des matériaux et produits pour le bâtiment - Détermination des propriétés de transmission de la vapeur d'eau (ISO/DIS 12572:2014)

Ta slovenski standard je istoveten z: **prEN ISO 12572**

ICS:

91.100.01	Gradbeni materiali na splošno	Construction materials in general
91.120.30	Zaščita pred vlago	Waterproofing

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DRAFT INTERNATIONAL STANDARD

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Hygrothermal performance of building materials and products — Determination of water vapour transmission properties

Performance hygrothermique des matériaux et produits pour le bâtiment — Détermination des propriétés de transmission de la vapeur d'eau

ICS: 91.120.10

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Reference number
ISO/DIS 12572:2014(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12572 was prepared by Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 1, and by Technical Committee CEN/TC 89, *Thermal performance of buildings and building components* in collaboration.

This second edition cancels and replaces the first edition (EN ISO 12572:2001), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

This standard is one of a series of standards which specify test methods for the thermal and moisture related properties of building materials and products.

The European publications to be used instead of the International Standards listed in clause 2 are given in normative annex ZA, which is an integral part of this European Standard.

Hygrothermal performance of building materials and products — Determination of water vapour transmission properties

1 Scope

This standard specifies a method based on cup tests for determining the water vapour permeance of building products and the water vapour permeability of building materials under isothermal conditions. Different sets of test conditions are specified.

The general principles are applicable to all hygroscopic and non-hygroscopic building materials and products, including those with facings and integral skins. Annexes give details of test methods suitable for different material types. If the measured water vapour diffusion-equivalent air layer thickness is greater than 1500 m the material can be considered impermeable.

The results obtained by this method are suitable for design purposes, production control and for inclusion in product specifications.

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.

ISO 9346, *Hygrothermal performance of buildings and building materials - Physical quantities for mass transfer - Vocabulary*

3 Definitions, symbols and units

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9346 and the following apply.

3.1.1
density of water vapour flow rate
mass of water vapour transferred through the specimen per area and per time

3.1.2
homogeneous material
material with properties likely to affect the transmission of water vapour which do not vary on a macroscopic scale

3.1.3
water vapour permeance
density of water vapour flow rate divided by the water vapour pressure difference between the two specimen faces

3.1.4
water vapour resistance
reciprocal of water vapour permeance

3.1.5
water vapour permeability
product of the water vapour permeance and the thickness of a homogeneous specimen

NOTE Water vapour permeability can only be calculated for specimens of a homogeneous material.

3.1.6
water vapour resistance factor
water vapour permeability of air divided by that of the material concerned

NOTE The water vapour resistance factor indicates how much greater the resistance of the material is compared to an equally thick layer of stationary air at the same temperature.

3.1.7
water vapour diffusion-equivalent air layer thickness
thickness of a motionless air layer which has the same water vapour resistance as the specimen

3.2 Symbols and units

Symbol	Quantity	Unit
A	area of specimen	m^2
G	water vapour flow rate through specimen	kg/s
R_v	gas constant for water vapour = 462	N·m/(kg·K)
S	hydraulic diameter of specimen	m
T	thermodynamic temperature	K
W_p	water vapour permeance with respect to partial vapour pressure	kg/(m²·s·Pa)
Z_p	water vapour resistance with respect to partial vapour pressure	m²·s·Pa/kg
D	mean thickness of specimen	m
g	density of water vapour flow rate	kg/(m²·s)
l	diameter of circle or side of square specimen	m
m	mass of specimen and cup assembly	kg
p	barometric pressure	hPa
p_0	standard barometric pressure = 1013,25	hPa
sError! Objects cannot be created from editing field codes.	water vapour diffusion-equivalent air layer thickness	m
t	Time	s
Δp_v	water vapour pressure difference across specimen	Pa
δ_p	water vapour permeability	kg/(m·s·Pa)
δError! Objects cannot be created from editing field codes.	water vapour permeability of air	kg/(m·s·Pa)
μ	water vapour resistance factor	-
θ	celsius temperature	°C
φ	relative humidity	-

NOTE The above units comply with ISO 9346; a conversion table to other units commonly used in permeability measurements is given in annex J.