



BSI Standards Publication

Paints and varnishes — Coating materials and coating systems for exterior wood

Part 5: Assessment of the liquid water permeability

National foreword

This British Standard is the UK implementation of EN 927-5:2023. It supersedes BS EN 927-5:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee STI/28, Paint systems for non-metallic substrates.

A list of organizations represented on this committee can be obtained on request to its committee manager.

The UK committee would like to bring to the attention of users that during the CEN review process preceding the publication of EN 927-5:2023, an issue was raised but not addressed regarding a discrepancy between the units (grams per square meter and millilitre per square meter) used to describe spreading rate in Subclause B.5, as well as Tables B.1 and B.2.

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Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Paints and varnishes - Coating materials and coating systems for exterior wood - Part 5: Assessment of the liquid water permeability

Peintures et vernis - Produits de peinture et systèmes de peinture pour le bois en extérieur - Partie 5 : Détermination de la perméabilité à l'eau liquide

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Teil 5: Beurteilung der Wasserdurchlässigkeit

This European Standard was approved by CEN on 30 April 2023.

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European foreword

This document (EN 927-5:2023) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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.

This document supersedes EN 927-5:2006.

EN 927-5:2023 includes the following significant technical changes with respect to EN 927-5:2006:

- the selection and preparation of test panels has been clarified;
- Annex A has been rewritten to better describe the link between water absorption and end use categories.

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.

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Introduction

The treatment of exterior wood surfaces has both aesthetic and protective functions. A vital purpose of a coating system is to protect the wood against aesthetic deterioration (e.g. blue stain attack) and dimensional changes. Because such attacks are mainly caused by high moisture contents in the wood, a knowledge of the relative water permeability properties of coating materials applied to exterior wood is helpful in selecting products for particular end-use applications, as described in EN 927-1.

1 Scope

This document specifies a test method for assessing the liquid water permeability of coating systems for exterior wood.

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 ISO 2808:2019, *Paints and varnishes — Determination of film thickness (ISO 2808:2019)*

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

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:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

water absorption

ability of a coated or uncoated wood panel to absorb water from liquid or vapour

3.2

water permeability

ability of a coating system to allow the transmission of water as liquid or vapour

[SOURCE: EN 927-1:2013, 3.13]

3.3

stable mass

mass achieved when the difference between two subsequent weighings within 24 h does not exceed 0,2 %

4 Principle

Water permeability is assessed by measuring the water uptake over a 72 h period of a coated test panel exposed to liquid water.

The coating under test is applied to the face of a defined test panel where the remaining face and sides are carefully sealed using a sealer of a defined mandatory low permeability.

Results are expressed as water absorption of coated wood panels in grams per square metre test surface per 72 h.