

STN P	Náterové látky Náterové látky a náterové systémy na drevo používané vo vonkajšom prostredí Časť 9: Stanovenie pevnosti v odtrhnutí	STN P CEN/TS 927-9 67 2010
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Paints and varnishes - Coating materials and coating systems for exterior wood - Part 9: Determination of pull-off strength

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/23

Táto predbežná slovenská technická norma je určená na overenie. Prípadné pripomienky pošlite do januára 2025 Úradu pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky.

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English Version

**Paints and varnishes - Coating materials and coating
systems for exterior wood - Part 9: Determination of pull-
off strength**

Peintures et vernis - Produits de peinture et systèmes
de peinture pour le bois extérieur - Partie 9 :
Détermination de la résistance à l'arrachement

Beschichtungsstoffe - Beschichtungsstoffe und
Beschichtungssysteme für Holz im Außenbereich - Teil
9: Bestimmung der Abreißfestigkeit

This Technical Specification (CEN/TS) was approved by CEN on 18 December 2022 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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

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CEN/TS 927-9:2023 (E)

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European foreword

This document (CEN/TS 927-9:2023) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

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 CEN/TS 927-9:2018.

CEN/TS 927-9:2023 includes the following significant technical changes with respect to CEN/TS 927-9:2018:

— the title has been modified.

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 announce this Technical Specification: 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, Türkiye and the United Kingdom.

CEN/TS 927-9:2023 (E)**Introduction**

This document is one of two methods for assessing the resistance of the coating system to removal by external forces provided by either cross-cutting or direct pull-off, both methods carried out under wet conditions. Two existing ISO Standards (EN ISO 2409 and EN ISO 4624) specify similar test methods for dry substrates in general, but make no provision for wet conditions, where wood coatings are known to be particularly vulnerable. Both of the new methods take full account of the special nature of wood as a substrate in terms of the method of wetting and the selection of the substrate.

Most of the currently used exterior coating systems are characterized by their propensity to being penetrated by moisture both into and out of the wood. It might therefore be difficult to achieve a good adhesion of these coatings under high moisture conditions. In cases of an already damaged coating film or an increased presence of moisture in the boundary zone to the wood surface, even a short-term exposure to water can be sufficient to weaken the adhesion of a coating film either to the substrate or within the coating system. The described method is suitable for the testing of coatings for exterior wood or wood-based materials and applicable for testing the wet adhesion of a single coat or multi-coat system. In this test procedure the force, which is necessary to detach or pull-off the coating perpendicular to the substrate is measured.

Furthermore, the nature of fracture of the coating is assessed to validate or reject and assist in the interpretation of the result.

1 Scope

This document specifies a method for assessing the resistance of a coating system on wet wood to separation from the substrate by measuring the force necessary to detach or rupture the coating system by a normal tensile strain applied through an attached stud (dolly). Additional information is gained by noting the type and locus of failure. The force required for detachment will depend on several factors including the adhesion of the coating to the substrate and between intermediate coating layers. The procedure is not regarded as a direct means of measuring adhesion but an indicator of adhesive performance (adherence) under wet conditions.

A procedure for wetting the wood substrate is described. The test method is only suitable for wood and wood-based substrates.

For dry adhesion the test method can be carried out without wetting, in which case it will differ very little from EN ISO 4624.

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 927-3, *Paints and varnishes — Coating materials and coating systems for exterior wood — Part 3: Natural weathering test*

EN 927-6, *Paints and varnishes — Coating materials and coating systems for exterior wood — Part 6: Exposure of wood coatings to artificial weathering using fluorescent UV lamps and water*

EN 23270, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing (ISO 3270)*

EN ISO 4624:2016, *Paints and varnishes — Pull-off test for adhesion (ISO 4624:2016)*

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