PD CEN/TS 16360:2021

BSI Standards Publication

Paints and varnishes — Coating materials and coating systems for exterior wood — Assessment of film extensibility by indentation of a coating on a wooden substrate

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National foreword

This Published Document is the UK implementation of CEN/TS 16360:2021. It supersedes PD CEN/TS 16360:2012, which is withdrawn.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.

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English Version

Paints and varnishes - Coating materials and coating systems for exterior wood - Assessment of film extensibility by indentation of a coating on a wooden substrate

Peintures et vernis - Produits de peinture et systèmes de peinture pour bois en extérieur - Évaluation de l'extensibilité du feuil par poinçonnement d'un revêtement sur un support en bois

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Beurteilung der Verformbarkeit durch Eindrücken einer Beschichtung auf einem Holzsubstrat

This Technical Specification (CEN/TS) was approved by CEN on 16 May 2021 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.

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European foreword

This document (CEN/TS 16360:2021) 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 16360:2021.

The main changes compared to the previous edition are as follows:

— the designation of the cones in Figure 1 and Table 1 has been changed from figures to letters;

— the speed of the testing machine has been changed from 8 mm/min. to (10±5) mm/min.;

— in 5.3 the magnification of the microscope has been changed from 50× to 10×;

— the size of the test panels has been changed;

— the number of tests has been changed from three to ten;

— a description of the cracked coating and a figure showing the appearance of concentric cracks in the coating has been added;

— the text has been editorially revised and the normative references have been updated.

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, Turkey and the United Kingdom.

Introduction

A suitable extensibility of a coating film on wood in exterior use is of importance to follow dimensional changes of the wood and to resist some mechanical impacts without formation of cracks in the coating film. The simple method described in this document gives evidence on extensibility of a coating film on wood on an ordinal scale and provides first evidence on mechanical behaviour. A similar method exists in EN 13696:2008 for coated wood floorings in interior use but in the present document the description of a carefully selected substrate is added to enable testing of coating materials and coating systems for exterior wood. The method should preferably be used on coatings that have not been exposed to weathering but it may also be applied after ageing of the coating film or under different climatic conditions to gain additional experience.

1 Scope

This document specifies a test method for assessing film extensibility by indentation of a coating on a defined and carefully selected wooden extensibility substrate for coatings on stable wood components in exterior use. The method is preferably be used on coatings that have not been exposed to weathering.

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 927-3:2019, *Paints and varnishes — Coating materials and coating systems for exterior wood — Part 3: Natural weathering test*

EN ISO 4618:2014, *Paints and varnishes — Terms and definitions (ISO 4618:2014)*

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

ISO 13061-2, *Physical and mechanical properties of wood — Test methods for small clear wood specimens — Part 2: Determination of density for physical and mechanical tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 4618:2014 and the following apply.

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

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

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

3.1
film extensibility
ability of a dry film to follow without damage the deformations of the substrate to which it is applied

4 Principle

A metal plate with 12 cones with different heights is pressed into a coated wood surface and after removing the plate coating cracks in the areas indented by the cones are assessed.

5 Apparatus

5.1 Cone plate, metal plate with 12 cones with different heights (see Figure 1). The tips of cones are slightly rounded, bases of all cones lie on the level of the metal plate. Measures of cones are listed in Table 1.

Dimensions in millimetres