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Holdbarheden af reaktion på brand-egenskaber – Klasser for brandimprægnerede træbaserede produkter til indendørs og udendørs anvendelse

Durability of reaction to fire performance –
Classes of fire-retardant treated wood products in
interior and exterior end use applications



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EUROPÄISCHE NORM

October 2017

ICS 13.220.40; 13.220.50; 71.100.50

English Version

Durability of reaction to fire performance - Classes of fire-retardant treated wood products in interior and exterior end use applications

Durabilité des performances de réaction au feu -
Classement des produits à base de bois ignifugés pour
utilisation finale en intérieur et en extérieur

Dauerhaftigkeit des Verhaltens bei Brandeinwirkung -
Klassen der mit Feuerschutzmitteln behandelten
Holzprodukte für Anwendungen im Innen- und
Außenbereich

This European Standard was approved by CEN on 2 July 2017.

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European foreword

This document (EN 16755:2017) has been prepared by Technical Committee CEN/TC 175 "Round and sawn timber", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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.

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Introduction

Fire-retardant treatments may considerably improve the reaction to fire properties of wood products and these may result in wood products having the highest fire performance characteristics achievable with any combustible product. However, the reaction to fire performance may be reduced by exposure to wet and/or humid conditions [11] and the ability of the treated products to continue to perform even when exposed to these conditions needs to be demonstrated.

Two aspects of the reaction to fire durability of fire-retardant wood products need to be considered. One is the risk for high moisture content and migration of the fire-retardant chemicals within the wood product and salt crystallization on the product surface that may fall off and reduce the improved fire properties. These hygroscopic properties of the treated wood product can be evaluated by exposure to high relative humidity.

The other aspect is the risk for decreased fire performance due to loss of the fire-retardant chemicals by leaching in exterior applications, e.g. facade claddings. Maintained fire performance after weathering needs to be verified.

This standard is based on the Technical Specification CEN/TS 15912, on a Nordtest standard [20] and on experience from North America [10, 9].

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1 Scope

This European Standard describes the characteristics for fire-retardant treated wood products.

NOTE 1 It is based on maintaining performance undiminished throughout the desired service life in the anticipated conditions of use.

The European Standard prescribes the classification requirements for the durability of the reaction to fire performance of fire-retardant treated wood products to be used in interior and exterior end use conditions.

This European Standard applies to wood which has been treated during a production process with fire retardant products applied either by a penetration process or by a superficial process, such as with a film forming or intumescent fire retardant coating. It covers fire-retardant treated products that are coated with an ordinary paint.

Mechanical properties and biological durability of fire-retardant treated wood products are not covered by this European Standard.

NOTE 2 This standard can be used for other manufactured wood products.

This standard covers wood products. It doesn't cover wood-based panels.

NOTE 3 Wood based panels for construction are described in EN 13986.

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.

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 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

ISO 5660-1, *Reaction-to-fire tests — Heat release, smoke production and mass loss rate — Part 1: Heat release rate (cone calorimeter method) and smoke production rate (dynamic measurement)*