PD CEN/TS 16818:2018

BSI Standards Publication

Durability of wood and wood-based products - Moisture dynamics of wood and wood-based products

bsi.

National foreword

This Published Document is the UK implementation of CEN/TS 16818:2018.

The UK participation in its preparation was entrusted to Technical Committee B/515, Wood preservation.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2018

ISBN 978 0 580 88432 0

ICS 79.080

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 August 2018.

Amendments/corrigenda issued since publication

Date	Text affected

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 16818

August 2018

ICS 79.080

English Version

Durability of wood and wood-based products - Moisture dynamics of wood and wood-based products

Durabilité du bois et des matériaux à base de bois - Cinétique d'humidification du bois et des produits à base de bois

Dauerhaftigkeit von Holz und Holzprodukten - Feuchte-Dynamik von Holz und Holzprodukten

This Technical Specification (CEN/TS) was approved by CEN on 2 March 2018 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. CEN/TS 16818:2018: E

Contents

Page

European foreword

This document (CEN/TS 16818:2018) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and wood-based products”, the secretariat of which is held by AFNOR.

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.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Moisture has a significant influence on the mechanical and physical properties and on the biological durability of wood and wood-based materials. The test method described in this Technical Specification is a laboratory method in which small samples are exposed to water. It provides a basis for assessment of the moisture dynamics of wood and wood-based materials in service. The method permits the determination of the water uptake and moisture release which may provide important information on the susceptibility to the onset of fungal attack in certain end uses.

It is recommended that the results of this test should be supplemented by further suitable tests and especially by practical experience.

1 Scope

This document details a method for determining the water uptake and the effectiveness of the drying process on solid wood, wood-based materials or coated wood by means of water absorption and water vapour desorption. This document lays down a method to assess the moisture dynamics of wooden products which can be a contributing factor to the susceptibility to wood decay.

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 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

EN 13183-1, *Moisture content of a piece of sawn timber — Part 1: Determination by oven dry method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1
supplier
sponsor of the test (person or company providing the samples or wood-based products to be tested)

3.2
residue
moisture content left in the test specimen after desorption as a percentage of the absorbed moisture

3.3
residual moisture content
increase in moisture content in the test specimen after desorption

3.4
absorption coefficient
slope of the fitted line for a plot of the water uptake per square metre against the square root of the elapsed time

3.5
treatment block
wood or wood-based product that is subsequently edge and end grain sealed to create the test specimen

4 Principle

Test specimens prepared from the wood or wood-based product under test are exposed to water by means of floating or submersion. During a prescribed wetting and drying period under defined conditions the mass of the specimens is registered. The mass gain and mass loss is used to estimate the residual moisture and thus the potential to reach and remain at a moisture content at which fungal decay can occur.