



BSI Standards Publication

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

National foreword

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

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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

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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.

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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.

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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.