



BSI Standards Publication

Durability of wood and wood-based products Guidance on performance

National foreword

This British Standard is the UK implementation of EN 460:2023. It supersedes BS EN 460:1994, which is withdrawn.

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 committee manager.

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English Version

Durability of wood and wood-based products - Guidance on performance

Durabilité du bois et des matériaux à base de bois -
Guide pour déterminer la performance

Dauerhaftigkeit von Holz und Holzprodukten -
Leitfaden zur Bestimmung der Leistungsfähigkeit

This European Standard was approved by CEN on 2 January 2023.

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European foreword

This document (EN 460:2023) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and wood-based products”, the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by August 2023, and conflicting national standards shall be withdrawn at the latest by August 2023.

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 EN 460:1994.

EN 460:2023 includes the following significant technical changes with respect to EN 460:1994:

- title change;
- the introduction of a decision process for performance specification of wood and wood-based products based on (i) materials and exposure, (ii) presentation of design life and (iii) articulation of consequence of failure.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

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.

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Introduction

There is increasing need to understand the service life of wood products, especially in construction. Service life in the Construction Products Regulation (Regulation (EU) No 305/2011 (CPR) and its equivalent in non-EU countries) can be understood as performance within an economically acceptable period, under typical exposure and maintenance scenarios.

This document is concerned with the service life of wood materials and wood products, especially in construction. The purpose of this document is to provide guidance to help the user to select a wood or wood-based material based on appropriate biological durability based on information about the end use environment and the target service life.

For the service life of structures, refer to EN 1990 and EN 1995-1-1.

1 Scope

This document gives guidance on the selection of wood and wood-based products for use in situations where they can be subject to degradation by fungi, wood destroying insects or marine borers. This guidance includes information on factors that can influence the service life of a wood or wood-based product when considering biological degradation. In many end uses, design, workmanship and maintenance will also influence the service life of the wood or wood-based product.

This document is a step toward the evaluation of the service life of a wood product.

This document does not consider:

- 1) the durability characteristics of the glue used in wood-based products;
- 2) the aesthetic function of wood products (discoloration, surface weathering, mould).

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 1001-2, *Durability of wood and wood based products — Terminology — Part 2: Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1001-2 and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

biological durability

inherent resistance of a wood species or a wood-based material against wood-destroying organisms

Note 1 to entry: This can be a natural or a conferred durability.

3.2

coating

product, normally applied in a liquid form to a surface, that forms a film possessing protective properties

3.3

component

product manufactured as a distinct unit to serve a specific function or functions

3.4

conferred durability

improved resistance of a wood species to biological degradants provided by a treatment process (chemical, physical, etc.) such as wood preservation or wood modification

3.5

consequence of failure (COF)

significance of product failure in service determined by the outcome of a failure expressed in terms of personnel safety, economic loss, and/or damage to the environment

3.6

critical biological hazard

biological hazard (or hazards) most significant in the end use application and its geographical location

3.7

design life

service life intended by the designer

3.8

likelihood of failure

probability that a wood component will reach its limit state within the design life

3.9

limit state

state beyond which the structure (or product) no longer satisfies the relevant design criteria

[SOURCE : EN 1990:2002, Clause 3.1.2.14 (CEN/TC250/SC10 N 523)]

Note 1 to entry: The limit state is commonly reached before loss of function is complete.

3.10

material resistance

inherent ability of a material to endure a specific biological hazard through a combination of natural and/or conferred durability and moisture dynamic behaviour relevant for the different biological agents

3.11

moisture dynamics

physical characteristic of a wood material or wood product to respond to changing environmental conditions and take up and release moisture (vapour or liquid)

Note 1 to entry: The moisture dynamics of a wood species or a wood-based material can be tested using the method described in CEN/TS 16818.

3.12

natural durability

inherent resistance of a wood species to attack by wood-destroying organisms

3.13

overlay

one or more sheets or films, for example impregnated paper, plastics, resin film, metal that protect a wood surface

3.14

performance

ability of a wood species or a wood-based material to withstand deterioration over time and fulfil essential functions

3.15

permeability to water

ease with which water penetrates a wood-based matrix (wood of a particular species, wood-based material)