

# SVENSK STANDARD

## SS-EN 460

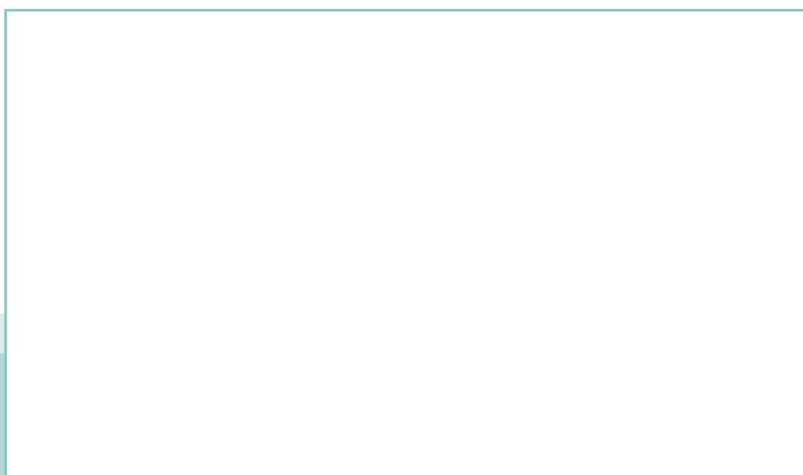


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### **Träskydd – Naturlig beständighet hos trä – Anvisningar för krav på träs beständighet i olika riskklasser**

**Durability of wood and wood-based products – Natural durability of solid wood – Guide to the durability requirements for wood to be used in hazard classes**



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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 460

May 1994

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Descriptors: Wood, tests, durability, classifications, biodegradability, hazards, pest resistance

English version

Durability of wood and wood-based products — Natural  
durability of solid wood — Guide to the durability  
requirements for wood to be used in hazard classes

Durabilité du bois et des matériaux dérivés du  
bois — Durabilité naturelle du bois massif —  
Guide d'exigences de durabilité du bois pour son  
utilisation selon les classes de risque

Dauerhaftigkeit von Holz und  
Holzprodukten — Natürliche Dauerhaftigkeit  
von Vollholz — Leitfaden für die  
Anforderungen an die Dauerhaftigkeit von Holz  
für die Anwendung in den Gefährdungsklassen

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

## Foreword

This European Standard has been drawn up by WG 2 "Natural durability" of Technical Committee CEN/TC 38, Durability of wood and wood-based products, with AFNOR as Secretariat.

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of an identical text or by endorsement, at the latest by November 1994, and conflicting national standards shall be withdrawn at the latest by December 1996.

This European Standard was adopted by CEN and in accordance with the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## Contents

	Page
Foreword	2
Introduction	3
1 Scope	3
2 Normative references	3
3 Definition	3
4 Hazard classes	3
5 Durability classes	3
6 Durability for use in the various hazard classes	3
Annex A (informative) Important factors in the relationship between expected service life and natural durability	5
Annex B (informative) Hazard classes and general service situations taken from Table 1 of EN 335-1	6
Annex C (informative) Bibliography	6
Table 1 — Wood-destroying fungi — Guidance on the durability classes of wood species for use in hazard classes	4
Table B.1 — General service situations and hazard classes given in EN 335-1 (extract of Table 1 of EN 335-1)	6

## Introduction

Where wood-destroying organisms are likely to attack timber in service, either a timber of sufficient natural durability should be selected or the durability characteristics of the timber should be enhanced by preservative treatment. Guidance on the various classification systems used to describe the natural durability of timber to attack by wood-destroying organisms is given in EN 350-1, and the system used to classify preservative-treated timber is given in EN 351-1. The need for specific durability characteristics for a timber will depend on its conditions of service (as defined by the class of biological hazard, see EN 335-1 and EN 335-2).

## 1 Scope

This European Standard gives guidance on the selection of wood species based on their natural durability to attack by wood-destroying organisms for use as solid wood or as glued laminated timber (glulam) in the hazard classes defined in EN 335-1. This standard does not consider the durability characteristics of the glue used in glued laminated timber.

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 335-1:1992, *Durability of wood and wood-based products — Definitions of hazard classes of biological attack — Part 1: General*.

EN 335-2:1992, *Durability of wood and wood-based products — Definitions of hazard classes of biological attack — Part 2: Application to solid wood*.

EN 350-2:1994, *Durability of wood and wood-based products — Natural durability of solid wood — Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe*.

## 3 Definition

For the purposes of this standard, the following definition applies.

### 3.1

#### **glued laminated timber**

structural member formed by bonding together timber laminations with the grain running essentially parallel

## 4 Hazard classes

The service situations in which wood is susceptible to biological attack have been divided into five hazard classes which are defined in EN 335-1 (see Table B.1).

Guidance on the application of these hazard classes to solid wood is given in EN 335-2.

## 5 Durability classes

Classification systems for the natural durability of solid wood based on resistance to attack by various wood-destroying organisms are given in EN 350-1.

## 6 Durability for use in the various hazard classes

### 6.1 General

The natural durability of a wood species should be considered separately for each wood-destroying organism.

In practice supplies of sawn timber may include sapwood as well as heartwood. If the proportion of sapwood present is such that its loss would have adverse implications for the performance of the component, or if the sapwood and heartwood cannot be distinguished, the durability of the whole component should be regarded as equivalent to that of the sapwood.

In addition to the natural durability, there are other factors that influence performance which should also be taken into consideration in the selection of a wood species and the decision whether or not it should be treated with a preservative.

For example wood with low permeability may acquire lower moisture contents under intermittent wetting conditions, compared to more permeable species, and will therefore have a reduced risk of fungal attack under such service conditions. An indication of propensity to take up moisture may be obtained from the treatability classification of different wood species (see EN 350-2). Hence timbers having a particular natural durability classification for wood-destroying fungi and with a treatability classification of 3 or 4 may achieve an increased service life in out of ground contact conditions (hazard class 2 or hazard class 3) compared to wood of similar durability classification but with a treatability classification of 1 or 2.

Information on some further factors is given in Annex A.

**6.2 Natural durability to wood-destroying fungi**

Guidance on the use of a wood species in the various hazard classes depending upon their degree of natural durability is given in Table 1.

If the natural durability is inadequate, preservative treatment should be considered.

**Table 1 — Wood-destroying fungi — Guidance on the durability classes of wood species for use in hazard classes**

Hazard class	Durability class				
	1	2	3	4	5
1	o	o	o	o	o
2	o	o	o	(o)	(o)
3	o	o	(o)	(o) — (x)	(o) — (x)
4	o	(o)	(x)	x	x
5	o	(x)	(x)	x	x

**Key**

- o natural durability sufficient.
- (o) natural durability is normally sufficient, but for certain end uses treatment may be advisable (see Annex A).
- (o) — (x) natural durability may be sufficient, but depending on the wood species, its permeability (see 6.1), and end use (see Annex A), preservative treatment may be necessary.
- (x) preservative treatment is normally advisable, but for certain end uses natural durability may be sufficient (see Annex A).
- x preservative treatment necessary.

**NOTE** Sapwood of all wood species should be regarded as durability class 5.

**6.3 Natural durability to wood-destroying beetles**

Wood-destroying beetles are present throughout the European area, but the risk of attack varies greatly from high to insignificant. Reference should be made to local or regional expertise for advice on the risk of attack by wood-destroying beetles.

In situations where there is a significant risk of attack which would result in an unacceptable loss of strength or visual degradation, wood species classified as susceptible in EN 350-2 should be treated with a preservative.

**6.4 Natural durability to termites**

In situations where there is a significant risk of termite attack only the heartwood of wood species which is classified in EN 350-2 as “durable” (D) or “moderately durable” (M) to termites may be used untreated. The choice between “durable” (D) and “moderately durable” (M) wood depends upon the specific requirements, for example for function, end use, expected service life, and the significance of failure.

**6.5 Natural durability to marine organisms**

In situations where there is a significant risk of attack by marine organisms, only the heartwood of wood species which is classified in EN 350-2 as “durable” (D) or “moderately durable” (M) to marine organisms may be used untreated. The choice between “durable” (D) and “moderately durable” (M) wood depends upon the specific requirements, for example for function, end use, expected service life, and the significance of failure.