SLOVENSKI STANDARD
SIST EN 335-1:1995

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Trajnost lesa in lesnih materialov - Definicija razredov ogroženosti pred biološkim napadom - 1. del: Splošno

Durability of wood and wood-based products - Definition of hazard classes of biological attack - Part 1: General

Dauerhaftigkeit von Holz und Holzprodukten - Definition der Gefährdungsklassen für einen biologischen Befall - Teil 1: Allgemeines

Durabilité du bois et des matériaux dérivés du bois - Définitions des classes de risque d'attaque biologique - Partie 1: Généralités

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Foreword

This part of this European Standard has been drawn up by WG 1 "Hazard Classes" of the Technical Committee CEN/TC 38 "Durability of wood and wood-based products" with AFNOR as Secretariat.

This European Standard is divided in three parts, part 1 gives general definitions of hazard classes of biological attack, part 2 concerns their application to solid wood and part 3 has been established in association with CEN/TC 112 "Wood-based panels".

National Standards identical to this European Standard shall be published at the latest by 93-01-31 and conflicting national standards shall be withdrawn at the latest by 93-01-31.

In accordance with 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.

0 INTRODUCTION

The classes described in this Part of EN 335 are based on an existing classification agreed by the European Homologation Committee (EHC) in 1981 and published in the EHC reference document in 1984.

Proposals for altering the five classes of the EHC classification have been considered, particularly the possibility of harmonization with other classes used outside Europe. It has, however, been judged that 5 classes are the most appropriate solution to European conditions. Attention of users is therefore drawn to the need to avoid misinterpretation of any numbering system on timber which cannot correspond exactly to the European classes defined in this Part of EN 335.

The possibility of harmonization between the three moisture categories of draft Eurocode 5 and the 5 classes of all parts of EN 335 has been carefully studied. The latter have been adjusted as far as possible. Nevertheless, it is important to note that the two systems use different criteria to achieve different ends.

A user may utilize the appropriate parts of EN 335 to identify the "hazard class" of a given service environment and geographical location. Table 1 will assist in determining the biological agencies that can attack timber in that situation. The user can then consider the type and duration of performance required, select an appropriate level of durability and ensure that the timber or wood-based product specified has that durability either as a natural (see EN 350-2) or an acquired characteristic as the result of appropriate preservative treatment (see EN 351-1).

NOTE At the moment, EN 350-2 gives information only with regard to solid wood. EN 351-1 considers only the performance of preservative-treated solid wood.

1 SCOPE

This Part of EN 335 defines five hazard classes which represent the different service situations to which wood and wood-based products can be exposed. This Part also indicates the biological agencies relevant to each situation.

Annex A gives information on these biological agencies.

2 DEFINITION OF HAZARD CLASSES

2.1 Hazard class 1

Situation in which the wood or wood-based product is under cover, fully protected from the weather and not exposed to wetting.

2.2 Hazard class 2

Situation in which the wood or wood-based product is under cover and fully protected from the weather but where high environmental humidity can lead to occasional but not persistent wetting.

2.3 Hazard class 3

Situation in which the wood or wood-based product is not covered and not in contact with the ground. It is either continually exposed to the weather or is protected from the weather but subject to frequent wetting.

2.4 Hazard class 4

Situation in which the wood or wood-based product is in contact with the ground or fresh water and thus is permanently exposed to wetting.

2.5 Hazard class 5

Situation in which the wood or wood-based product is permanently exposed to salt water.

3 Occurence of biological agencies in hazard classes

Table 1 gives information on the occurence of biological agencies (see annex A) in the various hazard classes (see clause 2).

Table 1 - Occurence of biological agencies in hazard classes

(see clause 2 and annex A)

Hazard classes	General service situations	Description of exposure to wetting in service	Occurence of biological agencies			
			Fungi	Beetles (1)	Termites	Marine borers
1	Above ground, covered (dry)	None	-	U	L	-
2	Above ground, covered (risk of wetting)	Occasionally	U	U	L	-
3	Above ground, not covered	Frequently	U	U	L	-
4	In contact with ground or fresh water	Permanently	U	U	L	-
5	In salt water	Permanently	U	U	L	U

U = Universally present within Europe
L = Locally present within Europe
1) The risk of attack can be insignificant according to specific service situations.

Information on biological agencies (1)

A.1 INTRODUCTION

Fungi, insects and marine borers affect both wood and wood-based products in different ways. The significance of attack by these agencies can be different for solid wood (see EN 335-2) and wood- based products (see EN 335-3 for plywood, particle board, fibre board, cement-bonded board).

The consequences of wood and wood-based products being exposed to service conditions defined by the various hazard classes will vary depending upon their reactions to the different wetting regimes. EN 335-2 and EN 335-3 give guidance on these with respect to solid wood and wood-based panels respectively.

A.2 FUNGI

A.2.1 Wood-destroying fungi

A wood moisture content of more than 20 % (m/m) (2) is necessary for the development of these fungi.

A.2.1.1 Basidiomycete wood-rotting fungi

Fungi responsible for brown rot and white rot, but not soft rot.

A.2.1.2 Soft rot fungi

Fungi responsible for a type of rot characterized by surface softening of the wood although they can also cause rot at depth.

These fungi need a higher wood moisture content than basidiomycetes. They are of special significance for wood in ground contact or in water.

A.2.2 Wood-disfiguring fungi

Fungi causing blue stain and mould in service.

These fungi are only of practical concern in relation to aesthetic appearance. They can degrade decorative coatings.

A.2.2.1 Blue stain fungi

Fungi causing blue to black permanent discolouration of variable intensity and depth mainly in the sapwood of certain woods. This does not result in appreciable alteration of the mechanical properties but can increase the permeability.

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(1) Information on the susceptibility of species is given in EN 350-2

(2) Determined according to ISO 3130