Durability of wood and wood-based products - Efficacy of preventive wood preservatives as determined by is a preview generated by the biological tests - Part 1: Specification according to use class



# EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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## **EUROPEAN STANDARD**

EN 599-1

# NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

July 2009

1.100.50 Supersedes EN 599-1:1996 **English Version** Durability of wood and wood-based products - Efficacy of preventive wood preservatives as determined by biological tests Part 1: Specification according to use class Durabilité du bois et des matériaux dérivés du bois -Efficacité des produits préventifs de préservation du bois établie par des essais biologiques - Partie 1: Spécification Dauerhaftigkeit von Holz und Holzprodukten - Wirksamkeit von Holzschutzmitteln wie sie durch biologische Prüfungen ermittelt wird - Teil 1: Spezifikationen entsprechend den par classe d'emploi Gebrauchsklassen This European Standard was approved by CEN on 20 June 2009. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member. This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions. CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom. EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG Management Centre: Avenue Marnix 17, B-1000 Brussels

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# Foreword

This document (EN 599-1:2009) has been prepared by Technical Committee CEN/TC 38 "Durability of wood and wood-based products", the secretariat of which is held by AFNOR.

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 January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 599-1:1996.

Significant technical differences between this edition and EN 599-1:1996 are as follows:

- The scope now emphasises that this standard is not a performance standard but a standard for characterising the efficacy of wood preservatives, based on data derived from the biological tests that it specifies, supplemented by, in certain cases, data from field tests. This European Standard provides a basis for establishing preservative retentions for timber when specified in conjunction with EN 351-1 taking into account necessary local considerations. It points out that at present not all natural ageing factors which may affect the stability of active ingredients for wood preservatives can be assessed by standardized methods but have nevertheless to be taken into account in the development of preservative products capable of being effective in service. It also allows for preservatives that have been used successfully and legally before the standard was to have their efficacy confirmed in accordance with the general principles of the standard (so called "grandfather-clause").
- This document now provides for the use of data from CEN/TS 839, in specific cases, as a method for the
  assessment of preservatives designed for superficial applications.
- In Annex A "Guidance on re-testing after making variations in product formulation", requirements have been clarified by the provision of diagrams.
- Production control has been withdrawn from Clause 9 and transferred to a new informative annex (now Annex B).
- A new normative annex on the validity of test results from former standards after their revision has been added (now Annex H).

EN 599 consists of two parts. Part 2 (EN 599-2, *Durability of wood and wood-based products* — *Performance of preventive wood preservatives as determined by biological tests* — *Part 2: Classification and labelling*) will be revised later once the exact requirements of the Biocidal Products Directive have been finalised.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This part of EN 599 is one of a series and should be used in conjunction with EN 599-2, EN 335-1 and EN 335-2, which describe the service conditions for treated wood in terms of use classes, and EN 351-1, which describes a classification system for preservative treated wood in terms of preservative penetration and gives guidance on classes for retentions. The need for wood preservatives depends in part on the natural durability of the wood and therefore this part of EN 599 should also be used in conjunction with EN 350-1, EN 350-2 and EN 460.

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### 1 Scope

This part of EN 599 specifies for each of the five use classes defined in EN 335-1, the biological tests required for evaluating the efficacy of wood preservatives for the preventive treatment of solid timber, together with the minimum ageing tests required for the respective use class. It provides the method for calculating the critical value of a preservative. The critical value is the value that shall be used to calculate the recommended retention of the preservative appropriate for specific service conditions. The critical value is not necessarily the recommended retention or the minimum retention level for the preservative. The wide range of hazards, exposure conditions and service life requirements across Europe make it necessary to allow for local considerations in the calculation of the required preservative retention; EN 351-1 provides for the critical value to be adjusted to take account of these factors.

This part of EN 599 is applicable to all wood preservative products supplied for application in liquid form for the preventive treatment of timbers (structural and non-structural) against wood-attacking fungi, wood-attacking insects and marine borers as described in EN 335-1. However, it is applicable to products for preventive treatments against fungi causing disfigurement (blue stain) of wood in service if this forms part of the overall preventive efficacy of the product.

This part of EN 599 does not necessarily take into account all the factors which may affect the stability of active ingredients in preservative treated wood. These factors include ultra-violet light and microbiological agencies capable of degrading components of the preservative. Such factors are an integral part of exposure in field trials but are subject to natural variation and their impact is not directly assessed in the field trial methods included in this standard. Methods are in development to assess the impact of these factors but are not finalised and cannot be included in this revision of this part of EN 599. Because such factors could, in service, significantly affect the active ingredient's suitability for its intended purpose, the manufacturer/ producer is expected to ensure and be able to provide evidence that its stability, at the recommended retention of the preservative product, has been adequately assessed.

This part of EN 599 is not applicable to wood preservative products supplied for application as pastes, solids or in capsule or gaseous form because these cannot be tested without modification of the biological tests cited in this standard. It does not apply either to wood preservative products for remedial (curative) treatments, to those applied to prevent fungi causing sap stain on green (unseasoned) timber or to those applied solely to prevent fungi causing disfigurement (blue stain) of wood in service.

NOTE 1 The nature of the laboratory and field tests required in this part of EN 599 to demonstrate efficacy of a wood preservative are such that the time required generating the data is many months or years, depending upon the properties of the wood preservative and the use class in which the treated wood is to be exposed.

For preservative products which have already been placed on the market without significant formulation variation (see Annex A) before the end of 1990 and which can demonstrate a record of having been used lawfully and successfully in accordance with local technical traditions during this period, national standards bodies or independent authorities nominated by them, may declare critical values for use within their territories.

NOTE 2 For re-testing after making variations in product formulation, guidance is given in Annex A.

#### 2 Normative references

The following referenced documents are indispensable for the application 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 20-1, Wood preservatives — Determination of the protective effectiveness against Lyctus Brunneus (Stephens) — Part 1: Application by surface treatment (laboratory method)

EN 20-2, Wood preservatives — Determination of the protective effectiveness against Lyctus brunneus (Stephens) — Part 2: Application by impregnation (Laboratory method)

EN 46-1, Wood preservatives — Determination of the preventive action against Hylotrupes bajulus (Linnaeus) — Part 1: Larvicidial effect — (Laboratory method)

EN 46-2, Wood preservatives — Determination of preventive action against Hylotrupes bajulus (Linnaeus) — Part 2: Ovicidal effect — (Laboratory method)

EN 47, Wood preservatives — Determination of the toxic values against larvae of Hylotrupes bajulus (Linnaeus) — (Laboratory method)

EN 49-1, Wood preservatives — Determination of the protective effectiveness against Anobium punctatum (De Geer) by egg-laying and larval survival — Part 1: Application by surface treatment (Laboratory method)

EN 49-2, Wood preservatives — Determination of the protective effectiveness against Anobium punctatum (De Geer) by egg-laying and larval survival — Part 2: Application by impregnation (Laboratory method)

EN 73, Wood preservatives Accelerated ageing tests of treated wood prior to biological testing — Evaporative ageing procedure

EN 84, Wood preservatives — Accelerated ageing of treated wood prior to biological testing — Leaching procedure

EN 113, Wood preservatives — Test method for determining the protective effectiveness against wood destroying basidiomycetes — Determination of the toxic values

EN 117, Wood preservatives — Determination of toxic values against Reticulitermes species (European termites) (Laboratory method)

EN 118:2005, Wood preservatives. — Determination of preventive action against Reticulitermes species (European termites) (laboratory method)

EN 152-1, Test methods for wood preservatives — Laboratory method for determining the preventive effectiveness of a preservative treatment against blue stain in service — Part 1: Brushing procedure

EN 152-2, Test methods for wood preservatives — Laboratory method for determining the protective effectiveness of a preservative treatment against blue stain in service — Part 2: Application by methods other than brushing

EN 252, Field test method for determining the relative protective effectiveness of a wood preservative in ground contact

EN 275, Wood preservatives — Determination of the protective effectiveness against marine borers

EN 330, Wood preservatives — Field test method for determining the relative protective effectiveness of a wood preservative for use under a coating and exposed out of ground contact: L-joint method

EN 335-1, Durability of wood and wood-based products — Definition of use classes — Part 1: General

EN 351-1, Durability of wood and wood-based products — Preservative-treated solid wood — Part 1: Classification of preservative penetration and retention

EN 599-2, Durability of wood and wood-based products — Performance of preventive wood preservatives as determined by biological tests — Part 2: Classification and labelling

ENV 807:2001, Wood preservatives — Determination of the effectiveness against soft rotting micro-fungi and other soil inhabiting micro-organisms

CEN/TS 839, Wood preservatives — Determination of the protective effectiveness against wood destroying basidiomycetes — Application by surface treatment