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

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 599-1:2009+A1:2013 sisaldab Euroopa standardi EN 599-1:2009+A1:2013 inglisekeelset teksti.	This Estonian standard EVS-EN 599-1:2009+A1:2013 consists of the English text of the European standard EN 599-1:2009+A1:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.12.2013.	Date of Availability of the European standard is 04.12.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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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 par classe d'emploi

Dauerhaftigkeit von Holz und Holzprodukten - Wirksamkeit von Holzschutzmitteln wie sie durch biologische Prüfungen ermittelt wird - Teil 1: Spezifikation entsprechend der Gebrauchsklasse

This European Standard was approved by CEN on 20 June 2009 and includes Amendment 1 approved by CEN on 21 October 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 599-1:2009+A1:2013) 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 June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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 includes Amendment 1 approved by CEN on 21 October 2013.

This document supersedes 〉A1〈 EN 599-1:2009 〉A1〈.

The start and finish of text introduced or altered by amendment is indicated in the text by tags 〉A1〈 〉A1〈.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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.

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 the 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)*

[A1] EN 152, *Wood preservatives - Determination of the protective effectiveness of a preservative treatment against blue stain in wood in service - Laboratory method* [A1]

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*

EN 1001-2:2005, *Durability of wood and wood based products - Terminology - Part 2: Vocabulary*

3 Terms, definitions, abbreviations and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1001-2:2005 and the following apply.

3.1.1
active ingredient(s)
a.i
individual chemical compound or compounds included in a wood preservative to give it specific activity against biological agents of deterioration

[EN 1001-2:2005, 4.01]

3.1.2
analytical zone
a.z
part of the treated wood which is analysed for assessing the retention requirement (*r.r.*)

NOTE The analytical zone is taken from the lateral surfaces of the treated wood. The depth to which sampling is required will depend on the species of wood being analysed and the treatment level concerned.

[EN 1001-2:2005, 4.03]

3.1.3
biological reference value
b.r.v
amount in grams per square metre or kilograms per cubic metre of a wood preservative (as product) found to be effective in test in preventing attack by the particular biological agent being tested

[EN 1001-2:2005, 4.06]

3.1.4
critical value
c.v
value equivalent to the highest *b.r.v.* (in grams per square metre or kilograms per cubic metre) obtained from all the biological tests carried out in accordance with this part of EN 599 for any given use class

[EN 1001-2:2005, 4.18]

3.1.5
co-formulant
any ingredient (other than an active ingredient) in a formulated wood preservative product

[EN 1001-2:2005, 4.14]

3.1.6
manufacturer's proposed recommended loading
m.r.l
amount of product in the test specimen corresponding to the mean loading which the manufacturer recommends as necessary and achievable in practice in the analytical zone(s)

[EN 1001-2:2005, 4.50]