SLOVENSKI STANDARD
SIST EN 14128:2020

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Nadomešča:
SIST EN 14128:2004

Trajnost lesa in lesnih proizvodov - Merila učinkovitosti kurativnih biocidnih proizvodov za les, ugotovljene z biološkimi preskusi

Durability of wood and wood-based products - Efficacy criteria for curative wood preservatives as determined by biological tests

Dauerhaftigkeit von Holz und Holzprodukten - Anforderungen an bekämpfend wirkende Holzschutzmittel, wie sie durch biologische Prüfungen ermittelt werden

Durabilité du bois et des matériaux dérivés du bois - Efficacité des produits curatifs de préservation du bois établis par des essais biologiques

Ta slovenski standard je istoveten z: **EN 14128:2020**

ICS:

71.100.50	Kemikalije za zaščito lesa	Wood-protecting chemicals
79.040	Les, hlodovina in žagan les	Wood, sawlogs and sawn timber

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EUROPEAN STANDARD
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EN 14128

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ICS 71.100.50

Supersedes EN 14128:2003

English Version

Durability of wood and wood-based products - Efficacy criteria for curative wood preservatives as determined by biological tests

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European foreword

This document (EN 14128:2020) 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of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

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 14128:2003.

This document gives the performance criteria for curative wood preservatives as determined by biological tests. A European Technical Report (CEN/TR 15003) is concerned with criteria for hot air processes for curative uses against wood destroying organisms.

This document is valid for products to eradicate wood boring beetles in infested wood and for products to be used in the course of curative actions against the dry rot fungus to prevent its growth through masonry and beyond.

Compared to EN 14128:2003, the following modifications have been made:

a) Clause 6: the limits of the application rates of the fungicide solution have been removed;

b) Table 1: criterion for effective value has been changed to criterion for brv. Table re-organized;

c) clauses and subclauses contained in 8.2 Product classification; 8.3 and 8.4 Product description; 8.5 and 8.6 Product labelling, have been merged in 8.2 Product labelling;

d) Annex B and C have been merged and changed from normative to informative;

e) Annexes C, D, E and F have been deleted.

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

Introduction

This document should be used in conjunction with EN 599-1, which describes the performance requirements for preventive wood preservatives as determined by biological tests.

The need to use curative products against wood destroying organisms depends upon a careful diagnosis by expert, qualified specialists to determine the precise causes of the damage to be rectified. This should include the type of wood attacking organisms involved and whether they are active, the environmental circumstances, especially the source and nature of any wetting, the type of wood involved, the nature of the building or construction, and the structural and physical significance of the timber which is damaged or at risk of being damaged.

NOTE Curative treatment can be achieved either by chemical wood preservatives as specified in this document or by specific curative processes without using chemicals, like hot air processes, as given in CEN/TR 15003.

Curative wood preservative products should be used in an integrated way as part of a carefully prescribed strategy involving a series of actions appropriate to the particular circumstances of each case. Associated physical measures involving appropriate building works to remedy ingress of moisture and to dry out any dampness can be an essential prerequisite for the use of any curative products. Expert diagnosis should take into account all regional, practical, environmental, economical, safety and any other factors which can be relevant to the prescriptive decisions to be taken.

It is not the purpose of this document to provide a specification, or even guidance in developing specifications for remedial work to eradicate wood destroying organisms. This document also does not give guidance on the methods of application or the precise amounts of products that might be appropriate to apply in specific practical circumstances. It is intended to guide specifiers, users and others in selecting and specifying products on the basis of their effectiveness as demonstrated in accordance with the criteria given.

1 Scope

This document specifies the minimum performance requirements in biological tests for products for curative uses against specific wood destroying organisms. It specifies the biological tests required together with the efficacy criteria to be achieved in each test.

Chemicals against insects can act according to their specific properties within a short time (fast acting) or only after a long period (slow acting or with a deferred effect). Different tests and efficacy requirements are needed for these various types of curative wood preservatives.

This document is applicable to all wood preservative products supplied for application in liquid form for curative uses against attack by wood boring beetles. This document is also applicable for products applied to prevent the growth of the dry rot fungus through masonry.

This document is also applicable to products for curative uses supplied for application as pastes, solids or in capsule form but only where appropriate biological methods of test exist as published European Standards.

NOTE This standard is used as a reference document for the evaluation of efficacy of biocidal products PT8 (wood preservatives) in the framework of the European Regulation on Biocidal Products (EU) No 528/2012 (BPR).

This document is not applicable to products used as fumigants.

This document is also not applicable for determining whether specific curative products, used alone or in combination, are effective in conferring long-term protection against attack by wood destroying organisms. Preventive effectiveness can be determined using EN 599-1 but only for products that can be tested using the methods and interpretative procedures defined in EN 599-1.

Annex A (informative) contains a guidance on re-testing after making variations in product formulation.

Annex B (informative) contains some test recommendations for specific curative products against other insect species than *Hylotrupes bajulus* and *Anobium punctatum*.

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 48, *Wood preservatives - Determination of eradicant action against larvae of Anobium punctatum (De Geer) (laboratory method)*

EN 370, *Wood preservatives - Determination of eradicant efficacy in preventing emergence of Anobium punctatum (De Geer)*

EN 599-1:2009+A1:2013, *Durability of wood and wood-based products - Efficacy of preventive wood preservatives as determined by biological tests - Part 1: Specification according to use class*

EN 1390, *Wood preservatives - Determination of the eradicant action against Hylotrupes bajulus (Linnaeus) larvae - Laboratory method*

CEN/TS 12404, *Durability of wood and wood-based products - Assessment of the effectiveness of a masonry fungicide to prevent growth into wood of Dry Rot Serpula lacrymans (Schumacher ex Fries) S.F. Gray - Laboratory method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp/ui

3.1
active ingredient
individual chemical compound or compounds included in a wood preservative to give it specific activity against biological agents of deterioration

3.2
barrier treatment
treatment of masonry in case of dry rot fungus infection, to avoid its growth beyond the treated zone

3.3
biological reference value
brv
amount in grams per square metre or kilograms per cubic metre of the wood preservative product found to be effective in test in eradicating the infection by the particular biological agent being tested

Note 1 to entry: The application rate in tests is usually expressed as g/m^2 in the case of curative products.

Note 2 to entry: In practice for products used by injection the application rate is expressed in kg/m^3. In this case the brv in g/m^2 determined in tests is converted into kg/m^3 based on sound scientific principles and practice.

3.4
curative efficacy
specific property of a wood preservative to act as an eradicant of pests in infested timber

3.5
deferred effect
eradicant effect which is not immediate but occurs at a later larval stage or at the pupa or adult stage in the life cycle

Note 1 to entry: In laboratory tests the curative effect is shown in a period of more than 26 weeks and up to the test period defined in the relevant standard.

EXAMPLE 1 A product coming into contact with the larval stage of the target insect species and having an effect on the nymphal or adult stage, thus preventing the emergence of the insect from the wood and its further dissemination.

EXAMPLE 2 A product with a very low concentration of active ingredient, which needs to be bio-accumulated by the larvae during more than 6 months in the lab test in order to cause their death.

3.6
effective value
amount in grams per square metre of the wood preservative corresponding to the highest of the brvs obtained in all the tests carried out in accordance with this document to support the claimed efficacy of the product

3.7
fast acting
achieving the required level of effectiveness within a period of 12 weeks against *Hylotrupes bajulus* and of 8 weeks against *Anobium punctatum* using the appropriate standard test method

3.8
maximum application rate
maximum amount in millilitres per square metre of the wood preservative product permitted for application to the wood specimens in the particular biological test

Note 1 to entry: The maximum application rate is the maximum amount of the curative liquid product that can be practically applied to the wood specimens.

3.9
preventive efficacy
specific property of a wood preservative to avoid infestation of pests in sound timber

3.10
product
formulated wood preservative in the form supplied for sale by the manufacturer

3.11
slow acting
achieving the required level of effectiveness within a period of more than 12 weeks and up to 24 weeks against *Hylotrupes bajulus* and of more than 8 weeks and up to 16 weeks against *Anobium punctatum* using the appropriate standard test method

3.12
wood preservative
 in the form in which they are placed on the market, which are, on the basis of the properties of their active ingredient(s), intended either to prevent wood destroying or wood disfiguring organisms (fungi, insects and marine borers) from attacking wood and wood-based products or to combat an attack by those organisms

Note 1 to entry: For the purpose of this document, the term wood preservatives includes also the products that eradicate an existing infection.

4 Wood destroying organisms

4.1 Insects

The wood boring beetles considered in this document, for which EN test methods exist, are the following:

— *Hylotrupes bajulus* (house longhorn beetle);

— *Anobium punctatum* (common furniture beetle);

They are considered representative of all wood attacking beetles (5.1.3 applies).

NOTE For wood preservatives with species specific claims other than for *Hylotrupes bajulus* or for *Anobium punctatum* see Annex B. If specific curative treatment against *Lyctus brunneus* is demanded the test method described in EN 273 may be used.

4.2 Dry rot fungus

The dry rot fungus (*Serpula lacrymans* = true dry rot fungus) occurs in buildings, causing brown rot in timber. The fungus can develop at relatively low wood moisture contents and is able to penetrate damp masonry over long distances in order to infect further timber or to develop its fruit-bodies.

5 Efficacy requirements for products against wood boring beetles

5.1 Minimum requirements for curative efficacy

5.1.1 General

The curative wood preservative product shall be tested in accordance with the tests specified in Table 1 taking into consideration the relevant organisms and the type of insecticidal product (see 5.1.2).

5.1.2 The following types of insecticidal products are considered:

— fast acting products;

— slow acting products;

— products with deferred effect.

The type of action (fast, slow, deferred effect) for a single product might differ for different target species.

5.1.3 Tests of insecticidal activity shall be carried out against one of the following:

a) "*Hylotrupes bajulus* (C-H)" **and** "*Anobium punctatum* (C-A)" unless b) or c) is applicable and is selected; or

b) the more tolerant species, if the product is based on insecticide(s) for which data on curative efficacy already exist which show different activities against *Hylotrupes bajulus* and *Anobium punctatum*, that is the brv for the less tolerant species is less than 80 % of the brv for the more tolerant species; or

c) "*Hylotrupes bajulus* (C-H)" **or** "*Anobium punctatum* (C-A)", if the product is based on insecticide(s) for which data on the curative efficacy already exist which show more or less equal activity against both beetle species, that is the brv of the least tolerant beetle species is equal to or greater than 80 % of the brv of the more tolerant beetle species.

5.1.4 The maximum application rate in the test shall not exceed 300 ml/m^2.

5.1.5 If the curative wood preservative is designed to be used for the protection of items of cultural heritage from *Anobium punctatum,* the mortality at the end of the test shall be at least 90 %.

Table 1 — Efficacy criteria in biological tests for curative wood preservatives against beetles

Requirement	**Minimum requirements (5.1)**					
	Fast acting (5.1.2)		**Slow acting (5.1.2)**		**Deferred effect (5.1.2)**	
	Hylotrupes bajulus (C-H) (5.1.3)	*Anobium punctatum* (C-A) (5.1.3)	*Hylotrupes bajulus* (C-H) (5.1.3)	*Anobium punctatum* (C-A) (5.1.3)	*Hylotrupes bajulus* (C-H)	*Anobium punctatum* (C-A)
Test	EN 1390[a] (5.1.4)	EN 48	EN 1390[a] (5.1.4)	EN 48	EN 1390[a] (5.1.4)	EN 370
Duration of test	12 weeks	8 weeks	24 weeks	16 weeks	52 weeks	In accordance with test specification
Criterion for brv	80 % mortality at end of test	80 % mortality at end of test (5.1.5)	80 % mortality at end of test	80 % mortality at end of test (5.1.5)	80 % mortality and no emergence at end of test	Maximum emergence 3 out of the 72 larvae inserted

[a] products that have been tested against *H. bajulus* according to EN 22 before 2007 and proved effective, are considered to meet the minimum efficacy requirements for fast acting and slow acting insecticidal products.

5.2 Requirements for preventive efficacy

Where local conditions require the curative wood preservative product to have also preventive efficacy, or to support the claims of manufacturers or the demands of specifiers, the product shall have its preventive efficacy tested in accordance with EN 599-1 at an application rate equal to or lower than that at which tests were conducted to assess the curative efficacy.

6 Efficacy requirements for barrier treatments against dry rot fungus

The masonry fungicide tested according to CEN/TS 12404 shall prevent the growth of the fungus through mortar specimens (no ratings higher than 1).

7 Derivation of effective values

7.1 Effective value against beetles

The effective value is derived from the results of the biological tests. The manufacturer recommended application rate shall not be lower than the effective value (see 3.6).

7.2 Effective value against dry rot fungus

The effective value is derived from the results of the biological test and shall be equal to the application rate of the ready to use formulation of the wood preservative, which prevented fungal growth through the mortar specimens (no ratings higher than 1).The manufacturer recommended application rate shall not be lower than the effective value (see 3.6).