



**SLOVENSKI STANDARD**  
**SIST EN 15228:2009**  
**01-julij-2009**

---

Številka in leto izdaje: 01-julij-2009

Structural timber - Structural timber preservative treated against biological attack

Bauholz - Bauholz für tragende Zwecke mit Schutzmittelbehandlung gegen biologischen Befall

Bois de structure - Bois de structure traité avec un produit de préservation contre les attaques biologiques

**ITeH STANDARD PREVIEW**  
**(standards.iteh.ai)**

Ta slovenski standard je istoveten z: **EN 15228:2009**

SIST EN 15228:2009  
<https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55ff8c269d/sist-en-15228-2009>

---

**ICS:**

79.040 Les, hlodovina in žagan les Wood, sawlogs and sawn timber

**SIST EN 15228:2009**

**en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 15228:2009

<https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55fffc269d/sist-en-15228-2009>

EUROPEAN STANDARD

EN 15228

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2009

ICS 71.100.50; 79.040

English Version

## Structural timber - Structural timber preservative treated against biological attack

Bois de structure - Bois de structure traité avec un produit de préservation contre les attaques biologiques

Bauholz - Bauholz für tragende Zwecke mit Schutzmittelbehandlung gegen biologischen Befall

This European Standard was approved by CEN on 7 February 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.

[SIST EN 15228:2009](https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55fffc269d/sist-en-15228-2009)

<https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55fffc269d/sist-en-15228-2009>



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

<b>Contents</b>	<b>Page</b>
Foreword .....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	5
4 Requirements for structural timber products treated against biological attack.....	5
4.1 Timber .....	5
4.2 Penetration .....	5
4.3 Retention .....	5
4.4 Reaction to fire.....	5
4.4.1 General .....	5
4.4.2 Products classified without further testing .....	5
4.4.3 Other products.....	5
4.5 Strength and stiffness properties .....	6
4.6 Dangerous substances .....	7
4.6.1 Content of pentachlorophenol (PCP) .....	7
4.6.2 Release of other dangerous substances .....	7
5 Evaluation of conformity.....	7
5.1 General.....	7
5.2 Initial type testing .....	7
5.2.1 General .....	7
5.2.2 ITT characteristics of timber treated against biological attack .....	7
5.3 Factory production control.....	8
5.3.1 General .....	8
5.3.2 Equipment .....	8
5.3.3 Control of raw materials and preservatives.....	9
5.3.4 Treatment solution preparation .....	9
5.3.5 Process control .....	9
6 Marking .....	9
Annex A (normative) Preservative treatment not affecting strength and stiffness properties of treated timber .....	11
A.1 General.....	11
A.2 Preservatives types .....	11
Bibliography .....	12

## Foreword

This document (EN 15228:2009) has been prepared by Technical Committee CEN/TC 124 “Timber structures”, the secretariat of which is held by SFS.

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 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

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.

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

[SIST EN 15228:2009](https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55fff6269d/sist-en-15228-2009)

<https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-5e55fff6269d/sist-en-15228-2009>

## 1 Scope

This European Standard specifies general requirements for structural timber that has been treated with preservatives against biological attack.

This European Standard also specifies requirements for the evaluation of conformity and marking of preservative treated timber products when they are placed on the market.

Treatments which include a biocide are covered by this standard.

It does not provide details of which preservative treatments are necessary for a particular type of structural timber product to achieve a required service life, as regional climatic differences and prevalent biological agents would need to be taken into account for that purpose.

This European Standard does not cover any subsequent treatment which may be required for structural timber products which have been machined, bored or planed after the CE marking has been applied.

This standard does not cover the qualification of preservation products used to treat structural timber.

## 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 335-1:2006, *Durability of wood and wood-based products – Definition of use classes – Part 1: General*

[SIST EN 15228:2009](#)

EN 351-1:2007, *Durability of wood and wood-based products – Preservative-treated solid wood – Part 1: Classification of preservative penetration and retention*

EN 351-2:2007, *Durability of wood and wood-based products – Preservative-treated solid wood – Part 2: Guidance on sampling for analysis of preservative-treated wood*

EN 384, *Structural timber – Determination of characteristic values of mechanical properties and density*

EN 408, *Timber structures – Structural timber and glued laminated timber – Determination of some physical and mechanical properties*

EN 599-1:1996, *Durability of wood and wood-based products – Performance of preventive wood preservatives as determined by biological tests – Part 1: Specification according to hazard class*

EN 13501-1, *Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 14080:2005, *Timber structures - Glued laminated timber - Requirements*

EN 14081-1:2005, *Timber structures – Strength graded structural timber with rectangular cross section – Part 1: General requirements*

EN 14250:2004, *Timber structures – Product requirements for prefabricated structural members assembled with punched metal plate fasteners*

CEN/TR 14823, *Durability of wood and wood-based products – Quantitative determination of pentachlorophenol in wood – Gas chromatographic method*

prEN 15497:2008, *Finger jointed structural timber – performance requirements and minimum production requirements*

EN ISO 9001, *Quality managements systems – Requirements (ISO 9001:2008)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 335-1:2006, EN 351-1:2007, EN 351-2:2007, EN 599-1:1996, EN 14080:2005, EN 14081-1:2005, EN 14250:2004 and prEN 15497:2008 apply.

## 4 Requirements for structural timber products treated against biological attack

### 4.1 Timber

Timber to be preservative treated shall comply with EN 14081-1.

### 4.2 Penetration

The penetration shall be declared in terms of the penetration classes listed in EN 351-1.

### 4.3 Retention

The mean retention in the analytical zone (see EN 351-1) shall be equal to or greater than the preservative retention declared by the treated timber producer. This means that retention shall be declared as the retention value.

The required retention value shall be determined by the national provisions valid at the place of use of the treated timber, or be derived from the critical value for the relevant use class as defined in EN 599-1.

### 4.4 Reaction to fire

#### 4.4.1 General

The reaction to fire performance shall be declared where the product is subject to reaction to fire regulatory requirements and it may also be done when the product is not subject to such regulatory requirements.

#### 4.4.2 Products classified without further testing

Where the preservative treatment does not result, when dry, in an addition in the analytical zone of the treated timber of more than 2 % by mass of organic material, the reaction to fire classification given in the appropriate product standard for the untreated product shall apply.

#### 4.4.3 Other products

Where the preservative treatment adds in the analytical zone more than 2 % by mass of organic material to the initial mass of the re-dried timber, the treated product shall be tested and classified in accordance with EN 13501-1.

**EN 15228:2009 (E)**

When tested according to EN 13823 (i.e. SBI test), the specimen shall be mounted in accordance with the following procedure:

- for testing, the whole area of both wings in the SBI apparatus shall be covered with timber pieces with a minimum thickness of 22 mm, mounted edge to edge (butt jointed), without jointing or bonding and orientated horizontally or vertically;
- the pieces shall be supported by timber battens, minimum 30 mm by 30 mm, fixed to the test backing boards at 400 mm to 600 mm centres horizontally or vertically (perpendicular to the orientation of the timber pieces).

The results for products tested with a given preservative type and retention value in the analytical zone, shall be applicable for the same preservative type applied at a lower retention, and to timber thicknesses and densities greater than those tested.

**4.5 Strength and stiffness properties**

Strength and stiffness shall be assumed not to be affected in the following cases:

- treatments and preservatives listed in Annex A, or
- treatments with a penetration class not exceeding class NP2 according to EN 351-1.

In any other case (e.g. permeable species and deep treatments with class NP 3 and above and with non organic products) since the treatment might affect the strength and stiffness properties, an evaluation shall be performed according to the following principles:

- Two matched samples of 50 commercial size pieces each shall be taken. Matching shall be based on the modulus of elasticity (MOE);
- One sample shall remain untreated as the control sample. The remaining sample shall be treated with the treatment to be assessed;
- From each piece, 2 specimens shall be taken; one for a bending test according to EN 408 and, the other one for a tension perpendicular to grain according to EN 408;
- From the bending specimens, pieces to be tested for equilibrium moisture content shall be taken, according to EN 408;
- All specimens shall be tested for bending strength or tension perpendicular to grain according to EN 408 and EN 384 and the tested values reported;
- A statistical test to compare the means of both samples at a significance level of 75 % shall be performed;

NOTE see for example ISO 12491:1997, 6.4.

- In case of a statistical difference in the means of more than 10 %, the preservative treated timber shall be considered as not meeting the requirements of this European Standard.



## 4.6 Dangerous substances

### 4.6.1 Content of pentachlorophenol (PCP)

If a preservative used for the treatment contains pentachlorophenol (PCP), then the treated structural timber shall be tested according to CEN/TR 14823. If the value of  $5 \times 10^{-6}$  is exceeded, it shall be declared in the marking as follows, "PCP >  $5 \times 10^{-6}$ ".

NOTE In certain Member States preservative treated structural timber products with a PCP content of more than  $5 \times 10^{-6}$  are not allowed.

### 4.6.2 Release of other dangerous substances

Consideration shall be given to other dangerous substances.

NOTE 1 Such cases are covered by Annex ZA, Clause ZA1, of each relevant harmonized standard.

NOTE 2 Some requirements of the Directive 98/8/EC with regard to placing of biocidal products on the market may also be applicable to preservatives.

## 5 Evaluation of conformity

### 5.1 General

The compliance of preservative treated structural timber with the requirements of this European Standard shall be demonstrated by: **(standards.iteh.ai)**

- initial type testing, [SIST EN 15228:2009](https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-3c5311c269d/sist-en-15228-2009)
- factory production control, including treated timber product assessment. <https://standards.iteh.ai/catalog/standards/sist/acc44a44-25ca-469d-a786-3c5311c269d/sist-en-15228-2009>

For the purposes of testing, preservative treated timber products may be grouped into families, where it is considered that the results from testing any product within the family are representative for all other products within that family.

### 5.2 Initial type testing

#### 5.2.1 General

The purpose of initial type testing is to obtain by direct testing, where this is relevant, declared values or classes or other appropriate information on all characteristics of the treated structural timber given in Clause 4.

Initial type testing shall be performed to show conformity with this European Standard.

Tests previously performed in accordance with the provisions of this European Standard (same product, requirements(s), test method, sampling procedure, system of attestation of conformity, etc.) shall be taken into account.

Whenever a change occurs which would change significantly one or more of the characteristics, the initial type tests shall be repeated for the appropriate characteristic(s).

#### 5.2.2 ITT characteristics of timber treated against biological attack

a) With regard to the declared penetration class and retention value, the initial type testing shall be carried out in accordance with the direct testing requirements of EN 351-1. The samples shall be treated