



SLOVENSKI STANDARD
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Zaščitna sredstva za les - Ugotavljanje preventivnega delovanja proti Reticulitermes santonensis (evropskim termitom) (laboratorijska metoda)

Wood preservatives - Determination of preventive action against Reticulitermes species (European termites) (Laboratory method)

Holzschutzmittel - Bestimmung der vorbeugenden Wirkung gegenüber Reticulitermes-Arten (Europäische Termiten) (Laboratoriumsverfahren)

Produits de préservation des bois - Détermination de l'action préventive contre les espèces de Reticulitermes (termites européens) (Méthode de laboratoire)

Ta slovenski standard je istoveten z: prEN 118

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**Wood preservatives - Determination of preventive action
against Reticulitermes species (European termites)
(Laboratory method)**

Produits de préservation des bois - Détermination de
l'action préventive contre les espèces de
Reticulitermes (termites européens) (Méthode de
laboratoire)

Holzschutzmittel - Bestimmung der vorbeugenden
Wirkung gegenüber Reticulitermes-Arten (Europäische
Termiten) (Laboratoriumsverfahren)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 38.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European Foreword

This document (prEN 118:2023) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and derived materials”, the secretariat of which is held by SIS.

This document will supersede EN 118:2013.

Significant technical differences between this document and EN 118:2013 are as follows:

- the required purity of fine white quartz sand was lowered (5.2.1.1);
- the values for the examination of termite attack in rating 2i) and 3i) were slightly changed to close rating gaps.

NOTE The species name “*Reticulitermes santonensis*” is officially withdrawn and replaced by *Reticulitermes flavipes*. This document will follow the new regulation.

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prEN 118:2023 (E)**Introduction**

This document describes a laboratory method of testing which gives a basis for assessment of the effectiveness of a wood preservative, when applied as a surface treatment, against the *Reticulitermes* species of European termites.

This laboratory method provides one criterion by which the value of a product can be assessed. It is further recommended that results from this test should be supplemented by those from other appropriate tests, and above all by comparison with practical experience.

When products which are very active at low concentrations are used it is very important to take suitable precautions to isolate and separate, as far as possible, operations involving chemical products, other products, treated wood, laboratory apparatus and clothing. Suitable precautions should include the use of separate rooms, areas within rooms, extraction facilities, conditioning chambers and special training for personnel (see also Annex C for environmental, health and safety precautions).

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1 Scope

This document specifies a method for the determination of the preventive action of a wood preservative against the Reticulitermes species of European termites¹ when the preservative is applied as a surface treatment to wood.

This method is applicable to:

- water-insoluble chemicals which are being studied as active ingredients;
- organic formulations, as supplied or as prepared in the laboratory by dilution of concentrates;
- organic water-dispersible formulations as supplied or as prepared in the laboratory by dilution of concentrates; and
- water-soluble materials, for example salts.

NOTE This method can be used in conjunction with an ageing procedure, for example EN 73 or EN 84.

2 Normative reference

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

3 Terms and definitions

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

3.1

representative sample

sample having its physical or chemical characteristics identical to the volumetric average characteristics of the total volume being sampled

3.2

supplier

sponsor of the test (person or company providing the sample of wood preservative to be tested)

4 Principle

Surface treatment of test specimens of a susceptible wood species with the preservative or, if a concentrate is being used, with known dilutions of the preservative.

Exposure of these test specimens to specified colonies of European Reticulitermes² species and assessment of the attack suffered after exposure under fixed conditions and over a fixed period.

¹ This method can be applied not only to different species of Reticulitermes, but also to other species of the family Rhinotermitidae, where necessary adapting the temperature and humidity conditions and the assessment of attack to the specific behaviour of the species concerned.

² In providing biological validation of individual species, it is essential that the locality of origin of each test termite species is given. The description of the locality should at least include the district name.

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Comparison of these results with those obtained from untreated and solvent or diluent-treated control test specimens.

5 Test materials

5.1 Biological material

Workers, soldiers and nymphs of an identified termite species of *Reticulitermes*.

The termite species and the locality of origin should be stated in the test report and their identification should be proved.

The termites should be obtained from colonies reared as described in Annex B.

5.2 Products and reagents

5.2.1 Substrate for establishing the colonies. A choice of:

5.2.1.1 Fine white quartz sand consisting of grains of crystallized silica, very pure (90 % silica), and free from any organic substances³.

5.2.1.2 A hydrated, laminar, aluminium-iron-magnesium silicate exfoliated to give particles of 1 mm to 3 mm with an apparent density of 80 kg/ m³ to 90 kg/ m³. Particles of less than 1 mm shall be eliminated by sieving prior to use, to ensure the absence of free water and prevent any significant agglomeration of the particles.

5.2.2 Adhesive, which cannot be attacked by the termites and is non-toxic, for securing the tubes. This adhesive shall also not react with the preservative applied to the wood.

5.2.3 Sealant.

5.2.3.1 Paraffin wax, setting point of 52 °C to 54 °C, for sealing the relevant surfaces of test specimens to be treated with solutions in which water is the continuous phase.

5.2.3.2 Gelatine, for sealing the relevant surfaces of test specimens to be treated with solutions in which an organic solvent is the continuous phase.

5.2.3.3 Inert adhesive, for sealing the relevant surfaces of test specimens to be treated with other solutions in which e.g. an emulsion solvent is the continuous phase.

5.2.4 Water, complying with grade 3 of EN ISO 3696.

5.2.5 Solvent or diluent. A suitable volatile liquid that will dissolve or dilute the preservative but does not leave a residue in the wood which would have a toxic effect on the insect at the end of the conditioning period.

5.3 Apparatus

5.3.1 Culturing chamber, with air circulation, controlled at (26 ± 2) °C and a minimum relative humidity of (70 ± 5) %.

³ In France, Fontainebleau sand, of which more than 97 % of the particles are between 75 µm and 300 µm in size, meets these requirements.

- 5.3.2 Conditioning chamber**, well ventilated, controlled at (20 ± 2) °C and relative humidity (65 ± 5) %⁴.
- 5.3.3 Laboratory work area**, well ventilated, where treatment of the test specimens is carried out⁵.
- 5.3.4 Testing chamber**, protected from light, ventilated and controlled at (26 ± 2) °C and at a minimum relative humidity of (70 ± 5) %.
- 5.3.5 Ordinary laboratory equipment** for application by brushing or by pipette of a liquid preservative product and including an analytical balance capable of weighing to an accuracy of 0,01 g.
- 5.3.6 Protective gloves.**
- 5.3.7 Instruments** adapted for termite manipulation (aspirator, forceps).
- 5.3.8 Glass tubes** open at both ends, one end being ground:
- interior diameter: ca. 25 mm;
 - length: ca. 110 mm.

6 Sampling

The sample of preservative shall be representative of the product to be tested. Samples should be stored and handled in accordance with any written recommendations from the supplier.

For the sampling of preservatives from bulk supplies, the procedure given in EN 212 should be used.

7 Test specimens

7.1 Species of wood

The reference species is Scots pine (*Pinus sylvestris* Linnaeus).⁰²³

Additional tests can be made with other timber species but, if so, this should be stated in the test report.

7.2 Wood quality

The wood shall be free from visible cracks, stain, decay, insect damage and other defects. The wood shall not have been water-stored, floated, chemically treated or steamed. The wood shall originate from trees preferably felled in winter.

Wood that has been kiln dried at temperatures below 60 °C may be used.

The wood shall be exclusively sapwood containing little resin and having between 2,5 annual rings per 10 mm and eight annual rings per 10 mm. The proportion of latewood in the annual rings shall not exceed 30 % of the whole.

It is recommended to use test specimens of similar growth rate within a single test.

⁴ The conditioning of test specimens after treatment is permissible in the laboratory work area (5.3.3) provided that this meets the conditions specified for the conditioning chamber (5.3.2).

⁵ It is essential to follow proper safety measures for handling flammable or toxic material. It is essential that operators avoid excessive exposure to solvents or their vapours.

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7.3 Provision of test specimens

Prepare planed strips with a fine-sawn finish and having a cross-section of $(50 \pm 0,5)$ mm x $(10 \pm 0,5)$ mm removing a minimum of 2 mm from any surfaces exposed during drying. The longitudinal faces shall be parallel to the direction of the grain. The annual rings shall have a contact angle of $(45 \pm 15)^\circ$ to the broad faces. Make transverse cuts, neatly to give sharp edges and a fine-sawn finish to the end grain surfaces, to give test specimens $(50 \pm 0,5)$ mm long.

The test specimens shall originate from a minimum of three trees or shall be taken at random from a stock originally of more than 500 test specimens.

7.4 Dimensions of test specimens

The dimensions of each specimen after reaching equilibrium in the conditioning chamber (5.3.2) shall be $(50 \pm 0,5)$ mm x $(50 \pm 0,5)$ mm x $(10 \pm 0,5)$ mm.

The surface area of the face to be treated is theoretically 25 cm² but an allowance shall be made for any encroachment of the sealing compound on to this face.

Mark each test specimen so that it can be identified throughout the test.

7.5 Number and distribution of test specimens

The test specimens shall be divided as follows:

- a) treated test specimens: these are the treated test specimens which are subject to attack by *Reticulitermes*; use at least 6 treated test specimens;
- b) untreated control test specimens for checking the virulence of the termites taken for the test: these untreated test specimens are subjected to attack by *Reticulitermes*; for each series of tests use at least three control test specimens.

7.6 Inserts

The inserts are discs of untreated Scots Pine sapwood, $(1 \pm 0,2)$ mm thick and having a diameter about 1 mm to 2 mm less than the interior diameter of the tubes (5.3.8), so that they fit snugly into the tubes after moistening.

8 Procedure

8.1 Preparation of the test specimens

8.1.1 Conditioning of test specimens prior to sealing

Allow the test specimens to condition in the conditioning chamber (5.3.2) for a minimum of two weeks.

8.1.2 Sealing of the transverse and the narrower longitudinal faces

Seal the transverse and the narrower longitudinal faces using the sealer (5.2.3).

8.1.3 Treatment of test specimens

8.1.3.1 Preparation of treatment solutions

8.1.3.1.1 Solid preservatives

— Water-soluble preservatives: dissolve the preservative in water (5.2.4) to the required concentration;