Puidukaitsevahendid. Kaitsevõime määramine Lyctus brunneus (stephens)'i vastu. Osa 1: Pealekandmine pinna töötlemisel (laboratoorne meetod)

Wood preservatives - Determination of the protective effectiveness against Lyctus brunneus (Stephens) - Part 1: Application by surface treatment (laboratory method)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 20-1:2000 sisaldab Euroopa standardi EN 20-1:1992 ingliskeelset teksti. Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 20-1:2000 consists of the English text of the European standard EN 20-1:1992. This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: Standardi EN 20 käesolev osa määrab kindlaks meetodi puidukaitsevahendi kaitsevõime või toksiliste omaduste määramiseks Lyctus brunneus (stephens)'iga nakatumise vastu, kui toode on puidu pinnale kantud puidu töötlemisel.	**Scope:**

ICS 71.100.50

Võtmesõnad: efektiivsus, insektitsiidid, kaitse kahjurite vastu, laborikatsed, lyctus, määramine, pestitsiidid, puidukaitsevahendid, puit, vältimine

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 20-1

July 1992

UDC 674.048.4 : 620.193.87

Descriptors: Wood, wood preservative, pesticides, insecticides, protection against pests, laboratory tests, effectiveness, prevention, Lyctus.

English version

Wood preservatives

Determination of the protective effectiveness*) against *Lyctus brunneus* (Stephens)
Part 1: Application by surface treatment (laboratory method)

Produits de préservation du bois; détermination de l'efficacité protectrice vis-à-vis de Lyctus Brunneus (Stephens). Partie 1: Application par traitement de surface (méthode de laboratoire)

Holzschutzmittel; Bestimmung der vorbeugenden Wirkung gegenüber Lyctus brunneus (Stephens). Teil 1: Oberflächenbehandlung (Laboratoriumsverfahren)

This European Standard was approved by CEN on 1992-07-01.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword

This Part of EN 20 has been prepared by Technical Commitee CEN/TC 38 'Durability of wood and wood-based products', the Secretariat of which is held by AFNOR.

This Part of EN 20, together with EN 20-2, replaces EN 20:1974. It is required to enable assessments of the effectiveness of wood preservatives which are intended to be applied by surface treatment.

National standards identical to this European Standard shall be published, and conflicting national standards withdrawn, by 93-01-31 at the latest.

This Part of EN 20 was adopted by CEN, and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This Part of EN 20 describes a laboratory method of test which gives a basis for assessment of the protective effectiveness of a wood preservative, when applied by surface treatment, against *Lyctus brunneus*. It allows determination of the concentration at which the product prevents the development of infestation from egg-laying.

It may also be used with formulations ready for use.

The species *Lyctus brunneus* is chosen because of its practical relevance and because it can be used easily in laboratory tests. The method can be used with other lyctid species, but the results may not be comparable with those obtained with *Lyctus brunneus*.

The test specimens are enriched with a defined nutrient solution, before exposure to egg-laying, in order to ensure uniformity of nutrient quality of test specimens between different laboratories.

This laboratory method provides a criterion by which the value of a product can be assessed. In making this assessment, the methods by which the preservative may be applied should be taken into account. 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.

1 Scope

This Part of EN 20 specifies a method for determination of the protective effectiveness or the toxic values of a wood preservative against infestation by *Lyctus brunneus* (Stephens) when the product is applied by surface treatment to wood.

This method is applicable to:

- water-insoluble chemicals which are being studied as active insecticides;
- water-insoluble organic formulations, as supplied or as prepared in the laboratory by dilution of concentrates;
- water-dispersible organic formulations as supplied or as prepared in the laboratory by dilution of concentrates;
- water-soluble materials (e.g. salts).

NOTE: This method may be used in conjunction with ageing procedures, which do not remove the added nutrient.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

ISO 835-1:1981	Laboratory glassware; graduated pipettes; general requirements
ISO 3696:1987	Water for analytical laboratory use; specification and test methods

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 representative sample: A sample with its physical or chemical characteristics identical to the volumetric average characteristics of the total volume being sampled.

3.2 supplier: The sponsor of the test.

4 Principle

Depending on the test being carried out, either a set of test specimens of a susceptible[+]) wood species is impregnated with a nutrient solution and then surface-treated with a solution of the preservative

or, if toxic values are to be determined, several sets of test specimens of a susceptible wood species are impregnated with a nutrient solution and then surface-treated with a series of solutions in which the concentration of preservative is ranged in a given progression.[+])

The treated test specimens are exposed to adult *Lyctus brunneus* and the resulting attack compared to that in untreated control specimens. If the preservative has been prepared in the laboratory by dilution of a concentrate or by dissolution of a solid, the resulting attack is also compared to that in solvent or diluent treated control specimens.

5 Test materials and apparatus

5.1 Biological material

Lyctus brunneus (Stephens) are insects emerged from cultures not more than 48 h[+]) before use in the test, reared[+]) for at least two generations on non-enriched oak or no more than three generations on enriched oak.

NOTE: The culturing of *Lyctus brunneus* requires care in order to obtain a regular supply of adults which have not already laid eggs. The culturing technique, which experience has shown to be suitable, is described in annex B.

5.2 Products and reagents

5.2.1 Paraffin wax, for sealing the relevant surfaces of specimens to be treated with solutions in which water is the continuous phase.

NOTE: Paraffin wax with a setting point of 52 to 54 °C has been found to be suitable.

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

5.2.3 Paste, for securing filter paper. The paste shall be starch-free, non-toxic to *Lyctus* and insoluble in the product under test.

NOTE: Sodium carboxymethyl cellulose, food grade, has been found to be suitable.

5.2.4 Water, complying with grade 3 as specified in ISO 3696.

5.2.5 Solvent or diluent, a volatile liquid that will dissolve or dilute the preservative but does not leave a residue in the wood at the end of the post-treatment conditioning period, which has a toxic effect on the insects.

CAUTION: Do not use benzene or other solvents which pose a health risk.

5.2.6 Peptone, prepared as an enzymatic hydrolysate of meat.

5.2.7 D(+)-glucose.

5.2.8 Filter paper, ordinary quality, medium-fast grade.

5.2.9 Fine cloth, of cotton or linen, with a mesh size of less than 0,3 mm.

5.3 Apparatus

5.3.1 Culturing chamber, with air circulation, controlled at (26 ± 1) °C and (75 ± 5) % relative humidity.[+])

5.3.2 Conditioning chamber, well-ventilated, controlled at (20 ± 2) °C and (65 ± 5) % relative humidity.

NOTE: The conditioning of specimens may be carried out in the laboratory work area (see 5.3.4) provided that this has the conditions specified for the conditioning chamber (see 5.3.2).

5.3.3 Drying chamber, well-ventilated, controlled at (30 ± 2) °C.

5.3.4 Laboratory work area, well-ventilated, where treatment of the test specimens is carried out.

CAUTION: It is essential to follow safety procedures for handling flammable and toxic materials. Avoid excessive exposure of operators to solvents or their vapours.