

Wood preservatives — Determination of the eradicator action against *Hylotrupes* *bajulus* (Linnaeus) larvae — Laboratory method

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National foreword

This British Standard is the UK implementation of EN 1390:2006. It supersedes DD ENV 1390:1995 and BS 5219:1975 which are withdrawn.

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A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Méthode de laboratoire

Holzschutzmittel - Bestimmung der bekämpften Wirkung
gegenüber Larven von *Hylotrupes bajulus* (Linnaeus) -
Laboratoriumsverfahren

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Foreword

This document (EN 1390:2006) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and derived materials”, 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of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

This document supersedes ENV 1390:1994.

Significant technical differences between this standard and ENV 1390:1994 are as follows:

- a) introduction of new harmonised specifications for the test specimens used in the diverse biological tests;
- b) separation of the method according to the expected test periods for fast and slow acting preservatives and for deferred acting preservatives respectively;
- c) admission of the terms given in EN 1001-1 and the definitions of EN 1001-2;
- d) introduction of an informative Annex to take account of consideration for minimisation of environmental and health hazards caused by the use of this biological test.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

Introduction

This document describes a laboratory method of testing which gives a basis for the assessment of the eradicator action of fast and slow acting wood preservatives and of deferred acting wood preservatives against *Hyloterpes bajulus*. It allows determination of the lethal effect of a surface application of a preservative product on a population of large larvae previously introduced into the test specimens.

The method simulates conditions in practice where a beam is treated, which is only slightly attacked and where cutting away has not exposed insect tunnels. This represents a severe test of the product.

In some particular instances, for example where the preservative is to be used on timbers of large dimensions, laminated beams, blockboard, plywood and other panel products, other test methods can be used to obtain complementary information on the effectiveness of the eradicator action of a product. Such methods lie outside the scope of this document.

This laboratory method provides one 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 that 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).

1 Scope

This document specifies a method for the determination of the eradicator action of a surface application of a fast and a slow acting wood preservative product or a deferred acting wood preservative product on timber infested with larvae of *Hylotrupes bajulus* (Linnaeus).

This method is applicable to:

organic formulations, as supplied or as prepared in the laboratory by dilution of concentrates,

or

organic water-dispersible formulations, as supplied or as prepared in the laboratory by dilution of concentrates,

or

water-soluble products, for example, salts.

NOTE An ageing procedure cannot be combined with this method.

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 ISO 3696, *Water for analytical laboratory use - Specification and test methods* (ISO 3696:1987)

ISO 835-1:1981, *Laboratory glassware - Graduated pipettes - Part 1: General requirements*

3 Terms and definitions

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

3.1

representative sample

sample with physical and/or chemical characteristics identical to the volumetric average characteristics of the total volume being sampled

[EN 1001-2:2005, 4.71]

3.2

supplier

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

[Adapted from EN 1001-2:2005, 4.83]

4 Principle

Insertion of larvae of *Hylotrupes bajulus* into test specimens. After a period of time to allow the larvae to establish themselves in the test specimens, treatment of these test specimens by brushing or pipetting of the test preservative product.

After the time necessary for the preservative to act effectively, assessment of the mortality of the larvae compared with that of larvae in untreated control test specimens.

5 Test materials

5.1 Biological material

5.1.1 *Hylotrupes bajulus* (Linnaeus) larvae

5.1.2 Source of larvae.

The larvae shall preferably be obtained from cultures reared according to the method described in Annex B.

NOTE Larvae can also be taken from naturally infested wood, in which case they should be transferred into sapwood of pine and stored for at least four weeks under the rearing conditions specified in Annex B.

Do not use the larvae in the test if they have not fed normally during this storage period.

5.1.3 Provision of larvae

Carefully split or crumble infested blocks to extract larvae.

Keep the larvae separate from one another in glass receptacles for two or three days in the culturing chamber (5.3.1) to check they are healthy.

5.1.4 Choice of larvae

Use only healthy larvae in the test.

NOTE 1 A healthy larva can be recognized by ivory-white colour, its firm consistency and rounded appearance, and by the absence of wounds or bites, which show up as dark marks. Healthy larvae react to the touch by vigorous movement and attempts to bite.

Reject any larvae, which are shrunken or aged which have recently moulted, or which are in a pre-pupal stage.

Weigh each larva and place it in a glass receptacle marking the receptacle with the weight of the larva. Make up two groups with the weight ranges:

- 51 mg to 100 mg and

- 101 mg to 150 mg.

NOTE 2 Larvae with a mass larger than 150 mg in mass are unsuitable as they can pupate during the course of the test.

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 °C to 54 °C has been found suitable.

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

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

5.2.4 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 that has a toxic effect on the insects.

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