



SLOVENSKI STANDARD SIST-TS ENV 1250-1:2004

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Wood preservatives - Methods for measuring losses of active ingredients and other preservative ingredients from treated timber - Part 1: Laboratory method for obtaining samples for analysis to measure losses by evaporation to air

Wood preservatives - Methods for measuring losses of active ingredients and other preservative ingredients from treated timber - Part 1: Laboratory method for obtaining samples for analysis to measure losses by evaporation to air

Holzschutzmittel - Verfahren zur Bestimmung der Abgabe von Wirkstoffen und anderer Schutzmittelbestandteile aus behandeltem Holz - Teil 1: Laboratoriumsverfahren, um Analysenproben zur Bestimmung der Abgabe durch Verdunstung in Luft zu erhalten

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Produits de préservation du bois - Mesurage des pertes de matières actives et d'autres composants du produit de préservation a partir de bois traité - Partie 1: Méthode de laboratoire pour obtenir des échantillons pour analyse pour mesurer les pertes par évaporation a l'air

Ta slovenski standard je istoveten z: ENV 1250-1:1994

ICS:

71.100.50 S^ { ä äp Á Á æ ä Á • æ Wood-protecting chemicals

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English version

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This European Prestandard (ENV) was approved by CEN on 1994-09-28 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into an European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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CEN

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Prestandard was drawn up by the WG 11 "Fixation of biocides" of CEN/TC 38 "Durability of wood and wood based products", the secretariat of which is held by AFNOR.

In accordance with the CEN/CENELEC internal Regulation the following countries are bound to announce this European Prestandard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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Introduction

This part of ENV 1250 describes a procedure for obtaining samples for analysis to measure losses by evaporation to air of active ingredients and other preservative ingredients from test specimens of wood that have previously been treated with a preservative. It is intended that the results of analysis will enable the rate of loss of active ingredients and other ingredients of a wood preservative from treated timber under controlled conditions to be established.

It is not intended that the results of analysis be used to make absolute judgements of losses of wood preservative ingredients from treated timber in service since the results cannot be related to in-service exposure conditions of wooden components. The methodology is therefore of interest, for example, as part of the development of preservatives. The results are relevant to the preservative only, not to a combination of preservative and method of application.

NOTE : EN 73 describes another method involving evaporative ageing of treated timber but is not related to this part of ENV 1250. EN 73 is used solely as an accelerated ageing procedure prior to biological testing for efficacy assessment.

1 Scope

This part of ENV 1250 describes a procedure for obtaining samples for analysis to measure losses by evaporation to air of active ingredients and other preservative ingredients from test specimens of wood that have previously been treated with a preservative.

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2 Normative references

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This part of ENV 1250 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 part of ENV 1250 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 599-1:1994	Durability of wood and wood-based products. Performance of wood preservatives as determined by biological tests. ¹⁾
ISO 835-1:1981	Laboratory glassware - Graduated pipettes - Part 1 : General requirements

¹⁾ In course of preparation

3 Definitions

For the purposes of this part of ENV 1250 the following definitions apply :

3.1 active ingredients

The individual chemical compound or compounds included in the wood preservative product to give it specific activity against the respective biological agencies of deterioration.

3.2 critical value

Value equivalent to the highest biological reference value (in grams per square metre of kilograms per cubic metre) obtained from all the biological tests carried out in accordance with EN 599-1 for any given hazard class. It is the minimum amount of the product required for effectiveness for that hazard class according to the tests carried out.

NOTE : The biological reference value is the amount of wood preservative product found to be effective in preventing attack by a particular biological agency in a test prescribed in EN 599-1.

3.3 other preservative ingredients

Substance or substances other than active ingredients, used in the wood preservative formulation and which may be deposited in treated wood.

3.4 penetrating treatment process

Process which includes features or procedures intended to overcome the natural resistance of wood to penetration by a wood preservative product in its ready for use form.

NOTE : such processes include for example currently practised technologies of diffusion treatments, double-vacuum and vacuum-pressure methods.

3.5 representative sample

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

3.6 superficial application process

Process which does not include features or procedures intended to overcome the natural resistance of wood to penetration by a wood preservative product in its ready for use form.

NOTE : such processes include for example brush and spray techniques and short-term immersion (dipping) processes in wood which normally has only a few minutes contact time with the preservative.

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3.7 supplier

The sponsor of the test.

4 Principle

End-sealed preservative-treated and untreated timber test specimens are prepared, and held in a chamber through which air is passed at a controlled rate. The air leaving the chamber is sampled at appropriate intervals.

5 Agents and materials

5.1 End-sealant

A substance which, when applied in accordance with the procedures in 9.1.5, prevents evaporative loss of preservative from the end grain of test blocks under the conditions of test. It shall be free of any substances present in the preservative or which may interface with analytical methods.

NOTE : Generally 2-component epoxy lacquers have been found to be suitable.

6 Apparatus and equipment

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6.1 **Conditioning chamber**, well ventilated and controlled at a temperature of (20 ± 2) °C and (65 ± 5) % relative humidity for conditioning the test specimens.

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6.2 **Vacuum desiccator**, fitted with stopcocks.

6.3 **Vacuum pump** fitted with a pressure gauge and capable of maintaining a pressure of 0,7 kPa.

6.4 **Weights**, of a material that does not react with the preservative solutions under test, to provide ballast for the test specimens.

6.5 **Treatment vessels and covers**, of materials that do not react with the preservative under test.

6.6 **Constant temperature chamber** or other means of controlling the test chamber at (23 ± 1) °C.

NOTE : Conditioning and test chamber temperatures differ only because most laboratories have 20 °C conditioning chambers as standard equipment whereas evaporative loss tests are conventionally carried out at 23 °C.

6.7 Air pump system, to deliver air at a variable but controlled rate to the humidification system (6.8). The air shall be free from moisture and organic materials, and contain no material which would interfere with an analysis of any air-borne ingredients derived from the wood preservative under test during the procedure in 9.4.

NOTE : A typical air pump system uses an oil-less compressor including flow rate control, drawing in ambient air, the emerging air passing through a membrane drier to remove moisture and a catalytic oxidation unit to remove trace organic compounds.

6.8 Air humidification system capable of controlling the humidity of clean air (6.7) at a relative humidity of $(45 \pm 5) \%$ at $(23 \pm 1) ^\circ\text{C}$.

6.9 Test chambers (based upon the pattern in figure 1) of approximately 3 l capacity having a fan to create a through air flow of 0,2 m/s with the chamber empty and without end-caps, air speed being measured at the end opposite the fan. Chambers shall be constructed of non absorbent materials which do not react with the ingredients of the preservative under test with smooth interior surfaces, large enough to hold sixteen test specimens (see clause 8) in the specified pattern (see 9.4) and having appropriate inlet ports for clean air (6.7) and outlet ports with sampling points for extraction of air from the flow.

NOTE : Electropolished stainless steel or glass chambers with radial ventilation fans have been shown to be suitable in many cases. Poly(tetrafluoroethene) coated materials are, however, essential when fluoride-containing preservatives are being evaluated.

6.10 System for producing an air exchange rate of $1,0 \text{ h}^{-1}$

NOTE : The use of a small pump with a mass-flow controller on the outlet side of the test apparatus has been shown to be satisfactory.

6.11 Air sampling system, capable of being attached to the outlet port of the test chamber (6.9), and it capable of retaining all the ingredients under study emerging from the test chamber during the sampling period and allowing subsequent quantitative analysis of those ingredients.

NOTE 1 : The particular sampling system selected will depend upon the ingredients being studied in the preservative and the method of analysis to be used subsequently to quantify them.

NOTE 2 : The air sampling system may include a separate mixing chamber where addition and mixing of internal standard gases can be achieved.

NOTE 3 : Sampling has been successfully achieved by leading air over a trapping train containing absorbents of a type appropriate for the ingredients being analysed using at least two trapping stages.