SLOVENSKI STANDARD
kSIST-TP FprCEN/TR 16663:2013

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Trajnost lesa in lesnih izdelkov - Določanje emisij iz zaščitenega lesa v okolje - Lesni izdelki, izpostavljeni 3. razredu uporabe (niso pokriti, niso v stiku s tlemi) - Delno terenska metoda

Durability of wood and wood-based products - Determination of emissions from preservative treated wood to the environment - Wooden commodities exposed in Use Class 3 (Not covered, not in contact with the ground) - Semi-field method

Dauerhaftigkeit von Holz und Holzprodukten - Abschätzung von Emissionen von mit Holzschutzmitteln behandeltem Holz an die Umwelt - Holzprodukte in Gebrauchsklasse 3 (nicht abgedeckt, ohne Erdkontakt) - Semi-Feldverfahren

Durabilité du bois et des matériaux dérivés du bois - Détermination des émissions dans l'environnement du bois traité avec des produits de préservation - Produits de base en bois exposés à la classe d'emploi n° 3 (dans un endroit abrité, n'étant pas en contact avec le sol) - Méthode semi-terrain

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ICS:

13.020.30	Ocenjevanje vpliva na okolje	Environmental impact assessment
79.040	Les, hlodovina in žagan les	Wood, sawlogs and sawn timber

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

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FprCEN/TR 16663

September 2013

ICS

English Version

Durability of wood and wood-based products - Determination of emissions from preservative treated wood to the environment - Wooden commodities exposed in Use Class 3 (Not covered, not in contact with the ground) - Semi-field method

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

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Foreword

This document (FprCEN/TR 16663:2013) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and wood-based products”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Technical Committee Approval.

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Introduction

The emissions from preservative treated wood into the environment need to be quantified to enable an environmental risk assessment to be made of the treated wood. This document describes a semi-field method for the determination of emissions from preservative treated wood where the preservative treated wood is not covered and not in contact with the ground or water.

The method is a semi-field procedure for obtaining water samples (leachate) from treated wood exposed out of ground contact, during a natural exposure. The quantities of emissions in the leachate are related to the surface area of the wood and may be used to calculate an emission rate in mg/m^2/day which can be used in a scenario for the environmental risk assessment of the treated wood.

NOTE The leachate can also be tested for eco-toxicological effects (example: OECD 202 testing on *Daphnia* sp.).

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1 Scope

This European Standard specifies a method for determining the leaching of active ingredients or other compounds from preservative treated wood by a semi field method for Use Class 3 (outdoor above ground). The preservative treated wood can be tested with or without subsequently surface coating or other water-repellent treatment. The method is applicable to the testing of commercial or experimental preservatives or paint systems applied to non-durable timber by methods appropriate to commercial practice.

2 Normative references

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 5667-3, *Water quality — Sampling — Part 3: Preservation and handling of water samples (ISO 5667-3)*

3 Description of the test method

3.1 Principle

Panels are treated, assembled and placed outdoors, out of ground contact and exposed to the normal environmental and ecological factors which affect preservative treated wood so exposed in practice. The rainwater is retained and the leachate is monitored by chemical analyses of the active ingredients and/or other compounds.

3.2 Quality criteria

The validity of the analytical method for the substances in question should be determined before conducting the test:

a) accuracy;

b) specificity;

c) limit of detection;

d) limit of quantification;

e) precision

NOTE Guidance on the preservation and handling of water samples according to EN ISO 5667-3.

3.3 Wood preservative

The identity of the preservative product used shall be stated in the test report. It shall state the name and other designation of the preservative, and the trade or common name of the active ingredient(s), substances of concern (as defined in the EU Directive 98/8/EC) or a generic description of co-formulates and the composition expressed in terms of the mass fraction of each of the ingredients.

Use of a top coat is possible (identity and amount of top-coat used) shall be stated in the test report.

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3.4 Apparatus

3.4.1 Vessel for receiving water.

Laboratory brown glass flask or plastic jars with no impurities which can influence the active ingredient. Laboratory brown glass flasks are preferred when the preservative contains organic biocides and plastic jars when the preservative contains inorganic biocides.

NOTE EN ISO 5667-3 gives the good practices to preserve water samples.

The brown glass flask or plastic jars shall be protected from heat and sunlight.

The capacity of the vessels depends on the exposure scenario. If the expected annual precipitation is approximately 700 mm and the test set-up is placed horizontal 25 l containers are recommended. If the test set-ups are exposed vertically 5 l containers are recommended.

3.4.2 Gutter, screws, hooks.

All materials used to fix and support the panels and collect the rainwater shall inert. (Stainless steel has been found to be suitable (see Annex A).)

3.4.3 Weather station.

A weather station capable of monitoring the quantity of rainfall, the wind direction and wind speed at the test site shall be used.

3.4.4 Wood working equipment.

Equipment capable of producing the desired finish of the surface; fine sawn or planed.

3.4.5 Condition chamber.

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

3.4.6 Mixing vessel.

A mixing vessel capable of containing minimum 50 l.

3.4.7 Preservative treatment.

Equipment suitable for carrying out vacuum, vacuum-pressure, immersion or surface treatment of specimens.

3.4.8 Balance.

A balance capable of weighing to the nearest 0,1 g.

3.4.9 Kiln.

A kiln suitable to dry the preservative treated timber after treatment and post treatment conditioning, if required. The drying procedure shall follow recommendations from the supplier of the product under test.

3.4.10 Safety equipment and protection clothing.

Appropriate for the test product, to ensure the safety of the operator.

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3.4.11 Refrigerator/Freezer.

A refrigerator or freezer (minimum - 18°C) to store the leachate at low temperature to reduce degradation of the substances to be analysed and the growth of organisms in the leachate. The storage procedure shall follow recommendations from the supplier of the product under test or EN ISO 5667-3.

3.4.12 Chemical analysis equipment.

Analytical equipment appropriate to determine the compounds of interest or the active substance to be analysed in the leachate.

3.4.13 Exposure site.

An open area, free from tall vegetation and not excessively influenced by industrial or agricultural pollution.

3.4.14 Exposure weathering racks.

The exposure racks, to which the panels are attached, should be robust to maintain the panels in the required orientation for the duration of the test. Racks which have been found to be suitable are illustrated in Annex A.

3.5 Test specimens

3.5.1 General

The test specimens who make up the test panel are representative or typical of commercial timber, and exposed to mimic service exposure (e.g. vertical spruce shiplap cladding). Alternatively the test specimens may be selected to be a ‘realistic worst case’ estimation of the emission for a wood preservative in Use Class 3.

3.5.2 Species of wood

The wood species shall be typical of the wood species used for the efficacy testing of wood preservatives, e.g. *Pinus sylvestris* (Linnaeus) (Scots pine).The percentage of sapwood on the exposed face of the panel shall be stated in the test report.

Additional tests may be made using other species; this should be stated in the test report.

3.5.3 Quality of wood and wood moisture content

The quality of wood and wood moisture content shall be typical of the wood used commercially or use sound straight-grained wood. Material of resinous appearance shall be avoided. Use wood with between 2 annual growth rings per 10 mm and 10 annual growth rings per 10 mm in case of Scots pine. The proportion of latewood in the annual rings shall not exceed 30 % of the whole cross-section for Scots pine sapwood.

In a batch of specimens to be treated, the density of an individual is permitted to differ from the mean value of the batch by ± 15 %. The mean density of the treated specimens used for the test shall be recorded in the test report.

Knots are permitted to a limited extent. One knot less than 2 cm in diameter and maximum 3 knots of less than 1 cm are permitted in each board.

If other wood species are used the number of annual rings and density shall be stated in the report.

The density of the panels for each test setup is distributed evenly, so the average density variation between the replicas is less than 10 %. Knots and other defects are evenly distributed over the 3 replicas.