

SLOVENSKI STANDARD
SIST-TS CEN/TS 15119-1:2018
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Nadomešča:
SIST-TS CEN/TS 15119-1:2008

Trajnost lesa in lesnih izdelkov - Določanje emisij iz zaščenega lesa v okolje - 1. del: Sveže zaščiten les v skladiščih in leseni izdelki, izpostavljeni 3. razredu uporabe (nepokrito, ni v stiku z zemljo) - Laboratorijska metoda

Durability of wood and wood-based products - Determination of emissions from preservative treated wood to the environment - Part 1: Wood held in the storage yard after treatment and wooden commodities exposed in Use Class 3 (not covered, not in contact with the ground) - Laboratory method

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Dauerhaftigkeit von Holz und Holzprodukten - Abschätzung von Emissionen von mit Holzschutzmitteln behandeltem Holz an die Umwelt - Teil 1: Holz auf dem Lagerplatz nach der Behandlung und Holzprodukte in Gebrauchsklasse 3 (nicht abgedeckt, ohne Erdkontakt) - Laborverfahren

Durabilité du bois et des matériaux à base de bois - Estimation des émissions dans l'environnement du bois traité avec des produits de préservation - Partie 1 : Bois stocké en dépôt après traitement et articles en bois exposés en classe d'emploi 3 (non couverts, non en contact avec le sol) - Méthode de laboratoire

Ta slovenski standard je istoveten z: CEN/TS 15119-1:2018

ICS:

| | | |
|-----------|------------------------------|---------------------------------|
| 13.020.30 | Ocenjevanje vpliva na okolje | Environmental impact assessment |
| 71.100.50 | Kemikalije za zaščito lesa | Wood-protecting chemicals |
| 79.040 | Les, hlodovina in žagan les | Wood, sawlogs and sawn timber |

SIST-TS CEN/TS 15119-1:2018 en,fr,de

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
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CEN/TS 15119-1

January 2018

ICS 13.020.30; 71.100.50

Supersedes CEN/TS 15119-1:2008

English Version

**Durability of wood and wood-based products -
Determination of emissions from preservative treated
wood to the environment - Part 1: Wood held in the
storage yard after treatment and wooden commodities
exposed in Use Class 3 (not covered, not in contact with
the ground) - Laboratory method**

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Teil 1: Holz auf dem Lagerplatz nach der Behandlung
und Holzprodukte in Gebrauchsklasse 3 (nicht
abgedeckt, ohne Erdkontakt) - Laborverfahren

This Technical Specification (CEN/TS) was approved by CEN on 21 November 2017 for provisional application.

This Technical Specification was corrected and reissued by the CEN-CENELEC Management Centre on 2018-01-31.

The period of validity of this CEN/TS 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 CEN/TS can be converted into a European Standard.

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

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (CEN/TS 15119-1:2018) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and wood-based products”, the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 15119-1:2008.

CEN/TS 15119 is composed of the following parts:

- *Part 1: Wood held in the storage yard after treatment and wooden commodities exposed in Use Class 3 (not covered, not in contact with the ground) — Laboratory method*
- *Part 2: Wooden commodities exposed in Use Class 4 or 5 (in contact with the ground, fresh water or sea water) — Laboratory method*

This document is a revision of the Technical Specification published in 2008 in order to consider the OECD 107 (see Bibliography) which covers the same topic.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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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 laboratory method for the determination of emissions by leaching from preservative treated wood where the preservative treated wood is not covered and not in contact with the ground or the water. There are two situations in this case where such emissions could enter the environment:

- a) Emissions from preservative treated wood stored outside in the storage yard of a preservative treatment site. Rain falling on the treated wood could produce emissions that run off into surface water and / or soil;
- b) Emissions from treated wood used in commodities exposed in Use Class 3. This is the situation in which the wood or wood-based product is not covered and not in contact with the ground. It is either continually exposed to the weather or is protected from the weather but subject to frequent wetting. Use classes are defined in EN 335 and categorise the biological hazard to which the treated commodity will be subjected. The Use Classes also define the situation in which the treated commodity is used and determine the environmental compartments (air, water, soil) which are potentially at risk from the preservative treated wood. Rain falling on treated wood in Use Class 3 could produce emissions that run off into surface water and/ or soil.

The method is a laboratory procedure for obtaining water samples (leachate) from treated wood exposed out of ground contact, at time intervals after exposure. The quantities of emissions in the leachate are related to the surface area of the wood and the length of exposure, to estimate a flux in milligrams per square metre per day. The flux after increasing periods of exposure (e.g. 1 year, 10 years) can be estimated.

NOTE The leachate can also be tested for eco-toxicological effects.

The quantity of emissions can be used in an environmental risk assessment of the treated wood.

The test can be applied to wood treated using a penetrating process or superficial application (brush, spray or dipping), or to treated wood which has an additional surface treatment (e.g., paint that is applied as a requirement for commercial use).

1 Scope

This Technical Specification describes a laboratory method for obtaining water samples from preservative treated wood exposed out of ground contact (wood held in the storage yard after treatment and which has been in conditions designed to simulate outdoor, out of ground contact situations), at increasing time intervals after exposure.

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 General considerations

The principal agent for causing emissions from wood during open-air storage in the yard and in Use Class 3 is rainfall. Wood exposed in above ground situations is subjected to intermittent wetting by rainfall and drying of the wood surface between the rainfall events. These wetting and drying cycles are simulated by the method described in this document. It is assumed that emissions obtained by short-term immersion in water are indicative of the emissions which will occur during exposure to rainfall.

The wood, in the case of wood treated with a wood preservative, shall be representative of commercially treated wood. It shall be treated in accordance with the preservative manufacturer's instructions and in compliance with appropriate standards and specifications. The parameters for post-treatment conditioning of the wood prior to the commencement of the test shall be stated.

The wood samples used shall be representative of the commodities used.

The composition, amount, pH value and the physical form of rainfall are important in determining the quantity, content and nature of emissions from wood. However, simulating a realistic rainfall regime in the laboratory is time-consuming, expensive and is likely to lack reproducibility, accuracy, precision and reliability.

Two main immersion regimes are recommended as follows:

1. The 3 x 1 minute immersion regime: A 1 minute immersion in water of the treated test specimens to simulate exposure to a rainfall event. There are three immersions or rainfall events per day, with test specimens allowed to dry for 3 hours between immersions simulating the wetting and drying cycle of natural exposure situations. The days of rainfall are set for 1, 3, 5, 8, 10, 12, 15, 17 and 19 days.

NOTE 1 The OECD Emission Scenarios for Wood Preservatives 2013 (see bibliography) that are applied for the authorization procedure of the European BPR are based on the assumptions, that the total amount of rainfall per year is 700 mm. The daily regime is intended to produce the same moisture content on the surface of the wood, and the same moisture content profile in the wood, and thus the same emission, as wood in a real exposure situation on a day during which rain occurs. It is intended that a 3 x 1 minute dip, every third day, will give the same moisture content cycle in the wood, and the same emission from the wood, as exposure under real conditions. If the dipping and drying regime is continued for one year, the emission quantity and rate would be the same as the emission obtained from wood after exposure in a real situation in a region of Europe where there is 700 mm of rain per year, with rain events occurring on 260 days of the year.

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2. The 2 x 1 hour immersion regime: A 1 hour immersion in water of the treated test specimens to simulate exposure to a rainfall event. There are two immersions or rainfall events per day, with test specimens allowed to dry for 4 hours between immersions simulating the wetting and drying cycle of vertical natural exposure situations. The days of rainfall are set for 1, 3, 5, 8, 10, 12, 15, 17 and 19 days.

The applicant must provide adequate discussion of the conditions of these regimes (e.g., purpose is to estimate emissions from wood that is treated and then exposed vertically or horizontally) for data to be acceptable when using these regimes.

NOTE 2 The OECD 107 (see in Bibliography) proposes a third immersion regime (1 x 2 hours). It was decided not to retain this option in the European standard.

3.2 Principle

To simulate the emission of wood preservatives from wood exposed to rain water, a simulated wetting and drying process is employed. This process is used to simulate the wetting and drying of natural exposure situations. The water (leachate) from each immersion day is collected and analysed chemically. It is suitable for ecotoxicity testing. Emission rates in milligrams per square metre per day are calculated from analytical results.

A system with untreated wood specimens provides background levels for leachates from wood. Tests with untreated samples can be discontinued if there is no background detected in the first three data points.

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3.3 Quality criteria**3.3.1 Accuracy**

The performance of the analytical method should be determined before conducting the test:

- 1) Accuracy;
- 2) Specificity;
- 3) Limit of detection;
- 4) Limit of quantification.

The testing is carried out with untreated references and with controlled water.

NOTE EN ISO 5667-3 may give guidance on the preservation and handling of water samples.

3.3.2 Reproducibility

Two water samples are collected and analysed and the mean value is taken as the emission value. The reproducibility of the results within one laboratory and between different laboratories depends upon the immersion regime and the wood used as test specimens.

3.4 Product and reagent**3.4.1 Water**

Water complying with grade 3 of EN ISO 3696 or water especially designed for environmental investigations is ideal. Deionised water can also be used. The pH value shall normally be in the range 5 to 7. The pH value shall not be adjusted unless special conditions might justify setting the pH to a specified value between 5 and 7.

Water temperature shall be (20 ± 2) °C.

The pH value and water temperature shall be stated in the test report.

3.4.2 Preservative

The identity of the preservative product used to treat the wood samples 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) and substances of concern (as defined in the Biocidal Products Regulation No.528/2012) or a generic description of co-formulants and the composition of the product expressed in terms of the mass fraction of each of the ingredients.

3.5 Apparatus

3.5.1 Immersion container

The container shall be made of a material that is inert to water, treated wood and any substance that is to be determined (glass or plastic may be suitable), and large enough to allow the test specimens to have all their faces exposed to water and to contain sufficient water for the ratio of the exposed surface area of the test specimen to the volume of water to which it is exposed, to be 40 (i.e. 40 m² per 1m³ or 0,4 cm² per 1cm³). The volume of water required is therefore 25 l per m² of exposed surface area of the test specimen (this is equivalent to 2,5 cm³ per cm²). The container is covered to avoid any evaporation.

NOTE For example, for five wood test specimens 25 mm wide by 50 mm long, 15 mm thick, end sealed, where the surface area exposed to water is 200 cm², the volume of water required is 500 ml.

3.5.2 Assembly for test specimens

No equipment used to hold the test specimens below the level of the water shall be made of a material that will react with the water or the treated wood. The test samples should be restrained in a test frame which allows all 5 test specimens to be manoeuvred simultaneously and which allows free access of water to all surfaces.

3.5.3 Vessel for receiving water

Laboratory glass flask or plastic jars, inert to water, treated wood and any substance that is to be determined.

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.

3.5.4 Preservative treatment

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

3.5.5 Balance

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

3.5.6 Safety equipment and protection clothing

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