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

01-september-2008

Trajnost lesa in lesnih izdelkov - Določanje emisij iz zaščitenega lesa v okolje - 1. del: Sveže zaščiten les na skladišču ih 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

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 a base de bois - Estimation des émissions dans l'environnement du bois traité avec des produits de préservation - Partie 1 : Bois stocké en dépôt apres 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 15119-1:2008**

ICS:

13.020.30	Ocenjevanje vpliva na okolje	Environmental impact assessment
71.100.50	Kemikalije za zaščito lesa	Wood-protecting chemicals

SIST-TS CEN/TS 15119-1:2008 **en,fr,de**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 15119-1

May 2008

ICS 13.020.30; 71.100.50

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

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

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

This Technical Specification (CEN/TS) was approved by CEN on 20 November 2007 for provisional application.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. CEN/TS 15119-1:2008: E

Contents

Page

Foreword

This document (CEN/TS 15119-1: 2008) 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 [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, 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 the United Kingdom.

This document is derived from a Technical Report (CEN/TR 15119), submitted to OECD as a draft Test Guideline, following a request from OECD for the development of an OECD wide environmental exposure scenario document for wood preservatives in the framework of the EU Biocides Directive 98/8/EC.

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 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 335-1 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 (emissate) from treated wood exposed out of ground contact, at time intervals after exposure. The quantities of emissions in the emissate 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 emissate can also be tested for eco-toxicological effects.

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

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 Description of the test method

2.1 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. This method uses a 1 min immersion in water and has been developed to give the wood moisture content, which is relative to a rainfall event. There are three immersions per day and days of immersion are set at 1 days, 3 days, 5 days, 8 days, 10 days, 12 days, 15 days, 17 days and 19 days. This schedule allows sampling 3 times per week on Monday, Wednesday and Friday.

2.2 Principle

To simulate the emission of wood preservatives from wood exposed to rain water, a simulated wetting and drying process is employed. At each of the 9 "immersion days" stated in 2.1, the following process is applied : test specimens are immersed in water for 1 minute and then removed and allowed to dry; this cycle is repeated three times during an immersion day. This process is used to simulate the wetting and drying of natural exposure situations. The water (emissate) 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 emissates from wood. Tests with untreated samples can be discontinued if there is no background detected in the first three data points.

2.3 Product and reagent

2.3.1 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.

2.3.2 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 EU Directive 98/8/EC) 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.

2.4 Apparatus

2.4.1 Immersion container

The container shall be made of a material that is inert to water and the treated timber 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 m^2 per $1m^3$ or 0,4 $cm^2 \times 1cm^{-3}$). The volume of water required is therefore 25 l per m^2 of exposed surface area of the test specimen (this is equivalent to 2,5 cm^3 per cm^2).

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 cm^2, the volume of water required is 500 ml.

2.4.2 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 timber. 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.

2.5 Test specimens

2.5.1 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).

NOTE Additional tests may be made using other species but, if so, this should be stated in the test report.

2.5.2 Quality of wood and wood moisture content

Use straight grained wood without knots. Material of a resinous appearance shall be avoided.

NOTE The wood should be typical of wood that is commercially available.

The source, density and number of annual growth rings per 10 mm radius shall be stated in the test report.

2.5.3 Size of test specimens

Wood test specimens have minimum dimensions of 25 mm wide by 50 mm in length, 15 mm thick, with the longitudinal faces parallel to the grain of the wood. Test specimens shall consist of 100 % sapwood. Each test specimen is marked so that it can be identified throughout the test.

The wood test specimens shall be plain sawn and the surfaces shall not be sanded.

2.5.4 Number of test specimens

Two sets of treated test specimens in two immersion containers (2.4.1) are used and the mean value taken as the emission value. One set of untreated test specimens in one immersion container is also used. The number of wood test specimens depends on the specimen's size. The total surface of wood test specimens to be immersed in one immersion container is at least 200 cm^2, and the minimum number of test specimens per immersion container is three. For one test there is at least nine (three sets of three) test specimens: six test specimens are treated with preservative, three test specimens are untreated. Sufficient test specimens are prepared to allow the selection of specimens that are within ± 5 % of the mean value of the retentions of the group of test specimens, and one for the estimation of the oven dry moisture content of the test specimens before treatment.

NOTE For the minimum size of specimens given in 2.5.3., the number of specimens to obtain 200 cm^2 is 5; the total number of specimens needed is therefore 16: 10 treated and 5 untreated and 1 for the estimation of the oven dry moisture content.

2.5.5 End seal

The end seal shall be a substance which, when applied to the end-grain of test specimens, prevents penetration of the preservative under test.

NOTE Two coats of a silicone sealant have been found to be suitable.

2.6 Procedure

2.6.1 General

The test shall be carried out in a room which has a temperature of (20 ± 2) °C. The air humidity of the laboratory shall also be monitored.

2.6.2 Preparation of the treated test specimens

All wood test specimens are end sealed with a substance as described in 2.5.5, before treatment. In case of impregnation, it is recommended to apply sealant again after the conditioning period (2.6.3).

The test specimens to be treated with the preservative under test shall be weighed and then treated by the method specified by the supplier of the preservative. At the end of the treatment process the test specimens shall be reweighed so that uptakes can be determined.

2.6.3 Conditioning of the test specimens after treatment

After treatment, the treated test specimens shall be conditioned in accordance with any recommendations made by the supplier of the test preservative. A description of the conditioning procedure used shall be stated in the test report.

2.6.4 Preparation and selection of test specimens

The mean retention of the group of test specimens shall be calculated and at least six representative test specimens with a preservative retention within ± 5 % of the mean for the group shall be selected.

2.6.5 Immersion method

2.6.5.1 Preparation of apparatus

Prior to each test the immersion container (2.4.1) should be washed and dried and the required volume of water (2.3.1 and 2.4.1) should be placed in it.