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English Version

Durability of wood and wood-based products - Determination of emissions from preservative treated wood to the environment - Part 2: Wooden commodities exposed in Use Class 4 or 5 (in contact with the ground , fresh water or sea water) - 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 2 : Articles en bois exposés en classe d'emploi 4 ou 5 (en contact avec le sol, l'eau douce ou l'eau de mer) - Méthode de laboratoire

Dauerhaftigkeit von Holz und Holzprodukten - Abschätzung von Emissionen von mit Holzschutzmitteln behandeltem Holz an die Umwelt - Teil 2: Holzprodukte in Gebrauchsklasse 4 und 5 (im Kontakt mit Erde, Süßwasser oder Meerwasser) - Laborverfahren

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Foreword

This document (CEN/TS 15119-2: 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.

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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 to the environment need to be quantified to enable an environmental risk assessment of the treated wood. This document describes a laboratory method for the estimation of emissions from preservative treated wood in the case where the preservative treated wood is not covered and is in contact with the ground, fresh water or seawater. There are three situations in this case where emissions could enter the environment:

a) emissions from preservative treated wood in contact with the ground. Use Class 4A. Emissions from the surface of the treated wood could enter the soil via the soil water;

b) emissions from treated wood in contact with fresh water. Use Class 4B. Emissions from the surface of the treated wood could enter the water;

c) emissions from treated wood in contact with sea water. Use Class 5. Emissions from the surface of the treated wood could enter the sea.

The method is a laboratory procedure for obtaining water samples (emissate) from treated wood in contact with water, at increasing time intervals. 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 specifies a laboratory method for obtaining water samples from treated wood which has been in conditions designated to simulate continuous contact with the ground or with water (Use Class 4 or 5), at time intervals after exposure.

2 Description of the test method

2.1 General considerations

The principal agent for causing emissions from wood exposed to soil is the soil water. The mechanism of leaching at the wood surface by the soil water is assumed to be identical in nature and severity to leaching from a wood surface in continuous contact with water.

The mechanism of leaching at the wood surface by fresh water is assumed to be identical in nature and severity to leaching from a wood surface by seawater.

The wood, in the case of wood treated with a wood preservative, shall be representative of commercially used wood. It shall be treated in accordance with the preservative manufacturer's instructions and in compliance with appropriate standards and specifications. The parameters for the 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 and pH value of the water used in the test are important in determining the quantity, content and nature of emissions from wood.

Water samples will be taken at a minimum interval of one day and a maximum interval of 7 days, on a sampling scheme covering at least 19 days.

2.2 Principle

Water samples are collected after continuous contact with treated wood at increasing time intervals. To simulate the emission of wood preservatives from wood that is exposed to continuous contact with water test specimens are immersed in water and samples of the water are collected at different intervals. The volume of water relative to the surface area exposed to the water is equivalent to the ratio found in wood exposed in service in some Use Class 4 situations (1 m^3 per 40 m^2 or 25 l per m^2). The water (emissate) is collected and is chemically analysed at seven or more sample times over the 19 days; it is suitable for ecotoxicity testing. Emission rates in milligrams per square metre per day are calculated from analytical results. The sampling periods are recorded. 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.