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BSI Standards Publication

Construction products: Assessment of release of dangerous substances - Content of organic substances - Methods for extraction and analysis

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National foreword

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Construction products: Assessment of release of dangerous substances - Content of organic substances - Methods for extraction and analysis

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Bauprodukte: Bewertung der Freisetzung von gefährlichen Stoffen - Gehalt an organischen Stoffen - Extraktions- und Analyseverfahren

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European foreword

This document (CEN/TS 17331:2019) has been prepared by Technical Committee CEN/TC 351 "Construction products: Assessment of release of dangerous substances", the secretariat of which is held by NEN.

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Introduction

This Technical Specification deals with the determination of the content of organic substances in construction products.

Following an extended evaluation of available methods for content and eluate analysis in construction products (CEN/TR 16045) it was concluded that existing methods for determining content of various organic substances in soil, sludge and waste are applicable to construction products. The present document therefore contains reference to such other standards for the substances of interest.

This Technical Specification is part of a modular horizontal approach and belongs to the analytical step. An overview of all modules which belong to a chain of measurement, and the manner how modules are selected is given in CEN/TR 16220 [1].

In the growing amount of product and sector oriented test methods it was recognized that many steps in test procedures are or could be used in test procedures for many products, materials and sectors. It was supposed that, by careful determination of these steps and selection of specific questions within these steps, elements of the test procedure could be described in a way that can be used for all materials and products or for all materials and products with certain specifications.

In this context a horizontal modular approach was adopted in CEN/TC 351. "Horizontal" means that the methods can be used for a wide range of materials and products with certain properties. "Modular" means that a test standard developed in this approach concerns a specific step in assessing a property and not the whole "chain of measurement" (from sampling to analysis). A beneficial feature of this approach is that "modules" can be replaced by better ones without jeopardizing the standard "chain".

The use of modular horizontal standards implies the drawing of test schemes as well. Before executing a test on a certain material or product to determine certain characteristics it is necessary to draw up a protocol in which the adequate modules are selected and together form the basis for the entire test procedure.

Further guidance on the applicability of specific test methods can be found in CEN/TR 16496 [2].

NOTE In Annex B, several methods are mentioned which are, to the current knowledge of CEN/TC 351/WG 5 members, national standards or in the process of standardization (at European or national level). Please inform the CEN/TC 351 secretariat if you know of other such standardization activities.

1 Scope

This document specifies existing methods for the determination of the content of specific organic substances in construction products.

The following parameters are covered: BTEX, biocides, dioxins, furans and dioxin-like PCBs, mineral oil, nonylphenols, PAH, PCB, PCP, PBDE, and short-chain chlorinated paraffins.

NOTE 1 Methods still under development or available at national level only are listed in Annex B for PFOS, PFOA, HBCD and EOX. The methods can be included in the normative text as soon as full EN standards are available.

NOTE 2 Methods that have not been validated for construction products, because no suitable material was available at the time of the robustness validation, only are listed in Annex B. This applies to organotin compounds, phenols and phthalates.

The methods listed in this document come from different fields and are expected to be suitable for organic substances in organic extracts from all types of constructions products.

The methods in this document are validated for the product types listed in Annex A.

NOTE 3 Construction products include, e.g. mineral-based products, bituminous products, wood-based products, polymer-based products and metals. This document includes analytical methods for all matrices except metals.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14039, *Characterization of waste — Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography*

CEN/TR 14823, *Durability of wood and wood-based products — Quantitative determination of pentachlorophenol in wood — Gas chromatographic method*

EN 15637, *Foods of plant origin — Determination of pesticide residues using LC-MS/MS following methanol extraction and clean-up using diatomaceous earth*

CEN/TR 16045:2010, *Construction Products — Assessment of release of dangerous substances — Content of regulated dangerous substances — Selection of analytical methods*

EN 16167, *Sludge, treated biowaste and soil — Determination of polychlorinated biphenyls (PCB) by gas chromatography with mass selective detection (GC-MS) and gas chromatography with electron-capture detection (GC-ECD)*

EN 16181, *Soil, treated biowaste and sludge — Determination of polycyclic aromatic hydrocarbons (PAH) by gas chromatography (GC) and high performance liquid chromatography (HPLC)*

CEN/TS 16182, *Sludge treated biowaste and soil — Determination of nonylphenols (NP) and nonylphenol-monoethoxylates and diethoxylates using gas chromatography with mass selective detection (GC-MS)*

EN 16190, *Soil, treated biowaste and sludge — Determination of dioxins and furans and dioxin-like polychlorinated biphenyls by gas chromatography with high resolution mass selective detection (HR GC-MS)*

EN 16687:2015, *Construction products — Assessment of release of dangerous substances — Terminology*

EN 17087, *Construction products: Assessment of release of dangerous substances — Preparation of test portions from the laboratory sample for testing of release and analysis of content*