SLOVENSKI STANDARD
SIST EN 16516:2018/oprA1:2019

01-junij-2019

Gradbeni proizvodi - Ocenjevanje sproščanja nevarnih snovi - Določevanje emisije v notranji zrak

Construction products - Assessment of release of dangerous substances - Determination of emissions of into indoor air

Bauprodukte - Bewertung der Freisetzung gefährlichen Stoffen - Bestimmung der Emissionen in die Innenraumluft

Produits de construction - Évaluation de l'émission de substances dangereuses - Détermination des émissions dans l'air intérieur

Ta slovenski standard je istoveten z: **EN 16516:2017/prA1**

ICS:

13.040.20	Kakovost okoljskega zraka	Ambient atmospheres
91.100.01	Gradbeni materiali na splošno	Construction materials in general

SIST EN 16516:2018/oprA1:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT EN 16516:2017 prA1

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ICS 13.040.20; 91.100.01

English Version

Construction products: Assessment of release of dangerous substances - Determination of emissions of into indoor air

Produits de construction: Évaluation de l'émission de substances dangereuses - Détermination des émissions dans l'air intérieur

Bauprodukte: Bewertung der Freisetzung gefährlichen Stoffen - Bestimmung der Emissionen in die Innenraumluft

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 351.

This draft amendment A1, if approved, will modify the European Standard EN 16516:2017. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 16516:2017/prA1:2019 E

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European foreword

This document (EN 16516:2017/prA1:2019) 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.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

1 Modification to the European foreword

After the fifth paragraph, add the following sentences:

"This amendment is a complement to EN 16516. It concerns the measurement of ammonia emissions from construction products.".

2 Modification to Clause 1, "Scope"

Replace the first paragraph by:

"This document specifies a horizontal reference method for the determination of emissions of regulated dangerous substances from construction products into indoor air. This method is applicable to volatile organic compounds, semi-volatile organic compounds, very volatile aldehydes and ammonia. It is based on the use of a test chamber and subsequent analysis of the organic compounds by GC-MS, HPLC, and for ammonia, subsequent analysis by spectrophotometric methods or any equivalent analytical methods (such as ion chromatography and ammonium specific electrode).".

3 Modification to Clause 2, "Normative references"

Add the following document to the list of references:

"ISO 7150-1, *Water quality - Determination of ammonium - Part 1: Manual spectrometric method*".

4 Modification to 10.5, "Determination of vapour-phase organic compounds in test chamber air"

Add "and ammonia" to the title, to read as follows:

"**10.5 Determination of vapour-phase organic compounds and ammonia in test chamber air**".

5 Modification to 10.6, "Calculation and reporting of test results"

After line 10), add a new line

"11) ammonia concentration.".

6 Addition of new Annex I (normative), "Determination of ammonia in test chamber air"

Add the following new Annex I:

"

Annex I
(normative)

Determination of ammonia in test chamber air

I.1 Sampling

Sample the chamber air using impingers containing diluted sulphuric acid (0,05 M). Prepare the sampling solution by mixing 1 l of deionized and purified water with 2,72 ml sulphuric acid (minimum purity 95 % to 97 %). A recommended value is 10 ml of solution per 100 l sampling volume depending on the desired detection limit. Prior to air sampling, make sure that the impinger is at approximately the same temperature as the chamber air to prevent risk of water condensation. An appropriate air sampling flow rate is in the range of 0,2 l/min to 1 l/min. Air samples shall be collected in duplicate simultaneously (or immediately sequentially).

It is recommended to use two impingers in series in case of very high concentrations and overloading of the first impinger. After sampling an amount of 10 ml of the sampling solution is neutralized in a beaker with sodium hydroxide (1 M, 0,5 M, 0,1 M or 0,05 M) to a pH value between 6 and 8. The result shall be corrected for the added amount of sodium hydroxide by using a correction factor (mass of neutralized sample divided by mass of original sample).

Alternatively, sampling can be done on tubes filled with silica gel coated with sulfuric acid. Each tube consists of a front zone with 200 mg coated silica and a control zone of 100 mg coated silica. Such tubes are commercially available.

Prior to air sampling, make sure that the tube is at approximately the same temperature as the chamber air to prevent risk of water condensation inside the sample tube.

An appropriate air sampling flow rate is in the range of 0,2 l/min to 0,4 l/min. Air samples shall be collected in duplicate simultaneously (or immediately sequentially). After sampling take the silica gel out of the sampling tubes and extract with deionized and purified water. The front zone and control zone of the sampling tube are analysed separately for determining overloaded sampling tubes.

Perform a blank test to determine the background concentration of the chamber before each test.

The concentration level in the control zone must be no greater than 10 % of the front zone concentration.

I.2 Analysis

I.2.1 Spectrophotometric analysis

Analysis of the prepared liquid samples for ammonia shall be carried out according to ISO 7150-1. The results are expressed in mg/m³ or µg/m³ by dividing the absolute amount of detected ammonia by the air sampling volume and subtraction of the background concentration.

I.2.2 Equivalent analytical methods

An alternative method can be applied if it provides a result that is proven to be equivalent to that given by the above mentioned test method.

NOTE In the “Report for validation testing methods as supplement to EN 16516" developed by CEN/TC 351/WG 2 [42], the test methods as in [43] and [44] have been demonstrated as equivalent.

I.2.3 Test chamber conditions

The test chamber conditions shall be used as defined in subclause 7.7 with a relative humidity of (50 ± 5) % and a temperature of (23 ± 1) °C.

NOTE There is no significant influence of the relative humidity to ammonia emissions in this range.

I.3 Test report

The ammonia concentration in the reference room shall be reported according to the rules given in Clause 10.".

7 Modicifications to the Bibliography

Add after [41], the following references:

[42] NEUHAUS T. et al. *Report for validation of ammonia testing methods as supplement to EN 16516 developed by CEN/TC 351/WG 2*, 2017; available from www.centc351.org

[43] ADLER R.G. *Ammonia in Workplace Atmospheres – Solid Sorbent, OSHA-SLTC Method No. ID-188, Occupational Safety and Health Administration Technical Center*. Revised, Salt Lake City, UT, 1991