Irish Standard
I.S. EN ISO 12460-3:2015

Wood-based panels - Determination of formaldehyde release - Part 3: Gas analysis method (ISO 12460-3:2015)

I.S. EN ISO 12460-3:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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National Foreword

I.S. EN ISO 12460-3:2015 is the adopted Irish version of the European Document EN ISO 12460-3:2015, Wood-based panels - Determination of formaldehyde release - Part 3: Gas analysis method (ISO 12460-3:2015)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 12460-3

November 2015

ICS 79.060.01

Supersedes EN 717-2:1994

English Version

Wood-based panels - Determination of formaldehyde release - Part 3: Gas analysis method (ISO 12460-3:2015)

Panneaux à base de bois - Détermination du dégagement de formaldéhyde - Partie 3: Méthode d'analyse de gaz (ISO 12460-3:2015)

Holzwerkstoffe - Bestimmung der Formaldehydabgabe - Teil 3: Gasanalyse-Verfahren (ISO 12460-3:2015)

This European Standard was approved by CEN on 29 August 2015.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 12460-3:2015) has been prepared by Technical Committee ISO/TC 89 “Wood-based panels” in collaboration with Technical Committee CEN/TC 112 “Wood-based panels” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 12460-3:2015 has been approved by CEN as EN ISO 12460-3:2015 without any modification.

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I.S. EN ISO 12460-3:2015

INTERNATIONAL STANDARD

ISO 12460-3

Second edition
2015-11-01

Wood-based panels — Determination of formaldehyde release —

Part 3: Gas analysis method

Panneaux à base de bois — Détermination du dégagement de formaldéhyde —

Partie 3: Méthode d'analyse de gaz

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 89, *Wood-based panels*.

This second edition cancels and replaces the first edition (ISO 12460-3:2008), which has been technically revised.

The objective of the revision was to improve the detection limit and the reproducibility of the method with regard to boards with low formaldehyde content.

Compared to ISO 12460-3:2008, the following modifications have been made:

a) in 6.1 preparation of test pieces is described more in detail;

b) in 6.2 recommendation of maximum time 72 h after sampling for formaldehyde determination is added;

c) in 6.4 conditioning for sampling and testing in case of dispute is added;

d) in 7.1 and 8.2.2 procedure and evaluation of third determination are modified;

e) in 7.3 use of smaller gas wash bottles and volumetric flasks to improve the sensitivity is included as an option;

f) in 7.4.3 the use of a mixed reagent is included as an option to reduce the amounts of aqueous solution and hence improve the sensitivity;

g) in 7.4.3 temperature of water bath increased to 60 °C and cooling procedure is modified;

h) in 7.4.4.1 minimum interval of check of the calibration curve is extended to once a month;

i) in Clause 9 age and treatment of the sample are included in the test report;

j) in Figure 2 calibration curve is modified.

ISO 12460 consists of the following parts, under the general title *Wood-based panels — Determination of formaldehyde release*:

— *Part 1: Formaldehyde emission by the 1-cubic-metre chamber method*

— *Part 3: Gas analysis method*

— *Part 4: Desiccator method*

— *Part 5: Extraction method (called the perforator method)*

Additional parts dealing with small-scale chamber method is planned.

Wood-based panels — Determination of formaldehyde release —

Part 3: Gas analysis method

1 Scope

This part of ISO 12460 specifies a procedure for determination of accelerated formaldehyde release from uncoated and coated wood-based panels using the gas analysis method. The procedure is also suitable for the testing of other materials (e.g. edge bands, floor coverings, foams, foils, laminated wood products, veneered wood products, coated wood products).

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.

ISO 16979, *Wood-based panels — Determination of moisture content*

ISO 16999, *Wood-based panels — Sampling and cutting of test pieces*

3 Principle

A test piece of known surface area is placed in a closed chamber in which the temperature, humidity, airflow, and pressure are controlled to defined values. Formaldehyde released from the test pieces mixes with the air in the chamber. This air is continually drawn from the chamber and passes through gas wash bottles, containing water, which absorbs the released formaldehyde. At the end of the test, the formaldehyde concentration is determined photometrically or fluorimetrically. The formaldehyde release is calculated from this concentration, the sampling time, and the exposed area of the test pieces and is expressed in milligrams per square meter and hour (mg/m^2h).

4 Reagents

Reagents of recognized analytical purity and distilled or demineralised water (referred throughout the following text as distilled water) shall be used for the analysis.

4.1 4 ml Acetylacetone solution are added to a 1 000 ml volumetric flask and made up to the mark with distilled water.

4.2 200 g ammonium acetate solution are dissolved with distilled water in a 1 000 ml volumetric flask and made up to the mark.

Optionally, a premixed reagent of acetylacetone and ammonium acetate as described in ISO 12460-4 can be used.

4.3 Formaldehyde solution commercially available (concentration typically between 35 % mass fraction to 40 % mass fraction).