

<b>STN</b>	<b>Dosky na báze dreva. Stanovenie uvoľňovania formaldehydu. Časť 3: Metóda analýzy plynov (ISO 12460-3: 2015).</b>	<b>STN EN ISO 12460-3</b>  49 2657
------------	---	--

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

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/16

Obsahuje: EN ISO 12460-3:2015, ISO 12460-3:2015

Oznámením tejto normy sa ruší  
STN EN 717-2 (49 2517) z novembra 1998

**122672**

EUROPEAN STANDARD

**EN ISO 12460-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of 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 United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## 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.

This document supersedes EN 717-2:1994.

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.

---

---

**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*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Principle</b> .....	<b>1</b>
<b>4 Reagents</b> .....	<b>1</b>
<b>5 Apparatus</b> .....	<b>2</b>
5.1 Main composites of test apparatus (see <a href="#">Figure 1</a> ).....	2
5.2 Laboratory equipment.....	2
<b>6 Sampling and preparation of test pieces</b> .....	<b>3</b>
6.1 Preparation of test pieces.....	3
6.2 Selection of test pieces for factory production control.....	3
6.3 Selection of test pieces for other purposes.....	4
6.4 Selection of test pieces in case of dispute.....	4
<b>7 Procedure</b> .....	<b>4</b>
7.1 Number of determinations.....	4
7.2 Determination of moisture content.....	4
7.3 Determination of formaldehyde release.....	4
7.4 Determination of formaldehyde content of the aqueous solutions.....	5
7.4.1 General.....	5
7.4.2 Principle.....	5
7.4.3 Analytical Procedure.....	5
7.4.4 Calibration curve.....	5
<b>8 Expression of results</b> .....	<b>7</b>
8.1 Gas analysis value.....	7
8.2 Calculation of results.....	7
8.2.1 Calculation of results of test pieces.....	7
8.2.2 Calculation of emission report value.....	8
8.3 Moisture content.....	8
<b>9 Test report</b> .....	<b>8</b>
<b>Bibliography</b> .....	<b>11</b>

## 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**