

BS EN ISO 15234:2010



BSI Standards Publication

Paints and varnishes — Testing of formaldehyde-emitting coatings and melamine foams — Determination of the steady-state concentration of formaldehyde in a small test chamber (ISO 15234:1999)

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National foreword

This British Standard is the UK implementation of EN ISO 15234:2010. It is identical to ISO 15234:1999.

The UK participation in its preparation was entrusted to Technical Committee STI/3, Paints, media and related products.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments issued since publication

Date	Text affected
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English Version

Paints and varnishes - Testing of formaldehyde-emitting
coatings and melamine foams - Determination of the steady-
state concentration of formaldehyde in a small test chamber
(ISO 15234:1999)

Peintures et vernis - Essais des revêtements et mousses
mélamines qui émettent du formaldéhyde - Détermination
de la concentration à l'équilibre du formaldéhyde dans une
petite chambre d'essai (ISO 15234:1999)

Beschichtungsstoffe - Prüfung von Formaldehyd
emittierenden Beschichtungen und Melaminschaumstoffen
- Bestimmung der Ausgleichskonzentration an
Formaldehyd in einem kleinen Prüfraum (ISO 15234:1999)

This European Standard was approved by CEN on 16 October 2010.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

The text of ISO 15234:1999 has been prepared by Technical Committee ISO/TC 35 “Paints and varnishes” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15234:2010 by Technical Committee CEN/TC 139 “Paints and varnishes” 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of an identical text or by endorsement, at the latest by May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

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Endorsement notice

The text of ISO 15234:1999 has been approved by CEN as a EN ISO 15234:2010 without any modification.

Paints and varnishes — Testing of formaldehyde-emitting coatings and melamine foams — Determination of the steady-state concentration of formaldehyde in a small test chamber

1 Scope

This International Standard specifies a test method for determining the equilibrium concentration of formaldehyde from formaldehyde-emitting coatings and melamine foams in a small test chamber.

It describes the determination of the equilibrium concentration of formaldehyde that is established in air at 23 °C and 50 % relative humidity. The test closely simulates practical conditions and can be performed on a laboratory scale. Good correlation is obtained with values obtained on samples of the same material in a 40 m³ test chamber. The method, which is simple to perform, is therefore suitable for the preliminary determination of limits that have to be adhered to.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3270:1984, *Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test method*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 equilibrium concentration

c_{eq}

the concentration of formaldehyde in the air in the test chamber that is reached when several successive values of the concentration determined at one-hour intervals differ by less than 0,02 mg/m³

3.2 air-replacement rate

n

the number of air changes per hour in the test chamber, given by

$$n = \frac{V_t}{t \times V}$$

where

V_t is the volume, in cubic metres, of air passed through the test chamber during the test;

t is the duration, in hours, of the test;

V is the volume, in cubic metres, of the test chamber

3.3 relative specimen area

a

the area of formaldehyde-emitting surface per unit volume of the test chamber, given, in square metres per cubic metre (i.e. m^{-1}), by

$$a = \frac{A}{V}$$

where

A is the area of the specimen, in square metres (see annexes A and B);

V is the volume, in cubic metres, of the test chamber

3.4 steady-state ratio

n/a

the ratio of the air-replacement rate n to the relative specimen area a , given, in metres per hour, by

$$n/a = \frac{V_t}{t \times A}$$

where

V_t is the volume, in cubic metres, of air passed through the test chamber during the test;

t is the duration, in hours, of the test;

A is the area, in square metres, of the specimen

3.5 formaldehyde concentration

c

the concentration, in milligrams per cubic metre, of formaldehyde at a given steady-state ratio n/a over the period of time concerned, given by

$$c = \frac{m}{V_t}$$

where

m is the mass, in milligrams, of formaldehyde;

V_t is the volume, in cubic metres, of air passed through the test chamber during the test

NOTE The value determined for c can be converted into ppm by dividing by the density of formaldehyde, i.e. by 1,22 g/l at a temperature of 23 °C and an atmospheric pressure of 101,3 kPa.