SLOVENSKI STANDARD
SIST EN 1084:1996

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Vezan les - Razredi sproščenega formaldehida, določenega po plinski metodi

Plywood - Formaldehyde release classes determined by the gas analysis method

Sperrholz - Formaldehydabgabe-Klassen nach der Gasanalyse-Methode

Contreplaqué - Classes d'émission de formaldéhyde déterminée par la méthode d'analyse de gaz

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English version

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Contreplaqué - Classes d'émission de formaldéhyde déterminées par la méthode d'analyse de gaz

Sperrholz - Formaldehydabgabe-Klassen nach der Gasanalyse-Methode

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Contents

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 112 "Wood-based panels", of which the secretariat 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of an identical text or by endorsement, at the latest by December 1995, and conflicting national standards shall be withdrawn at the latest by December 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard defines formaldehyde release classes for plywood, determined by the gas analysis method (see EN 717-2).

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 326-1 Wood-based panels — Sampling, cutting and inspection — Part 1: Sampling and cutting of test pieces and expression of test results

EN 717-2 Wood-based panels — Determination of formaldehyde release — Part 2: Formaldehyde release by the gas analysis method

3 Formaldehyde release classes

The formaldehyde release classes for plywood are determined from the results obtained using the analytical procedures described in EN 717-2 and are defined in table 1.

The characteristic gas analysis value shall be a 95 percentile value.

Table 1: Formaldehyde release classes for plywood

Release class	Gas analysis value determined after conditioning of test pieces for 4 weeks at (20 ± 2) °C and (65 ± 5) % relative humidity mg HCHO/m² h
A	≤ 3,5
B	≤ 8
C	> 8

NOTE 1: Certain types of plywood are known to release little or no formaldehyde.

NOTE 2: Other test methods may be used if the correlation with EN 717-2 has been proved.

4 Sampling and testing

4.1 Sampling for internal and external control

Sampling and cutting shall be according to EN 326-1 and EN 717-2.

4.2 Sampling for other purposes

As described in EN 717-2.

4.3 Preparation of test pieces

According to EN 717-2 the test pieces shall be suitably edge sealed. But if it is necessary to condition the test pieces, the edge sealing shall be done after conditioning.

NOTE: Three coats of polyurethane lacquer or self-adhesive aluminium tape have proved to be suitable.

4.4 Conditioning of test pieces

4.4.1 Internal control

For internal control by gas analysis, a test may be carried out within 3 days of production. A value of ≤ 6 (release class A) or ≤ 12 (release class B) gives an indication that the plywood will probably conform to the values given in table 1 after conditioning for 4 weeks. The manufacturer has to ensure this correlation.

4.4.2 External control

The test pieces shall be conditioned for 4 weeks at (20 ± 2) °C and (65 ± 5) % relative humidity before testing.

4.5 Testing

4.5.1 Determination of gas analysis values

Determine the gas analysis value according to EN 717-2.

For plywood determinations shall always be made in duplicate, using two different test pieces from each panel. If the individual values of a duplicate determination differ from each other by more than 0,5 mg/m²h, then a third determination shall be made.

4.5.2 Determination of panel lay-up

The wood species and thickness of outer plies and the panel lay-up shall be determined, by using, if possible, the same test pieces.

5 Determination of formaldehyde release class

The panels are classified by comparing the gas-analysis value obtained with the release classes in table 1.

6 Test report

As described in EN 326-1 together with the following information:

- the formaldehyde release class, A, B or C;
- the reference to this European Standard.

Annex A (informative)

Bibliography

prEN 326-2 Wood-based panels — Sampling, cutting and inspection — Part 2: Quality control in the factory

prEN 326-3 Wood-based panels — Sampling, cutting and inspection — Part 3: Inspection of a consignment of panels

prEN 636-1 Plywood - Specifications — Part 1: Plywood for use in dry conditions

prEN 636-2 Plywood — Specifications — Part 2: Plywood for use in humid conditions

prEN 636-3 Plywood — Specifications — Part 3: Plywood for use in exterior conditions

Annex B (informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

Austria:

In Austria, the law (Formaldehyde ordinance, Federal Nr. 194/1990) requires that the formaldehyde concentration of wood-based material is limited to 0,1 ml/m^3 (ppm-equilibrum concentration of the formaldehyde in the air of testroom).

The limit value is based on the following data of the test chamber:

Volume of the chamber: 40 m^3 ± 10 %

Air-humidity: 45 % ± 3 %

Temperature: 23 °C ± 0,5 °C

Air exchange rate: 1/h

Loading rate: 1 m^2 board surface area/1 m^3 test chamber volume

Denmark:

Deviating national regulations: Danish Building Regulations BR 1982 and BR 1985.

Germany:

In Germany, the permissible formaldehyde release of plywood is stipulated in "Chemikalien-Verbotsverordnung — ChemVerbotsV —" (Ordinance on the prohibition of chemicals), Annex to § 1, clause 3 of 14 October 1993 (formerly GefstoffV § 9 [3]).

The corresponding test method has been published by the "Bundesgesundheitsamt" (Federal board of health) according to agreement with the "Bundesanstalt für Materialforschung und -prüfung" (Federal institution for material research and testing) (Bundesgesundheitsblatt 10/91). As a consequence, the following deviations and amendment are necessary to table 1 in this European Standard:

Formaldehyde release class A:

Mean value: ≤ 2,5 mg HCHO/h m^2

Single value: ≤ 3,5 mg HCHO/h m^2

The mean value is defined as the rolling half-year average. The single value is defined as the 95 percentile value. No value shall exceed an upper tolerance limit of + 10 % above the 95 percentile value.

Formaldehyde release classes B and C are not permitted in Germany.

NOTE: For internal control of plywood of class A by gas analysis a test may be carried out within 3 days of production. In these cases the mean value is limited to ≤ 5,0 mg HCHO/m^2 h and the single value to ≤ 6,0 mg HCHO/m^2 h.

Sweden:

Deviating national regulation: **The National Chemicals Inspectorate's regulation (KIFS 1989:5) on formaldehyde in wood based boards (amended by KIFS 1993 : 3).**

Scope

Section 1

These regulations apply to wood-based boards (particle boards, plywood, wood-fibre boards, block boards and similar boards) containing additives based on formaldehyde.

These regulations shall not apply to phenol-glued boards, where the added formaldehyde occurs only as a co-polymer with phenol (KIFS 1993 : 3).

Quality assurance for production

Section 2

Anyone who manufactures wood-based boards must ensure that the raw boards do not give off more formaldehyde than:

1. 0,13 mg/m^3 of air when tested according to Swedish Standard SS 270236, issue No 1, 1 January 1988, or

2. which can definitely be ensured not to exceed this emission limit value in an equivalent harmonized standard for emission testing on wood-based boards.

For this purpose, a manufacturer must either have a quality assurance system which is approved by a certification body and which at least fulfils the requirements of ISO 9003, or use a quality system and let a certification body certify that the boards fulfil the requirements of the first paragraph (KIFS 1993 :3)

Quality assurance for import

Section 3

An importer of wood-based boards must either be able to show that the manufacture of his boards fulfils the requirements in Section 2, or he must have a quality assurance system which is approved by a certification body and which at least fulfils the requirements of ISO 9003 and which assures that the boards fulfil the requirements in Section 2, first paragraph (KIFS 1993 : 3).

Other quality assurance

Section 4

Anyone who, in the course of business activities, offers wood-based boards for sale, must ensure that the boards fulfil the requirements in these regulations and, on request, give evidence of this. (KIFS 1993 : 3).