SLOVENSKI STANDARD
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Razvrstitev duromernih lepil za les za nekonstrukcijsko uporabo

Classification of thermosetting wood adhesives for non-structural applications

Klassifizierung von duroplastischen Holzklebstoffen für nichttragende Anwendungen

Classification des colles a bois a résine thermodurcissable a usages non structuraux

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Classification of thermosetting wood adhesives for non-structural applications

Classification des colles à bois à résine thermodurcissable à usages non structuraux

Klassifizierung von duroplastischen Holzklebstoffen für nichttragende Anwendungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 193 "Adhesives", the secretariat of which is held by AENOR.

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of an identical text or by endorsement, at the latest by November 2001, and conflicting national standards shall be withdrawn at the latest by November 2001.

This standard includes a Bibliography.

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

Introduction

European Standards giving a common classification with respect to durability classes for wood adhesives will allow considerable improvement in consumer protection in any future product liability system with regard to properties guaranteed by the adhesive manufacturer.

1 Scope

This European Standard classifies thermosetting resin based wood adhesives for non-structural applications into durability classes C1 to C4 based on the dry and wet strengths of bond-lines measured under specified conditions after various conditioning treatments.

For special applications, further tests, which do not fall within the scope of this standard, could be applicable.

The adhesives described in this standard are suitable for the bonding of furniture and interior structures, panelling, doors, windows, stairs etc made of wood or derived timber products.

NOTE Thermosetting resin is defined in EN 923 as: monomer, polymer or copolymer, which when cured, changes into a substantially infusible and insoluble product.

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 (including amendments).

EN 205 Test methods for wood adhesives for non-structural applications — Determination of tensile shear strength of lap joints

EN 923 Adhesives — Terms and definitions.

3 Terms and definitions

For the purposes of this European standard the terms and definitions given in EN 923 and the following terms and definitions apply.

3.1
thermosetting wood adhesive
adhesive whose main constituent is a thermosetting resin and which has been formulated for bonding wood

4 Classification

An adhesive shall be classified in accordance with Table 1, which gives examples of climatic conditions and fields of application in which the bonded member is to be used. The classification shall be based on tests on thin bond-lines except when gap-filling properties are claimed, in which case it shall be based on tests using both thin and thick bond-lines as defined in EN 205.

Table 1 — Description of durability classes

Durability classes	**Examples of climatic conditions and fields of application**
C1	Interior, in which the moisture content of the wood does not exceed 15 %.
C2	Interior with occasional short-term exposure to running or condensed water and/or to occasional high humidity provided the moisture content of the wood does not exceed 18 %.
C3	Interior with frequent short-term exposure to running or condensed water and/or to heavy exposure to high humidity. Exterior not exposed to weather.
C4	Interior with frequent long-term exposure to running or condensed water. Exterior exposed to weather but with protection by an adequate surface coating.

5 Test method

The adhesive shall be tested in accordance with EN 205 and as follows:

a) either thin, or both thin and thick bond-lines shall be tested as appropriate (see clause 4);

b) the tests shall be performed using the appropriate conditioning sequence given in Table 2;

c) the individual values and the mean value for 10 valid test pieces for each conditioning sequence test shall be recorded.

The standard atmosphere used as a control climate is either (20±2)°C and (65±5)% relative humidity (rh), (20/65), or (23±2)°C and (50±5)% relative humidity (rh) (23/50).

6 Requirements

When tested in accordance with EN 205, the mean strength of an adhesive shall:

a) for thin bond-lines conform to the values shown in Table 2;

b) for thick bond-lines, when required, be not lower than 80 % of the values shown in Table 2;

NOTE The values given in Table 2 are comparative values and should not be used as a basis for calculation, e.g. of design data. They are not comparable with values obtained using test pieces of other dimensions.

Table 2— Minimum values of adhesive strength for thin bond lines

Conditioning sequences		**Adhesive strength in N/mm^2** **Durability classes**			
Serial number	**Duration and condition**	C1[3]	C2[3]	C3[3]	C4[3]
1	7days[1] in standard atmosphere[2]	≥10	≥10	≥10	≥10
2	7 days in standard atmosphere 1 day in water at (20±5)°C	-	≥7	≥7	≥7
3	7 days in standard atmosphere 3 h in water at (67±2)°C 2 h in water at (20±5)°C	-	-	≥4	-
4	7 days in standard atmosphere 3 h in boiling water 2 h in water at (20±5)°C	-	-	-	≥4

NOTE 1 A longer conditioning time between gluing and testing might be necessary as advised by the glue manufacturer.

NOTE 2 The number used in the designation does not indicate ranking order. A given adhesive can be assigned to more than one durability class.

[1] 1 day = 24 hours

[2] (20±2)°C and (65±5)% relative humidity or (23±2)°C and (50±5)% relative humidity

- = No test required

[3] All minimum values indicated in the columns of durability classes C1 to C4 shall be reached as mean values for the classification of an adhesive (for example for C4 the conditioning sequences are 1, 2 and 4).