SLOVENSKI STANDARD
SIST EN 14220:2007

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Les in lesni materiali za zunanja okna, zunanja vrata in zunanje okvirje vrat - Zahteve in specifikacije

Timber and wood-based materials in external windows, external door leaves and external doorframes - Requirements and specifications

Holz und Holzwerkstoffe in Außenfenstern, Außentüren und Außentürzargen - Anforderungen und Spezifikationen

Bois et matériaux a base de bois dans les fenetres extérieures, les vantaux de portes extérieures et les dormants de portes extérieures - Exigences et spécifications

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English Version

Timber and wood-based materials in external windows, external door leaves and external doorframes - Requirements and specifications

Bois et matériaux à base de bois dans les fenêtres extérieures, les vantaux de portes extérieures et les dormants de portes extérieures - Exigences et spécifications

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This European Standard was approved by CEN on 11 September 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 14220:2006) has been prepared by Technical Committee CEN/TC 175 “Round and sawn timber”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by October 2007.

This Standard is one of a package to be implemented by 2007.10.31. The Standards included in the Package are:

	Standard Number	Title
1	prEN 942 Revised	Timber in joinery - General requirements
2	EN 13307-1	Timber blanks and semi-finished profiles for non-structural uses – Part 1: Requirements
3	EN 14220	Timber and wood-based materials in external windows, external door leaves and external doorframes – Requirements and specifications
4	EN 14221	Timber and wood-based materials in internal windows, internal door leaves and internal doorframes – Requirements and specifications

Explanation

Standards 3 and 4 rely on both Standards 1 and 2, and Standard 2 relies on 1.

The revised prEN 942 contains changes which directly affect Standards 2, 3 and 4 and therefore shall be available before they can be used effectively.

NOTE Following the completion of the Technical Enquiry for prEN 13307-2 Timber blanks and semi-finished profiles for non-structural uses – Part 2: Production control, it has been agreed to remove this Standard form the package. As a result of the necessary changes it has been agreed to offer prEN 13307-2 as a CEN/TS.

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

Introduction

The classification method given in this standard is applicable to timber and wood-based products after they have been incorporated into complete windows, external door leaves and external doorframes. This standard contains the principle material requirements of timber in wood-based products, the processing of this timber and the components in the final products. Requirements for mechanical aspects are indirectly considered by appearance and density selection.

Characteristics and principles are listed in Table 1 and clauses 5, 6, 7, 8 and 9. Specific national requirements are given in Annex A.

This standard contains two annexes, Annex A "National requirements" and Annex B "Weather exposed faces".

Tables A.1 and A.2 of Annex A provide default tables for circumstances where a National Annex is not available.

This standard is part of a series of standards on timber in windows, doors and stairs.

1 Scope

This European Standard specifies principle material requirements for timber and wood-based products in external windows, external door leaves and external doorframes (with or without fixed parts), including those relating to appearance, biological durability and other physical characteristics.

This European Standard applies to assembled windows, external door leaves and external doorframes uncoated or intended to be coated.

If windows or doors are covered by other decorative veneers or films their respective veneer of film Product Standard shall apply.

NOTE For example: Timber veneers may be graded to EN 635: Parts 1, 2, 3 and 5, and ENV 635-4.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 204, *Classification of thermoplastic wood adhesives for non-structural applications*

EN 335-1, *Durability of wood and wood-based products - Definition of use classes - Part 1: General*

EN 350-2, *Durability of wood and wood-based products – Natural durability of solid wood- Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe*

EN 351-1, *Durability of wood and wood-based products – Preservative treated solid wood – Part 1: Classification of preservative penetration and retention*

EN 460, *Durability of wood and wood-based products – Natural durability of solid wood – Guide to the durability requirements for wood to be used in hazard classes*

EN 599-1, *Durability of wood and wood-based products - Performance of preventive wood preservatives as determined by biological tests - Part 1: Specification according to hazard class*

EN 844-3:1995, *Round and sawn timber - Terminology - Part 3: General terms relating to sawn timber*

prEN 942:2006, *Timber in joinery – General requirements*

EN 12765, *Classification of thermosetting wood adhesives for non-structural applications*

EN 13307-1, *Timber blanks and semi-finished profiles for non-structural uses - Part 1: Requirements*

EN 13183-1, *Moisture content of a piece of sawn timber – Part 1: Determination by oven dry method*

EN 13183-2, *Moisture content of a piece of sawn timber – Part 2: Estimation by electrical resistance method*

EN 13183-3, *Moisture content of a piece of sawn timber – Part 3: Estimation by capacitance method*

EN 13986, *Wood-based panels for use in construction – Characteristics, evaluation of conformity and marking*

EN 14298, *Sawn timber – Assessment of drying quality*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 844-3:1995 and prEN 942:2006 and the following apply.

These definitions shall take into consideration the situation after installation of the product.

Where there is a conflict between the definitions in the Standards referenced and those given below, the definitions given below shall apply.

3.1
profile
planed piece of solid or glue-laminated wood, finger-jointed or not, with a cross-section complying with the window, door leaf or doorframe requirements

3.2
concealed face
face of a joinery part which, after installation of the joinery is completed, is permanently concealed by other parts of the joinery product, or by other parts or other elements, including materials such as veneer, plastic or metal

NOTE These faces may be visible before the product is installed.

3.3
semi-concealed face
visible face of a joinery part, which cannot be viewed when the window or door is in the closed position

3.4
visible face
face of a joinery part which, after installation of the joinery is completed, is not permanently concealed or semi-concealed

NOTE 1 An opaque coating system, does not constitute concealment.

NOTE 2 Faces which are visible only when moving parts (e.g. window casements or door leaves) are open are classified as semi-concealed.

3.5
weather exposed face
face of a joinery part, which is directly subjected to driving rain or running water or permanent or intermittent condensation

NOTE For examples see Annex B.

3.6
appearance class
any surface in joinery classified according to shakes, resin pockets, bark pockets, discoloration, sapwood, exposed pith, ambrosia beetle damage and knots

3.7
coating system
combination of coating materials, which are to be applied or have been applied to the face of a joinery part

4 General requirements

The following requirements for the characteristics of the timber and wood-based materials used in windows, external door leaves and external doorframes shall apply:

— requirements for appearance, which are given in Clause 5;

— requirements for biological durability, which are given in Clause 6;

— requirements for physical properties, which are given in Clauses 7, 8 and 9.

For products where the ultimate location is not known at the time of manufacture, sufficient information shall be provided to enable possible limitations for the product end use to be identified.

5 Appearance

5.1 Characteristics

The characteristics of the profiles that are applicable to the finished product are measured and classified in accordance with the requirements of prEN 942.

5.2 Appearance classes

5.2.1 General

Table 1 identifies the elements for which characteristics shall be assigned and is a template to indicate the form in which the requirements are to be presented. National requirements are presented in Annex A. Where national requirements have not been indicated in Annex A then the values given in Tables A.1 and A.2 are to be used.

The appropriate timber classes are as specified in prEN 942.

Table 1 — Principles appearance classes for elements in windows, doors and doorframes

Element	prEN 942 Class				
	Visible face (3.4)		Semi Concealed face (3.3)		Concealed face (3.2)
	Opaque coating system	Translucent Coating system	Opaque coating system	Translucent Coating system	
Frames to windows and doors	**	**	**	**	**
Casement and sashes	**	**	**	**	**
Stiles and rails to doors	**	**	**	**	**
Lipping	**	**	**	**	**
Beads and similar small sections	**	**	**	**	**
Thresholds, sills	**	**	**	**	**
Panelling and infills	**	**	**	**	**
** Information to be provided. See Table A.1 for default values.					

Where products are subject to wind load, consideration shall be given to the use of a higher grade.

When classifying a face as concealed, the grade selected shall not impair the serviceability of the product.

5.2.2 Finger jointing, end jointing, edge jointing and laminating

Specific national requirements are given in Annex A. Where specific national requirements are not available the following restrictions shall apply :

Finger jointing, end jointing, edge jointing and laminating is permitted in all elements of Table 1 unless otherwise specified.

Infill panels produced from finger jointed pieces shall be manufactured so that when assembled only the fingers of the finger joint are visible.

Finger jointing is not permitted where a translucent coating system is applied except where agreed.

Laminated timber shall comply with the requirements of EN 13307-1.

5.3 Adhesives and repair compounds

Adhesives in timber joints, profiles or repairs which are in a weather exposed position shall be of a durability not inferior to D4 as specified in EN 204 or C4 as specified in EN 12765. Adhesives in any other joints, profiles or repairs shall be of a durability not inferior to D3 as specified in EN 204 or C3 as specified in EN 12765.

If a lower class of adhesive is used its use shall be declared and justified.

At the time of publication no European tests or classifications are available for repair compounds. Repair compounds shall therefore have a similar durability class as the appropriate adhesive.

NOTE Adhesives used to connect timber with non-timber components may need special consideration.

5.4 Slope of grain

The slope of grain of timber used shall not exceed 1:10 (10 %), except in knot areas. In addition the cumulative length of areas with sloped grain, evaluated along the axis of the timber member, shall not exceed 0,5m or 20 % of the length of the piece, whichever is the shorter.

NOTE Slope of grain may also have an effect on the stability of the product.

5.5 Repair

5.5.1 Features

Where indicated in prEN 942 the following features shall be improved, using a repair compound or wooden plugs secured with adhesive, unless specifically excluded by the specification/

- Loose or unsound knots;
- Shakes;
- Resin pockets and other areas of resin exudation;
- Bark pockets;
- Exposed pith;
- Ambrosia beetle attack.

5.5.2 Plugs

Any plug shall:

a) be of the same species or species with similar characteristics as the surrounding timber;

b) be secured with an appropriate adhesive (see Clause 5.3);

c) whenever possible lie with its grain direction in the same general direction as the grain of the piece in which it is inserted;

d) be of a width (i.e. the lesser dimension) not greater than 6 mm above the maximum limit of knot size for the specified class; (the width of a non-cylindrical plug shall be not more than 30 mm.);

NOTE It is possible that a plug may be produced from 'branch material' to create the appearance of a knot.

e) be within (+ 0, -2) percentage points of the moisture content of the timber;

f) be within the moisture content range recommended by the adhesive manufacturer;

g) have at least 2/3 of its diameter within the face when occurring at an arris.

Only one plug shall be used for a single repair below a translucent surface, elsewhere not more than two cylindrical plugs shall be used for a repair. Where two plugs are used for a single repair they shall not overlap. The repair of a knot is classified as a sound intergrown knot.