

Timber blanks and semi-finished profiles for non-structural uses —

Part 1: Requirements

The European Standard EN 13307-1:2006 has the status of a
British Standard

ICS 79.080

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 13307-1:2006.

The UK participation in its preparation was entrusted to Technical Committee B/543, Round and sawn timber.

A list of organizations represented on B/543 can be obtained on request to its secretary.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2006

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ISBN 0 580 49753 4

Amendments issued since publication

Amd. No.	Date	Comments

English Version

Timber blanks and semi-finished profiles for non-structural uses
- Part 1: Requirements

Ebauches et profilés semi-finis en bois pour usages non
structurels - Partie 1 : Exigences

Holzkanteln und Halbfertigprofile für nicht tragende
Anwendungen - Teil 1: Anforderungen

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Foreword

This document (EN 13307-1:2006) 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of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by October 2007.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 from 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

This European Standard relates to semi-finished products intended to be used in a wide range of joinery products, including windows, doors and stairs. It provides a basis for contracts between the sellers of these semi-finished products and manufacturers of the end products. The specifier should be aware that not all of the characteristics defined and/or classified by this standard may be relevant in any given application, especially if those characteristics are subsequently made good by the manufacturer of the end product.

At the time of publication, no relevant test standard for delamination or for temperature stability of adhesives exists.

1 Scope

This European Standard specifies requirements for timber blanks and semi-finished profiles for non-structural uses, including glued laminated and glued finger jointed products. This Standard gives specific requirements for dimensions, stability and moisture content. This Standard applies to hardwood and to softwood for use in joinery.

Production control requirements and tests are given in prCEN/TS 13307-2.

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

prEN 942, *Timber in joinery - General requirements*

EN 1310, *Round and sawn timber – Method of measurement of features*

ENV 12169, *Criteria for the assessment of conformity of a lot of sawn timber*

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*

prCEN/TS 13307-2, *Timber blanks and semi-finished profiles for non-structural uses - Part 2: Production control and testing*

EN 13556, *Round and sawn timber - Nomenclature of timbers used in Europe*

3 Terms and definitions

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

3.1

blank

semi-finished unplaned or planed piece of solid or laminated wood, with or without finger joints and/or butt joints, with a rectangular cross section

3.2

glued laminated product

blank or semi finished profile consisting of two or more lamella of solid, butt jointed or finger jointed wood glued together lengthways (i.e. not at right angles)

3.3

semi-finished profile

unplaned or planed piece of solid or glued laminated wood, finger jointed or not, with a specific cross section (e.g. L-, T- or Z-shape)

3.4

butt joint

joint in wood created by gluing two squared end faces of wood together

3.5

lamella

solid timber piece, usually of a thickness of more than 7 mm, glued lengthways to create thicker sections

NOTE 1 the piece may include finger joints and/or butt joints

NOTE 2 Thicknesses of not more than 7mm are called veneers and are defined in EN 313-2.

3.6

service class 1

characterised by a moisture content in the product corresponding to a temperature of 20 °C and the relative humidity of the surrounding air only exceeding 65 % for a few weeks of the year

3.7

service class 2

characterised by a moisture content in the product corresponding to a temperature of 20 °C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks of the year

3.8

service class 3

climatic conditions leading to a higher moisture content than in Service class 2

4 Requirements

4.1 Species

The manufacturer shall identify the species used in the production of the blank or semi-finished profile.

NOTE It is common and accepted practice in laminated profiles to mix certain species (e.g. spruce and fir).

4.2 Dimensions, geometrical characteristics

4.2.1 General

Geometrical and physical characteristics shall be related to a reference moisture content of 12 %. The limits specified in this standard shall apply at the time of delivery.

4.2.2 Cross-sectional dimensions

Tolerances on cross sectional sizes shall be +2 mm to -1 mm on sawn sections and +0,5 mm to 0 mm on planed profiles. These tolerances apply at a moisture content of 12 %. For tolerances at other moisture contents the following formula shall apply to correct the tolerance to a 12 % value:

$$\Delta = 3 w \left(\frac{12 - t}{1000} \right) \quad (1)$$

where :

Δ is the calculated tolerance;

w is the face dimension in millimetres at a moisture content of t ;

t is the moisture content in %.

4.2.3 Tolerances on length

Specified lengths shall not have any minus tolerance.

4.2.4 Warp

4.2.4.1 General

If the tolerance on warp is not specified, the following limits for warp in all classes, measured in accordance with EN 1310, shall apply.

Bow, spring or twist for planed and unplaned pieces shall be limited to the following.

Where twist appears to be combined with bow or spring the permissible values shall be halved.

4.2.4.2 Bow

Sawn timber $F = (L / 1000)^2$, or 2mm, whichever is the greater.

Planed $F = (L / 1000)^2 / 2$ or 1mm, whichever is the greater.

Where F is the bow and L is the length of the piece, in millimetres.

4.2.4.3 Spring

Sawn timber $V = (L / 1000) \times b / 50$, or 2 mm, whichever is the greater.

Planed timber $V = (L / 1000) \times b / 100$, or 1 mm, whichever is the greater.

Where V is the spring, b is the width of the piece and L is the length of the piece, in millimetres.

4.2.4.4 Cup

Sawn timber limited to $b/100$ or 1 mm, whichever is the greater,

Planed timber limited to $b/200$ or 0,2 mm, whichever is the greater

Where b is the width of the piece in millimetres.

4.3 Condition of surface

Blanks and semi-finished profiles shall, according to the contract, be supplied planed or unplaned.

Any defect of flatness shall be compatible with the relevant tolerances for cross-sectional dimensions.

4.4 Moisture content

4.4.1 General

The moisture content of any piece or parcel shall be estimated using the method described in EN 13183-2 or EN 13183-3. In the event of a dispute, the method to be used shall be the method described in EN 13183-1.

NOTE The more accurate method described in EN 13183-1 is a Destructive method and may not always be appropriate.

4.4.2 Moisture content at delivery

The average moisture content at delivery and permitted deviation shall be specified by the buyer.

NOTE Guidance on the moisture content of timber for any particular end application is given in prEN/TS 13307-2.

4.5 Timber quality

4.5.1 General requirements

The quality of each face of a piece shall comply with the requirements of one of the classes given in prEN 942.

In the event of a dispute the quality of a lot or batch shall be assessed using the selection process given in ENV 12169 using an AQL of 10.

4.5.2 Growth rings

The relationship between the angle of the growth rings in adjacent lamella has a significant affect on the stability and performance of the laminated profile and shall be considered by the manufacturer. Advice on methods of reducing problems is given in Annex A.

4.6 End joints

4.6.1 Finger joints

Finger joints in outer layers shall comply with the requirements of prEN 942. Finger joints in laminated profiles shall be permitted in inner layers.

The individual parts of jointed members shall be of similar wood structure in respect to width and slope of the growth rings. A gap between the finger and root of a cut is not allowed, nor are cracks radiating from the fingers or roots of a cut permitted. Glue lines shall be uninterrupted. Where a weather tightness performance is required the finger joint tightness test in prEN/TS 13307-2 shall be applied to a selected sample.

NOTE Finger joints may be manufactured in such a way that the fingers are visible on the broader or narrower face of the blank or the lamella.

Where a wind load performance is required the distance between two adjacent finger joints shall be greater than 150 mm.

4.6.2 Butt joints

Butt joints are only permitted to the inner layers of laminated profiles. A butt joint shall not occur within 150 mm of another butt joint in an adjacent lamella.

4.7 Lamination

4.7.1 Thickness of lamella

There is no general limitation on the thickness of lamella.

NOTE In laminated cross-sections intended for external use, the thickness of outer layer should not be less than 18 mm. For some applications (e.g. door stiles) thinner outer laminations may be acceptable.

4.7.2 Mixing of species

The mixing of species is allowed if the following conditions are fulfilled, and proven by testing in accordance with prCEN/TS 13307-2:

- compatibility of bond strength;
- compatibility of the stability of the species.

4.7.3 Glue line bonding

The thickness of the glue line shall be within the limits recommended for the type and end use condition as specified by the adhesive manufacturer.

NOTE 1 The thickness of the glue line depends on the type of glue used and the end use specification provided by the manufacturer.

NOTE 2 Edge to edge gluing is not recommended in the outer layers of a glued laminated product.

NOTE 3 Special care has to be taken when laminating some species, particularly with regard to density, wettability and pre-treatment processes.

5 Marking and labelling

Blanks and semi-finished profiles for joinery shall be identified by the appropriate marking of the package or bundle or on the accompanying paperwork.

The marking requirements are given below:

- a) name of the manufacturer;
- b) anticipated Service class in accordance with prCEN/TS 13307-2;
- c) method of identifying the production batch;
- d) number of this Standard;
- e) grade/class of the product;
- f) latin code for the wood species; in accordance with EN 13556;
- g) name of the product;
- h) designation of the profile shape;

- i) dimensions in mm, separated by a '/', set out in the following order, thickness, width, length;
- j) condition of the surface:- "p" for planed pieces or "s" for unplanned pieces.

NOTE Marking of individual laminated pieces may be applied to the internal faces of the lamination and should as a minimum, include items a) through c) above.

Annex A (informative)

Orientation of growth rings

NOTE Based on Central European Experience

The orientation slope of the growth rings, measured as the angle at the point of intersection of the tangent of the growth rings and the faces of the piece, should not be less than 45° . The slope of growth rings of less than 45° should only occur in a limited number of pieces in a lot, but should only be down to 0° in one corner point of the cross-section. In laminated profiles these limits should be applied to the outer layers only.

Figures A.1 and A.2 show recommended growth ring angles. The growth ring angles in Figures A.3 and A.4 should be avoided if possible.

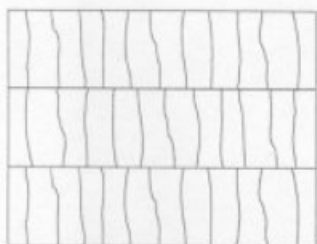


Figure A.1

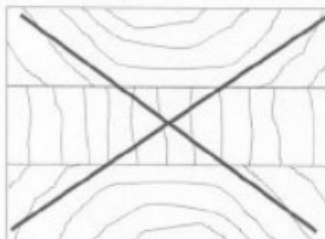


Figure A.3



Figure A.2

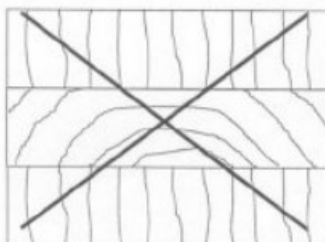


Figure A.4

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- [1] EN 313-2, *Plywood - Classification and terminology - Part 2: Terminology*
- [2] EN 14220, *Timber and wood-based materials in external windows, external door leaves and external doorframes – Requirements and specifications*
- [3] EN 14221, *Timber and wood-based materials in internal windows, internal door leaves and internal doorframes – Requirements and specifications*
- [4] EN 13183-3, *Moisture content of a piece of sawn timber – Part 3: Estimation by capacitance method*

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