SLOVENSKI STANDARD
SIST EN 14080:2013

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Nadomešča:
SIST EN 1194:2000
SIST EN 14080:2005
SIST EN 385:2002
SIST EN 386:2002
SIST EN 387:2002
SIST EN 390:1996
SIST EN 391:2002
SIST EN 392:1996

Lesene konstrukcije - Lepljeni lamelirani les in lepljeni masivni les

Timber structures - Glued laminated timber and glued solid timber

Holzbauwerke - Brettschichtholz und Balkenschichtholz - Anforderungen

Structures en bois - Bois lamellé collé et bois massif reconstitué - Exigences

Ta slovenski standard je istoveten z: **EN 14080:2013**

ICS:

79.060.99	Druge lesne plošče	Other wood-based panels
91.080.20	Lesene konstrukcije	Timber structures

SIST EN 14080:2013 **en,fr,de**

EUROPEAN STANDARD

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EN 14080

June 2013

ICS 79.060.99

Supersedes EN 1194:1999, EN 14080:2005, EN 385:2001, EN 386:2001, EN 387:2001, EN 390:1994, EN 391:2001, EN 392:1995

English Version

Timber structures - Glued laminated timber and glued solid timber - Requirements

Structures en bois - Bois lamellé collé et bois massif reconstitué - Exigences

Holzbauwerke - Brettschichtholz und Balkenschichtholz - Anforderungen

This European Standard was approved by CEN on 1 May 2013.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 14080:2013) has been prepared by Technical Committee CEN/TC 124 “Timber structures”, 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of an identical text or by endorsement, at the latest by December 2013, and conflicting national standards shall be withdrawn at the latest by December 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 391:2001, EN 392:1995, EN 14080:2005, EN 387:2001, EN 385:2001, EN 390:1994, EN 1194:1999 and EN 386:2001 (see below).

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This standard supersedes the following standards:

— EN 387:2001, *Glued laminated timber — Large finger joints — Performance requirements and minimum production requirements*;

— EN 390:1994, *Glued laminated timber — Sizes, permissible deviations*;

— EN 1194:1999, *Timber structures — Glued laminated timber — Strength classes and determination of characteristic values*;

— EN 14080:2005, *Timber structures — Glued laminated timber — Requirements*.

Regarding glued laminated timber this standard supersedes the following standards:

— EN 385:2001, *Finger jointed structural timber — Performance requirements and minimum production requirement* (superseded by the present document and prEN 15497);

— EN 386:2001, *Glued laminated timber — Performance requirements and minimum production requirements*;

NOTE For glulam made of hardwood species a European Standard is under preparation.

— EN 391:2001, *Glued laminated timber — Delamination test of glue lines*;

— EN 392:1995, *Glued laminated timber — Shear test of glue lines*.

The above standards have been merged into this standard and changed considerably. The list below shows the relevant changes and amendments.

The following have been included:

— Block glued glulam and glued solid timber;

— Requirements for emulsion polymer isocyanate adhesives and for gap-filling adhesives;

— A uniform denomination for lamination strength classes has been included. These T-classes are related to strength classes given in other European Standards;

— Rules for estimation mechanical properties of glued laminated timber resawn by length;

— Provisions for Resistance to fire;

— Maximum deviations for curved glued laminated products;

— New values for tensile and compression strength perpendicular to the grain, for shear strength and shear modulus, modulus of elasticity parallel and perpendicular to the grain for glued laminated timber with values for rolling shear strength and modulus.

The scope covers glued laminated products made from coniferous species listed in this standard and poplar.

For moisture curing one-component polyurethane adhesives normative reference is now made to EN 15416-5 and EN 15425.

For phenolic and aminoplastic adhesives reference is made to prEN 301 and prEN 302.

With respect to durability against biological attack reference is made to EN 15228.

The performance requirements for finger joints in laminations have been changed.

Requirements have been introduced for the machinery for the separate application of resin and hardener to finger joints in laminations.

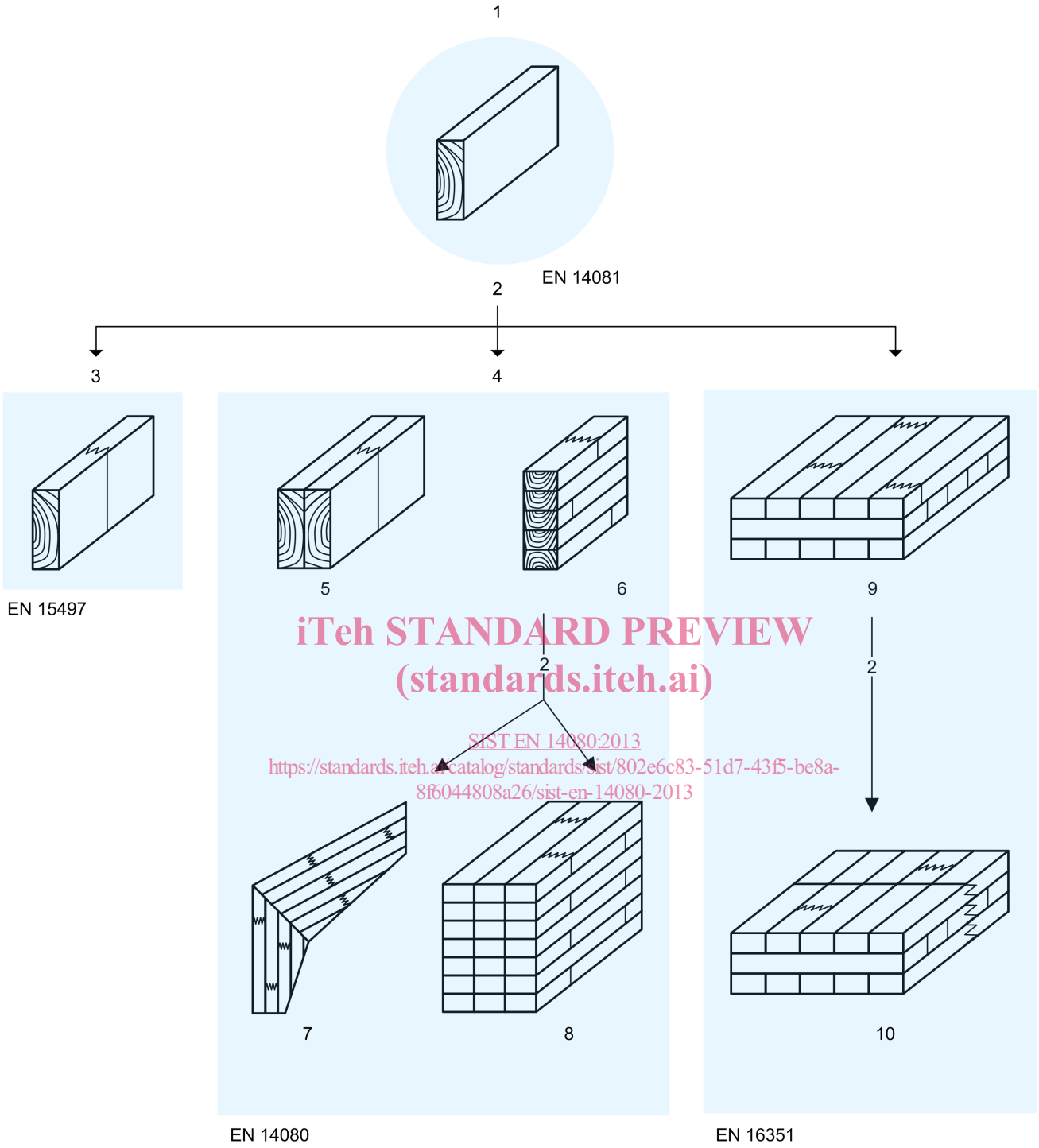
The rules for laminations laid side by side and for grooves in laminations have been changed.

The required cramping pressure for the production of large finger joints has been changed.

The evaluation of conformity section and the Annex ZA has been changed according to the revised answer to the mandate.

The rules for marking and labelling have been adopted to the changes mentioned above.

Figure 1 shows the relation of European Standards for structural timber products prepared by CEN/TC 124.



Key

1	boards	6	glued laminated timber (glulam)
2	is a component for	7	glulam with large finger joints
3	structural finger jointed timber	8	block glued glulam
4	glued laminated products	9	cross laminated timber (X-Lam)
5	glued solid timber	10	cross laminated timber (X-Lam) with large finger joints

Figure 1 — Relation of European Standards for structural timber products prepared by CEN/TC 124

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

1 Scope

This European Standard sets the performance requirements of the following glued laminated products:

— Glued laminated timber (glulam);

— Glued solid timber;

— Glulam with large finger joints;

— Block glued glulam

for use in buildings and bridges.

It also lays down minimum production requirements, provisions for evaluation and attestation of conformity and marking of glued laminated products.

This European Standard is applicable for glued laminated timber made of coniferous species listed in this standard or poplar consisting of two or more laminations having a thickness from 6 mm up to 45 mm (inclusive).

It may be possible to produce glulam made from specific hardwood species based on some provisions of this European Standard. In this case, Annex ZA does not apply.

This European Standard is applicable for glued solid timber made of coniferous species listed in this standard or poplar consisting of two to five laminations having a thickness greater than 45 mm and less than or equal to 85 mm.

This European Standard is applicable for large finger joints in glued laminated timber with a finger length of at least 45 mm.

This European Standard is applicable for block glued glulam having solid rectangular cross sections.

This European Standard also gives the requirements for glued laminated products treated against biological attack. Glued laminated products treated with fire retardants are not covered.

2 Normative references

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

prEN 301:2011, *Adhesives, phenolic and aminoplastic, for load-bearing timber structures — Classification and performance requirements*

prEN 302-1, *Adhesives for load-bearing timber structures — Test methods — Part 1: Determination of longitudinal tensile shear strength*

prEN 302-2:2011, *Adhesives for load-bearing timber structures — Test methods — Part 2: Determination of resistance to delamination*

prEN 302-3:2011, *Adhesives for load-bearing timber structures — Test methods — Part 3: Determination of the effect of acid damage to wood fibres by temperature and humidity cycling on the transverse tensile strength*

prEN 302-4, *Adhesives for load-bearing timber structures — Test methods — Part 4: Determination of the effect of wood shrinkage on the shear strength*

prEN 302-5:2011, *Adhesives for load-bearing structures — Test methods — Part 5: Determination of maximum assembly time under referenced conditions*

prEN 302-6, *Adhesives for load-bearing timber structures — Test methods — Part 6: Determination of the minimum pressing time under referenced conditions*

EN 338:2009, *Structural timber — Strength-classes*

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 384, *Structural timber — Determination of characteristic values of mechanical properties and density*

EN 408, *Timber structures — Structural timber and glued laminated timber — Determination of some physical and mechanical properties*

EN 717-1, *Wood-based panels — Determination of formaldehyde release — Part 1: Formaldehyde emission by the chamber method*

EN 1995-1-1:2004, *Eurocode 5 — Design of timber structures — Part 1-1: General — Common rules and rules for buildings*

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 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 14081-1:2005+A1:2011, *Timber structures — Strength graded structural timber with rectangular cross section — Part 1: General requirements*

EN 14358, *Timber structures — Calculation of characteristic 5-percentile values and acceptance criteria for a sample*

EN 15228:2009, *Structural timber — Structural timber preservative treated against biological attack*

EN 15416-3, *Adhesives for load bearing timber structures other than phenolic and aminoplastic — Test methods — Part 3: Creep deformation test at cyclic climate conditions with specimens loaded in bending shear*

EN 15416-5, *Adhesives for load bearing timber structures other than phenolic and aminoplastic — Test methods — Part 5: Determination of conventional pressing time*

EN 15425:2008, *Adhesives — One-component polyurethane adhesives for load bearing timber structures — Classification and performance requirements*

3 Terms and definitions

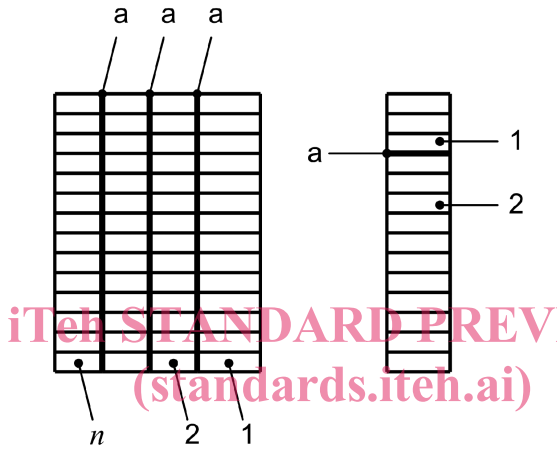
For the purposes of this document, the following terms and definitions apply.

3.1
actual size
measured size of a glued laminated product at a related measured/estimated moisture content

3.2
bonding strength
structural effectiveness of adhesives between timber components when subjected to stresses

3.3
block glued glulam
structural member having a solid rectangular cross section comprising two or more glulam components bonded together with a gap filling adhesive

Note 1 to entry: See Figure 2.



Key

1 glulam component 1

2 glulam component 2

n glulam component n

a glue line between glulam components

Figure 2 — Examples for block glued glulam

3.4
combined glued laminated timber
glued laminated timber with a cross section comprising inner and outer laminations of different strength classes or manufacturer specific strength class

3.5
combined glulam with asymmetrical layup
combined glued laminated timber having an asymmetrical cross sectional layup

3.6
corrected size
size of a glued laminated product corrected by calculation from its actual size to its size at the reference moisture content

3.7
curved glued laminated member
member made of glulam or glulam with large finger joints or block glued glulam having a precamber greater than 1 % of its span

Note 1 to entry: See Figure 12.

3.8
delamination length
sum of the lengths of delaminated glue lines on both end-grain surfaces of a test piece

3.9
developed length
length of a curved member measured at the outermost side of the lamination having the largest radius

3.10
finger angle
inclination α of each side of the fingers of a finger joint

Note 1 to entry: See Figure 3.

3.11
finger joint
interlocking end joint formed by machining a number of similar, tapered, symmetrical fingers in the ends of boards, using a finger joint cutter and then bonded together

Note 1 to entry: In this European Standard the term finger joint is used for finger joints in laminations whereas finger joints between glued laminated timber components are defined as large finger joints (see also 3.20).

Key

l_j finger length

p pitch

α finger angle

l_t tip gap

b_t tip width

Figure 3 — Typical profile of a finger joint

3.12
finger length
distance between the finger base and the tip of the finger, measured along the centre line of the finger

Note 1 to entry: See Figure 3.

3.13
finished thickness
thickness after planing

3.14
gap filling adhesive
adhesive that has been tested with a glue line thickness of 2 mm