BRITISH STANDARD

BS EN
14374:2004

Timber structures — Structural laminated veneer lumber — Requirements

The European Standard EN 14374:2004 has the status of a British Standard

ICS 79.080; 91.080.20

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 14374:2004.

EN 14374 is a candidate "harmonized" European Standard and fully takes into account the requirements of the European Commission mandate M 112, "Structural timber products and ancillaries" given under the EU Construction Products Directive (89/106/EEC), and intended to lead to CE marking. The date of availability of EN 14374 as a harmonized European Standard, i.e. the date from which this standard may be used for CE marking purposes, is subject to an announcement in the *Official Journal of the European Communities*.

The UK participation in its preparation was entrusted to Technical Committee B/518, Structural timber, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled "International Standards Correspondence Index", or by using the "Search" facility of the *BSI Electronic Catalogue* or of British Standards Online.

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EN 14374

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English version

Timber structures - Structural laminated veneer lumber - Requirements

Structures en bois - LVL (Lamibois) - Exigences

Holzbauwerke - Furnierschichtholz für tragende Zwecke - Anforderungen

This European Standard was approved by CEN on 22 July 2004.

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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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Foreword

This document (EN 14374:2004) has been prepared by Technical Committee CEN/TC 124 "Timber Structures", the secretariat of which is held by SFS.

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 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

No existing European Standards are superseded.

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.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies the requirements for laminated veneer lumber for structural applications. The tests to be used, methods to carry out the evaluation of conformity and content of the marking of the product are given.

This document does not cover laminated veneer lumber treated against biological attack or fire.

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 314-1, *Plywood – Bonding quality – Part 1: Test methods*.

EN 322, *Wood-based panels – Determination of moisture content.*

EN 323, *Wood-based panels – Determination of density.*

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

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

EN 717-2, *Wood-based panels – Determination of formaldehyde release – Part 2: Formaldehyde release by the gas analysis method.*

EN 789, *Timber structures – Test methods – Determination of mechanical properties of wood based panels.*

EN 1438:1998, *Symbols for timber and wood-based products.*

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

prEN 14358, *Structural timber – Calculation of characteristic 5-percentile value.*

3 Terms, definitions and symbols

For the purposes of this document, the symbols in EN 1438:1998 and the following terms and definitions apply.

3.1
laminated veneer lumber (LVL)
a composite of wood veneers with wood fibres essentially oriented in the same direction

NOTE This definition does not exclude laminated veneer lumber with cross grained veneers.

3.2
characteristic strength and stiffness value
the population fifth percentile value and for stiffness also the mean value obtained from results of tests with a duration of 300 s using test specimens at an equilibrium moisture content resulting from a temperature of 20 °C and a relative humidity of 65 %

3.3
thickness
the dimension of a cross section, which is perpendicular to the plane of the veneers, see Figure 1

3.4
width
the dimension of a cross section, which is perpendicular to the thickness, see Figure 1

3.5
target size
the size of the laminated veneer lumber member specified by the purchaser at the reference moisture content of (10 ± 2) %

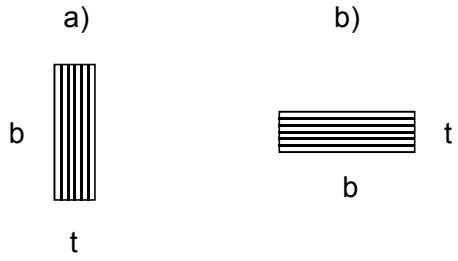

Figure 1 – Thickness *t* and width *b* of cross section of laminated veneer lumber. Case a) is the cross section related to edgewise bending while case b) is the cross section related to flatwise bending

4 Requirements

4.1 Veneers

The minimum number of veneers in the cross section shall be five. The maximum thickness of each veneer shall be 6 mm.

4.2 Bonding quality

The bonding quality shall be determined in accordance with the method given in annex B.

For each tested glueline the apparent cohesive wood failure percentage shall be at least 70 %.

4.3 Dimensions and tolerances

The thickness shall not deviate more than +(0,8 + 0,03 *t*) mm or -(0,4 + 0,03 *t*) mm from the target thickness (*t*).

NOTE Local thickness deviations related to discontinuities of the veneers, e.g. knot holes and veneer joints, are allowed.

For widths < 400 mm the width shall not deviate more than ± 2 mm from the target width. For widths ≥ 400 mm the width shall not deviate more than ± 0,5 % from the target width.

The length shall not deviate more than ± 5 mm from the target length.

The angles of the cross section shall not deviate more than 1:50 (about 1,1°) from a right angle, see Figure 2.

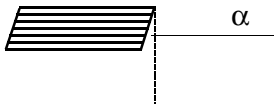

Figure 2 – Example of an angle α of a cross section of laminated veneer lumber

4.4 Strength

4.4.1 General

The manufacturer of laminated veneer lumber shall declare fifth percentile characteristic strength values.

NOTE The orientation of strength is given in annex A.

The characteristic values shall be determined from tests given in 4.4.2 to 4.4.9 and evaluated in accordance with the method given in prEN 14358.

4.4.2 Bending strength edgewise

The bending strength tests shall be carried out in accordance with the test method given in EN 408. In edgewise bending the width of the specimen shall be at least 100 mm.

If the width of the specimen is lower than the reference width of 300 mm, the individual test results shall be multiplied by the factor $k_{m,corr}$:

$$k_{m,corr} = \left(\frac{b}{300} \right)^{s}$$

where *b* is the width of the tested specimen in mm and *s* is the size effect parameter given by:

$$s = 2v - 0{,}05$$

where *v* is the coefficient of variation of the test results. *v* may be taken less than 0,10 only if it is verified from at least two years of documented experience.

4.4.3 Bending strength flatwise

The bending strength tests shall be carried out in accordance with the test method given in EN 408. In flatwise bending the thickness of the specimen shall be at least 38 mm.

4.4.4 Tension strength parallel to the grain

The tension strength tests parallel to the grain shall be carried out in accordance with the test method given in EN 408. The length of the specimen between the testing machine grips shall be at least 1 000 mm.

If the length of the specimen between the testing machine grips is lower than the reference length of 3 000 mm, the individual test results shall be multiplied by the factor $k_{t,corr}$:

$$k_{t,corr} = \left(\frac{l}{3\,000} \right)^{s/2}$$

where l is the length of the specimen between the testing machine grips in mm and s is the size effect parameter given in 4.4.2.

4.4.5 Tension strength perpendicular to the grain

The tension strength tests perpendicular to the grain shall be carried out in accordance with the test method given in EN 408. The cross section of the specimen shall be at least 45 mm x 45 mm.

4.4.6 Compression strength parallel to the grain

The compression strength tests parallel to the grain shall be carried out in accordance with the test method given in EN 408. The cross section of the specimen shall be at least 45 mm x 45 mm.

4.4.7 Compression strength perpendicular to the grain

The compression strength tests perpendicular to the grain shall be carried out in accordance with the test method given in EN 408. The cross section of the specimen shall be at least 45 mm x 45 mm.

4.4.8 Shear strength related to edgewise bending

The shear strength tests related to edgewise bending shall be carried out in accordance with the test method given in EN 408.

4.4.9 Shear strength related to flatwise bending

The shear strength tests related to flatwise bending shall be carried out in accordance with the planar shear test method given in EN 789. The thickness of the specimen shall be at least 25 mm.

4.5 Stiffness

4.5.1 General

The manufacturer of laminated veneer lumber shall declare fifth percentile as well as mean characteristic modulus of elasticity values and mean characteristic shear modulus values.

The characteristic values shall be determined from tests given in 4.5.2 - 4.5.5 and evaluated in accordance with the method given in prEN 14358.

4.5.2 Modulus of elasticity parallel to the grain

The modulus of elasticity tests parallel to the grain shall be carried out in accordance with the local modulus of elasticity in bending test method given in EN 408. The specimen shall be loaded in edgewise bending. The width of the specimen shall be at least 100 mm.

4.5.3 Modulus of elasticity perpendicular to the grain

The modulus of elasticity tests perpendicular to the grain shall be carried out in accordance with the test method given in EN 408. The specimen shall be loaded in tension. The cross section of the specimen shall be at least 45 mm x 45 mm.

4.5.4 Shear modulus related to edgewise bending

The shear modulus tests related to edgewise bending shall be carried out in accordance with the test method given in EN 408.

4.5.5 Shear modulus related to flatwise bending

The shear modulus tests related to flatwise bending shall be carried out in accordance with the planar shear test method given in EN 789. The thickness of the specimen shall be at least 25 mm.

4.6 Density

The manufacturer of laminated veneer lumber shall declare fifth percentile as well as mean characteristic density values.

The density shall be determined in accordance with the method given in EN 323.

4.7 Moisture content

The moisture content shall be determined in accordance with the method given in EN 322.

4.8 Reaction to fire

The reaction to fire classification of laminated veneer lumber shall be declared when subject to regulatory requirements, and may be declared otherwise.

The reaction to fire class shall be determined in accordance with EN 13501-1. Where the test method requires, the product shall be mounted and fixed in a manner representative of its intended end use.

4.9 Release of formaldehyde

The manufacturer of laminated veneer lumber shall declare the release of formaldehyde class.

The release of formaldehyde class shall be determined in accordance with the method given in Annex C.

4.10 Natural durability against biological attack

The manufacturer of laminated veneer lumber shall declare the natural durability of the wood from which the product is manufactured in accordance with EN 350-2.

5 Evaluation of conformity

5.1 General

The compliance of laminated veneer lumber with the requirements of this standard and with the declared values and classes of the characteristics shall be demonstrated by initial type testing or assessment and factory production control.

5.2 Initial type testing or assessment

5.2.1 General

Initial type testing or assessment of laminated veneer lumber shall be performed to demonstrate conformity to the declared values or classes of the characteristics.

Initial type testing shall also be carried out whenever a significant change in the adhesives, grade or species of the veneers or manufacturing processes affects the declared characteristics of an already initial type tested product. When the change only affects some of the declared characteristics then the initial type testing may be restricted only to those characteristics.

Where testing or assessment has previously been performed according to the requirements of this document (same product, characteristics, test method, sampling procedure, system of attestation of conformity) such testing or assessment may be taken into account for the purposes of initial type testing or assessment.

The sampling procedure used and the results from the initial type testing or assessment shall be recorded and the records shall be kept for at least five years after the last date of production of the product to which they relate.

5.2.2 Sampling

The laminated veneer lumber to be used in initial type testing shall be a representative sample of the population.

For initial type testing of bonding quality, strength, stiffness and density the sample size shall be at least 32 for each species or combination of species, growth region or combination of growth regions, production line, product grade and characteristic to be tested.

For initial type testing of release of formaldehyde the sample size shall be at least 3 for each species or combination of species and adhesive to be tested.

5.2.3 Characteristics to be initial type tested or assessed

In initial type testing or assessment the characteristics given in Table 1 shall be determined.

Table 1 – Characteristics to be determined in initial type testing or assessment

Characteristic	Sampling	Test and evaluation method	Compliance criteria
Bonding quality	5.2.2	4.2	4.2
Bending strength edgewise	5.2.2	4.4.2	Declared value
Size effect parameter	5.2.2	4.4.2	Declared value
Bending strength flatwise	5.2.2	4.4.3	Declared value
Tension strength parallel to the grain	5.2.2	4.4.4	Declared value
Tension strength perpendicular to the grain	5.2.2	4.4.5	Declared value [a) b)]
Compression strength parallel to the grain	5.2.2	4.4.6	Declared value
Compression strength perpendicular to the grain	5.2.2	4.4.7	Declared value [b)]
Shear strength related to edgewise bending	5.2.2	4.4.8	Declared value [b)]
Shear strength related to flatwise bending	5.2.2	4.4.9	Declared value [b)]
Modulus of elasticity parallel to the grain	5.2.2	4.5.2	Declared value
Modulus of elasticity perpendicular to the grain	5.2.2	4.5.3	Declared value [a) b)]
Shear modulus related to edgewise bending	5.2.2	4.5.4	Declared value [a) b)]
Shear modulus related to flatwise bending	5.2.2	4.5.5	Declared value [a) b)]
Density	5.2.2	4.6	Declared value [a)]
Reaction to fire	4.8	4.8	Declared class [a)]
Release of formaldehyde	5.2.2	4.9	Declared class
Natural durability against biological attack	4.10	4.10	Declared class [a)]

[a)] No performance determined (NPD, or Class F for reaction to fire) may be declared.

[b)] Where the intended use of the product is known only those strength parameters relevant should be declared, otherwise no performance determined (NPD) is used for other strength parameters.

5.3 Factory production control

5.3.1 General

The manufacturer of laminated veneer lumber shall establish, document and maintain a factory production control system to ensure that the products placed on the market conform to the declared values or classes of the characteristics.

The factory production control system shall consist of procedures for control of raw and incoming materials, equipment, production processes and finished products. Furthermore, calibration routines as well as actions to be taken in the event of non-conformity shall be included.

Documentation of procedures followed in the event of non-conformity shall include, as a minimum, identification procedures for separating conforming from non-conforming production, supplemental test procedures and accept/reject criteria, and procedures used to mark and dispose of non-conforming products.

The factory production control system and the results from it shall be recorded and the records shall be kept for at least 5 years.

5.3.2 Characteristics of the finished product to be control tested

In factory production control the characteristics given in Table 2 shall be controlled by direct testing. All other relevant characteristics shall be controlled indirectly, e.g. by controlling raw materials and the production process.

Control testing may be carried out using alternative test methods, provided that correlation with the reference test method is established. The alternative method together with its correlation with the reference test method shall be documented.

The laminated veneer lumber to be used in factory production control shall be representatively sampled from the normal production process.

For control testing of bonding quality, dimensions, strength and density the sample size shall be at least three per working day for each species or combination of species, production line, product grade and characteristic to be tested. The samples shall over time be taken from different working shifts, where a shift system is operated.

Additional control testing shall be carried out for each working shift if it is not verified and documented that the working shift does not impact bonding quality, dimensions, strength and density.

Additional control testing shall be carried out after changes in product thickness if it is not verified and documented that the product thickness does not impact bonding quality, dimensions, strength and density.

Table 2 – Characteristics to be tested in factory production control

Characteristic	Sampling and frequency of testing	Test and evaluation method	Compliance criteria
Bonding quality	5.3.2	4.2	4.2
Dimensions	5.3.2	4.3	4.3
Bending strength edgewise	5.3.2	4.4.2	Declared value a)
Bending strength flatwise	5.3.2	4.4.3	Declared value a)
Modulus of elasticity parallel to the grain	5.3.2	4.5.2	Declared value b)
Density	5.3.2	4.6	Declared value b)
a) The fifth percentile characteristic value shall be evaluated using the 100 latest individual test results. b) The mean characteristic value shall be evaluated using the 100 latest individual test results.			

The frequency for control testing of strength and density may be reduced to at least two times per week provided the test results, from at least one year documented control testing, fulfil the compliance criteria and alternative indirect control methods are used.

For control testing of stiffness the sample size shall be at least six for each species or combination of species, production line and product grade. The control testing shall be carried out at least once per month.

6 Marking

Laminated veneer lumber products complying with this documnt shall clearly be marked. The marking shall be affixed on the product itself (or when not possible it may be on the accompanying label, the packaging or on the accompanying commercial documents). The following information shall be given:

- name or identification mark and registered address of the producer;
- reference to this document;
- description of the product and intended use;
- information on the relevant characteristics given in Table 1.

Where Z.3 covers the same information as this clause, the requirements of this clause are met.

Annex A
(informative)

Orientation of strength of laminated veneer lumber

The orientation of strength of laminated veneer lumber is given in Figure A.1.

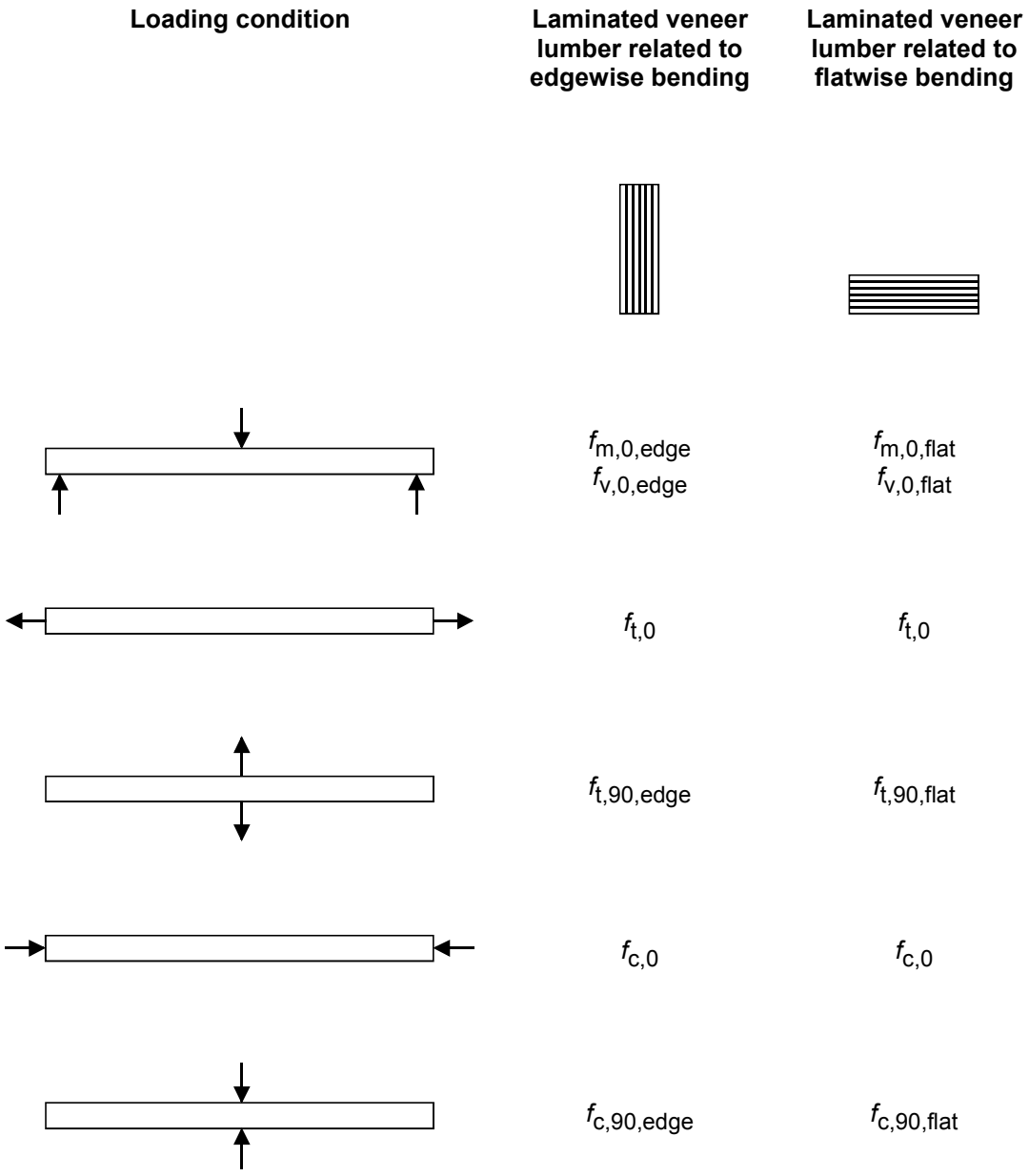

Figure A.1 – Orientation of strength of laminated veneer lumber

Annex B
(normative)

Method for testing of bonding quality

The minimum size of the bonding quality test specimen shall be 75 mm in width and 100 mm in length while the thickness shall be equal to the thickness of the laminated veneer lumber.

After a pre-treatment of:

- immersion for at least 4 hours in boiling water, followed by
- drying in a ventilated drying oven for at least 16 hours at 60 °C, followed by
- immersion for at least 4 hours in boiling water and finally followed by
- cooling in room temperature water for at least 2 hours

the specimen shall be cleaved and the apparent cohesive wood failure percentage shall be determined in accordance with the method given in EN 314-1.

Annex C
(normative)

Formaldehyde classes

Where formaldehyde-containing materials, particularly aminoplastic resins, have been added to the product as a part of the production process, the product shall be tested and classified into one of two classes: E1 or E2.

The test requirements for both initial type testing and factory production control/continuous surveillance are laid down in Tables C.1 and C.2.

NOTE Products of class E1 can be used without causing an indoor air concentration greater than $0,1 \times 10^{-6}$ (ppm) HCHO in conditions according to ENV 717-1.

The test requirement does not apply to products to which no formaldehyde containing materials were added during production or in post-production processing. These may be classified E1 without testing.

The limit value for the formaldehyde classes E1 and E2 are given in Tables C.1 and C.2.

Table C.1 – Formaldehyde class E1 for laminated veneer lumber

		Unfaced	Coated or overlaid
Initial type testing [a)]	Test method	ENV 717-1	
	Requirement	Release ≤ 0,124 mg/m^3 air	
Factory production control	Test method	EN 717-2	
	Requirement	Release ≤ 3,5 mg/m^{2}h or ≤ 5 mg/m^{2}h within 3 days after production	

[a)] For established products, initial type testing may also be done on the basis of existing data with EN 717-2 testing, either from factory production control or from external inspection.

Table C.2 – Formaldehyde class E2 for laminated veneer lumber

			Unfaced	Coated or overlaid
Initial type testing	either	Test method	ENV 717-1	
		Requirement	Release > 0,124 mg/m^3 air[a)]	
	or	Test method	EN 717-2	
		Requirement	Release > 3,5 mg/m^{2}h to ≤ 8 mg/m^{2}h or > 5 mg/m^{2}h to ≤ 12 mg/m^{2}h within 3 days after production	
Factory production control		Test method	EN 717-2	
		Requirement	Release > 3,5 mg/m^{2}h to ≤ 8 mg/m^{2}h or > 5 mg/m^{2}h to ≤ 12 mg/m^{2}h within 3 days after production	

[a)] The corresponding upper requirement limits for E2-products are found from the EN 717-2 factory production/external control tests.

Annex ZA
(informative)

Clauses of this document addressing the provisions of the EU Construction Products Directive

Z.1 Scope and relevant characteristics

This document has been prepared under the mandate M 112 "Structural timber products and ancillaries" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this document shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the laminated veneer lumber covered by this annex for the intended uses indicated herein.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended use can be applicable to the laminated veneer lumber falling within the scope of this document.

NOTE In addition to any specific clauses relating to dangerous substances contained in this document, there may be other requirements applicable to the products falling within its scope (for example transposed European legislation and national laws, when and where they apply. An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (assessed through http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This annex has the same scope as clause 1 of this document. It establishes the conditions for the CE marking of laminated veneer lumber intended for the uses indicated in Table Z.1 and the relevant clauses applicable.

Table Z.1 – Relevant clauses

Product Intended uses	Structural glued laminated products - Laminated veneer lumber Buildings and bridges		
Essential characteristics	**Requirement clauses in this document**	**Levels and/or classes**	**Notes:**
Modulus of elasticity	4.5.2	-	
Bending strength	4.4.2 and 4.4.3	-	
Compression strength	4.4.6 and 4.4.7	-	
Tension strength	4.4.4 and 4.4.5	-	
Shear strength	4.4.8 and 4.4.9	-	
Bonding strength	4.2	-	
Reaction to fire	4.8	A1 – F	
Release of formaldehyde	4.9	-	
Durability	4.10	-	

The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see Z.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

Z.2 Procedure for attestation of conformity of laminated veneer lumber

Z.2.1 System of attestation of conformity

The system of attestation of conformity of laminated veneer lumber indicated in Table Z.1, as given in Annex III of the mandate for "Structural timber products and ancillaries" is shown in Table Z.2 for the intended uses and relevant levels and classes.

Table Z.2 – System of attestation of conformity

Products	Intended uses	Levels or classes	Attestation of conformity system
Structural glued laminated products - Laminated veneer lumber	Buildings and bridges	A1 - F	1
System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without audit-testing of samples			

The attestation of conformity of the laminated veneer lumber in Table Z.1 shall be based on the evaluation of conformity procedures indicated in Table Z.3 resulting from application of the clauses of this document indicated therein.

Table Z.3 – Assignment of evaluation of conformity tasks for laminated veneer lumber under system 1

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (F.P.C)	Parameters related to all relevant characteristics of Table Z.1	5.3
	Further testing of samples taken at factory	All relevant characteristics of Table Z.1	5.3
	Initial type testing by a notified test lab	Reaction to fire in Classes A1-E	5.2
	Initial type testing or assessment by the manufacturer	Modulus of elasticity Bending strength Compression strength Tension strength Shear strength Release of formaldehyde Durability	5.2
Tasks under the responsibility of the product certification body	Initial type testing	Bonding strength	5.2
	Initial inspection of factory and the factory production control	Parameters related to all relevant characteristics of Table Z.1	5.3
	Continuous surveillance, assessment and approval of the factory production control	Parameters related to all relevant characteristics of Table Z.1, in particular: Reaction to fire Bending strength Compression strength Tension strength Shear strength Bonding strength Release of formaldehyde	5.3

Z.2.2 EC Certificate and Declaration of conformity

When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC certificate of conformity), which entitles the manufacturer to affix of the CE marking. The certificate shall include:

- name, address and identification number of the certification body,
- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production,
- description of the product (type, grade, identification,...),
- provisions to which the product conforms (i.e. annex ZA of this document),
- particular conditions applicable to the use of the product (for example provisions for use under certain conditions),
- the number of the certificate,
- conditions and period of validity of the certificate, where applicable,
- name of, and position held by, the person empowered to sign the certificate.

In addition the manufacturer shall draw up a declaration of conformity (EC Declaration of conformity) including the following:

- name and address of the manufacturer, or his authorised representative established in the EEA,
- name and address of the certification body,
- description of the product (type, grade, identification,...) and a copy of the information accompanying the CE marking,

NOTE Where some of the information required for the Declaration is already given in the CE marking information, it does not need to be repeated.

- provisions to which the product conforms (i.e. annex ZA of this document) and a reference to the ITT report(s) and factory production control records (if appropriate),
- particular conditions applicable to the use of the product (for example provisions for use under certain conditions),
- number of the accompanying EC Certificate of conformity,
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The above-mentioned declaration and certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

Z.3 CE Marking

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the laminated veneer lumber product itself as well as on the accompanying commercial documents.

The following information on the product and its essential characteristics shall accompany the CE marking symbol affixed on the product itself:

- identification number of the certification body,
- name or identification mark of the producer,
- the last two digits of the year in which the marking is affixed,
- number of the EC Certificate of conformity or factory production control certificate;
- reference to this document;
- description of the product (i.e. Structural LVL).

Figure Z.1 gives an example of the information to be given on the product.

CE 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC* *Identification number of the certification body*
LVL Company Ltd 03 01234-CPD-3210	*Name or identifying mark of the producer* *Last two digits of the year in which the marking is affixed* *Certificate number*
EN 14374 Structural LVL	*Number of this document* *Product*

Figure Z.1 – Example CE marking information to be given on the product

The following information on the product and its essential characteristics shall accompany the CE marking symbol in the accompanying commercial documents:

- identification number of the certification body,
- name or identification mark and registered address of the producer,
- the last two digits of the year in which the marking is affixed,
- number of the EC Certificate of conformity or factory production control certificate,
- reference to this document,
- description of the product (i.e. Structural LVL and 5%-fractile of density) and intended use,
- information on the relevant essential characteristics in Table Z.1.

The "No Performance Determined" (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements.

Figure Z.2 gives an example of the information to be given in the accompanying commercial documents.

CE	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC*
01234	*Identification number of the certification body*
LVL Company Ltd, PO Box 12, IS-1234	*Name or identifying mark and registered address of the producer*
03	*Last two digits of the year in which the marking is affixed*
01234-CPD-3210	*Certificate number*
EN 14374	*Number of this document*
Structural LVL, density 450 kg/m^3 for Building and Bridge applications	*Product and intended use*
Bending strength:	*Information on relevant essential characteristics*
Edgewise	40 N/mm^2
Size effect parameter	0,15
Flatwise	40 N/mm^2
Tension strength:	
Parallel to grain	30 N/mm^2
Perp. to grain, edgewise	NPD
Perp. to grain, flatwise	NPD
Compression strength:	
Parallel to grain	30 N/mm^2
Perp. to grain, edgewise	5 N/mm^2
Perp. to grain, flatwise	3 N/mm^2
Shear strength:	
Edgewise	5 N/mm^2
Flatwise	4 N/mm^2
Modulus of elasticity:	
Parallel to grain (mean)	11 000 N/mm^2
Parallel to grain (5%-fractile)	9 000 N/mm^2
Perp. to grain, edgewise (mean)	NPD
Perp. to grain, flatwise (mean)	NPD
Shear modulus:	
Edgewise (mean)	600 N/mm^2
Flatwise (mean)	400 N/mm^2
Reaction to fire class	D-s1,d0
Release of formaldehyde class	E1
Durability class	4

Figure Z.2 – Example CE marking information to be given in the accompanying commercial documents

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

Bibliography

[1] prEN 14279, *Laminated Veneer Lumber (LVL) - Definitions, classification and specifications*

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