SLOVENSKI STANDARD

SIST EN 14915:2013+A1:2017

01-september-2017

Nadomešča:

SIST EN 14915:2013

Notranje in zunanje obloge iz masivnega lesa - Lastnosti, zahteve in označevanje

Solid wood panelling and cladding - Characteristics, requirements and marking

Wand- und Deckenbekleidungen aus Massivholz - Eigenschaften, Anforderungen und Kennzeichnung

Lambris et bardages en bois - Caractéristiques, exigences et marquage

Ta slovenski standard je istoveten z: EN 14915:2013+A1:2017

ICS:

79.080	Polizdelki iz lesa	Semi-manufactures of timber

SIST EN 14915:2013+A1:2017 en,fr,de

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14915:2013+A1

June 2017

ICS 79.080

Supersedes EN 14915:2013

English Version

Solid wood panelling and cladding - Characteristics, requirements and marking

Lambris et bardages en bois - Caractéristiques, exigences et marquage

Wand- und Deckenbekleidungen aus Massivholz - Eigenschaften, Anforderungen und Kennzeichnung

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Ref. No. EN 14915:2013+A1:2017 E

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European foreword

This document (EN 14915:2013+A1:2017) 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of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by March 2019.

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 includes Amendment 1 approved by CEN on 10 April 2017.

This document supersedes A1⟩ EN 14915:2013 ⟨A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1⟩ ⟨A1.

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).

A1⟩ For relationship with EU Construction Products Regulation (CPR), see informative Annex ZA, which is an integral part of this standard. ⟨A1

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard defines and specifies the relevant characteristics and the appropriate test methods to determine these characteristics for solid wood products to be used as panelling and cladding (including siding) for:

— wall and ceiling panelling for internal use,

— wall and ceiling cladding for external uses.

[A1] It provides for the assessment and verification of constancy of performance and the requirements for marking these products. [A1]

This European Standard does not cover panels intended for use as stiffening elements.

This European Standard does not cover suspended ceiling in wood panelling and cladding.

This European Standard does not cover the processes for treatment, surface coating or modification.

This European standard does not cover products which are produced from laminated layer section.

This European Standard covers treated, untreated and surface coated products, including those made of thermally or chemically modified wood, as well as finger jointed and edge glued products.

NOTE Prescriptions for surface coating and treatment can be found in documents valid in the place of use.

This European Standard covers products in compliance with EN 14519, EN 15146 and EN 14951, and other solid timber products manufactured for use as panelling and cladding.

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.

EN 335:2013, *Durability of wood and wood-based products - Use classes: definitions, application to solid wood and wood-based products*

[A1] EN 350, *Durability of wood and wood-based products - Testing and classification of the durability to biological agents of wood and wood-based materials* [A1]

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

EN 599-2, *Durability of wood and wood-based products — Performance of preventive wood preservatives as determined by biological tests — Part 2: Classification and labelling*

EN 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 844-9:1997, *Round and sawn timber - Terminology - Part 9: Terms relating to features of sawn timber*

EN 1309-1:1997, *Round and sawn timber - Method of measurement of dimensions - Part 1: Sawn timber*

EN 12664, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products of medium and low thermal resistance*

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

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

EN 13756:2002, *Wood flooring - Terminology*

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

EN ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354)*

EN ISO 10456:2007, *Building materials and products - Hygrothermal properties -Tabulated design values and procedures for determining declared and design thermal values (ISO 10456:2007)*

EN ISO 11654, *Acoustics — Sound absorbers for use in buildings — Rating of sound absorption (ISO 11654)*

EN ISO 12572, *Hygrothermal performance of building materials and products - Determination of water vapour transmission properties (ISO 12572)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13756:2002, EN 844-9:1997 and EN 1309-1:1997 and the following apply.

3.1
siding
North American term, synonymous with exterior cladding; material attached to exterior of the building wall where length predominates over the other two dimensions, having reduced thickness

3.2
assembled panelling/cladding
products put together, according to their method of assembly as given by the manufacturer (e.g. joined tongue to groove), to form a panelling or cladding assembly

〉A1〈 Note 1 to entry: For the purpose of this document panelling relates to interior applications; cladding to exterior applications 〉A1〈

〉A1〈

4 Durability against biological attack

4.1 Biological durability

〉A1〈 If sapwood is not specifically excluded this shall be identified. 〉A1〈

If the species is listed in 〉A1〈 EN 350 〉A1〈, the biological durability shall be as given therein; otherwise it shall be assessed in accordance with 〉A1〈 EN 350 〉A1〈.

4.2 [A1] Wood [A1] treated against biological attack

4.2.1 General

[A1] Wood [A1] treated against biological attack shall meet regulatory requirements valid in the place of use of the products.

Preservative treated products shall be defined by:

— use class in accordance with EN 335,

— wood preservative in accordance with EN 599-2,

— penetration class in accordance with EN 351-1,

— retention of preservative in accordance with EN 351-1.

4.2.2 [A1] Wood [A1]

Any machining, boring, planing, etc. shall be completed before preservative treatment. In case of wane, the bark shall be removed.

4.2.3 Preservatives

Wood preservatives used shall conform to the performance requirements given in EN 599-2 appropriate for the use class.

4.2.4 Penetration

The minimum penetration shall be declared in terms of penetration classes listed in EN 351-1.

4.2.5 Retention

The mean retention in the analytical zone (see EN 351-1) shall be equal to or greater than the retention requirement for the preservative used in the declared use class.

[A1]

5 Testing, assessment and sampling methods

5.1 Reaction to fire

The reaction to fire performance of a solid wood panelling and cladding product, whether treated or not, shall be classified in accordance with EN 13501-1, after being tested in accordance with the test standards given therein and the relevant reaction to fire class declared.

When tested, the product shall be mounted and fixed in accordance with the same mounting and fixing conditions used for obtaining the classification of products without the need of testing (i.e. those in relevant footnotes a to j of Table 1). [A1] Given that climatic conditions provided for testing in EN 13501-1 represent average interior climatic conditions, as an alternative for exterior use to represent average exterior conditions, the test specimen may be conditioned at 20 °C and 65 % relative humidity. [A1]

In case the product meets the requirements given in Table 1[1)] it may be classified without the need for further testing (CWFT) in one of the appropriate classes shown therein. In this case, the relevant reaction to fire class shall be declared (together with the corresponding mean density of the product, the overall thickness of the product as well as the end-use conditions).

Table 1 — Classes of reaction to fire performance

Material	Product detail [e]	Minimum mean density [f] (kg/m³)	Minimum thickness total/ minimum [g] (mm)	End-use condition [d]	Class [c]
Panelling and cladding [a]	Wood pieces with or without tongue and groove and with or without profiled surface	390	9/6	Without air gap or with closed air gap behind	D - s2,d 2
			12/8		D - s2,d 0
Panelling and cladding [b]	Wood pieces with or without tongue and groove and with or without profiled surface	390	9/6	With open air gap ≤ 20 mm behind	D - s2,d 0
			18/12	Without air gap or with open air gap behind	
Wood ribbon elements [h]	Wood pieces mounted on a support frame [i]	390	18	Surrounded by open air on all sides [j]	D - s2,d 0

[a] Mounted mechanically on a wood batten support frame, with the gap closed or filled with a substrate of at least class A2 - s1, d0 with minimum density of 10 kg/m³ or filled with a substrate of cellulose insulation material of at least class E and with or without a vapour barrier behind. The wood product shall be designed to be mounted without open joints.

[b] Mounted mechanically on a wood batten support frame, with or without an open air gap behind. The wood product shall be designed to be mounted without open joints.

[c] Class as provided for in Table 1 of the annex to Commission Decision 2000/147/EC.

[d] An open air gap may include possibility for ventilation behind the product, while a closed air gap will exclude such ventilation. The substrate behind the air gap shall be of at least class A2 - s1, d0 with a minimum density of 10 kg/m³. Behind a closed air gap of maximum 20 mm and with vertical wood pieces, the substrate may be of at least class D - s2, d0.

[e] Joints include all types of joints, e.g. butt joints and tongue and groove joints.

[f] Conditioned according to EN 13238.

[g] As illustrated in Figure 1 below. Profiled area of the exposed side of the panel not more than 20 % of the plane area, or 25 % if measured at both exposed and unexposed side of the panel. For butt joints, the larger thickness applies at the joint interface.

[h] Rectangular wood pieces, with or without rounded corners, mounted horizontally or vertically on a support frame and surrounded by air on all sides, mainly used close to other building elements, both in interior and exterior applications.

[i] Maximum exposed area (all sides of rectangular wood pieces and wood support frame) not more than 110 % of the total plane area, see Figure 2.

[j] Other building elements closer than 100 mm from the wood ribbon element (excluding its support frame) shall be of at least class A2 - s1, d0, at distances 100 mm - 300 mm of at least class B - s1, d0 and at distances more than 300 mm of at least class D - s2, d0.

1) This table and Figures 1 and 2 correspond to Table 2 and Figures a and b respectively of the Commission Decision 2006/213/EC (OJEU L79/27 of 16.3.2006).

Table 1 *(continued)*

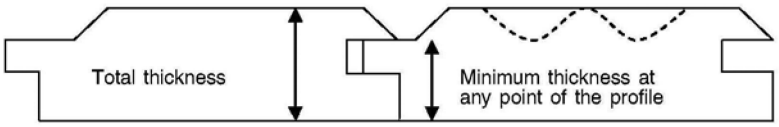
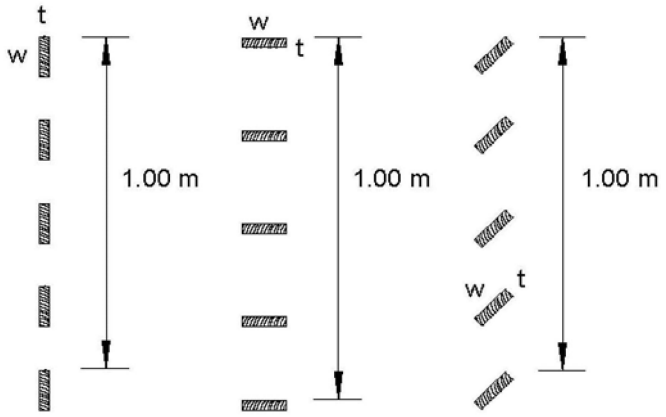


Figure 1 — Profiles for solid wood panelling and cladding



Maximum exposed area of wood ribbon element:

$2n\,(t+w) + a \leq 1{,}10$

where

n is number of wood pieces per metre

t is thickness of each wood piece, in metre

w is width of each wood piece, in metre

a is exposed area of wood support frame (if any), in m^2, per m^2 of wood ribbon element

Figure 2 — Maximum exposed area

5.2 Dangerous substances

5.2.1 Formaldehyde release[2)]

The formaldehyde release of solid wood panelling and cladding products shall be determined according to Annex C. The declared values 〚A1〛 shall be 〈A1〉 expressed in term of classes.

5.2.2 Content of pentachlorophenol

Solid wood panelling and cladding as such, without chemical treatment, without adhesive, without coating or finishing, does not contain PCP. If the product contains raw materials that include PCP (may concern only soft wood treated against blue stain), then the product shall be tested in accordance with CEN/TR 14823. In case the value of 5×10^{-6n} is exceeded, the indication "PCP > 5×10^{-6n} shall be added to the marking. In case the value is less than 5×10^{-6n}, the indication PCP ≤ 5×10^{-6n} shall be added to the marking.

2) Products CE marked according to this European Standard emitting formaldehyde above class E1 might be prohibited in some Member States.

5.3 Release of other dangerous substances

National regulations on dangerous substances may require, verification and declaration on release, and sometimes content, of other dangerous substances, in addition to those dealt with in other clauses, when construction products covered by this standard are placed on those markets.

In the absence of European harmonised test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through: http://ec.europa.eu/enterprise/construction/cpd-ds/.

5.4 Water vapour permeability

If water vapour permeability is required, either the water vapour resistance factor of the product tested as assembled panelling shall either be taken from Table 2 or, if the manufacturer wishes to declare a better value, obtained by testing the product as assembled panelling according to EN ISO 12572.

Table 2 — Characteristic values of water vapour permeability of wood as given in EN ISO 10456:2007[3], Table 3

Wood type	Density [a] kg/m³	Water vapour resistance factor μ	
		wet	dry
timber	450	20	50
	500	20	50
	700	50	200

[a] For other densities, interpolation is possible.

5.5 Sound absorption

If the sound absorption coefficient of a product is required, it shall either be taken from Table 3 or, if the manufacturer wishes to declare a better value, obtained by testing the product as assembled panelling to
EN ISO 354 and the result expressed according to EN ISO 11654.

NOTE The sound absorption depends on finishing, geometrical characteristics, etc.

Table 3 — Sound absorption coefficient

Wood type	Sound absorption coefficient	
	Frequency range 250 Hz to 500 Hz	Frequency range 1 000 Hz to 2 000 Hz
Solid wood panelling and cladding	0,10	0,30

[3]) EN ISO 10456 is currently impacted by EN ISO 10456:2007/AC:2009.

5.6 Thermal conductivity

The thermal conductivity shall be determined only for uses subject to thermal insulation requirements for solid wood panelling [A1] deleted text [A1] for use on internal walls and ceilings. It shall either be determined according to EN 12664 or given by using tabulated values related to density as shown in Table 4, taken from EN ISO 10456.

The thermal resistance R (m² K/W) of solid wood panelling and cladding of uniform thickness is given by the formula:

$$R = \frac{t}{\lambda}$$

where

t is the uniform minimum thickness of the wood panelling and cladding, in metres;

λ is the thermal conductivity, in W/m·K.

Table 4 — Design thermal conductivity values (λ) (in conformity with EN ISO 10456)

Wood type	**Mean density[a] ρ at a moisture content of 12 % in kg/m³**	**Thermal conductivity λ in W/(m·K) *(design value)***
Solid wood	300	0,09
	400	0,11
	500	0,13
	600	0,15
	700	0,18
	1 000	0,24
[a] For densities not given in this table, λ may be found by interpolation.		

5.7 Resistance to fixing

Resistance to fixing of solid wood is dependent on species and with higher density hardwoods may necessitate pre-drilling, especially if the wood has been dried. For wood species with an average density greater than 600 kg/m³ (at 20 % moisture content) the manufacturer shall indicate whether pre-drilling is either advisable or necessary.

When mechanically fixed (by means of nails, anchors, etc.) to walls/ceiling, the panelling/cladding shall be designed to take into account its own weight and other possible loads acting on it, e.g. wind load.

[A1]

6 Assessment and verification of constancy of performance - AVCP

6.1 General

The compliance of solid wood panelling product and cladding product with the requirements of this standard and with the performance declared by the manufacturer in the DoP shall be demonstrated by:

determination of the product-type on the basis of type testing;

factory production control by the manufacturer, including product assessment.