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Declaration of Performance

In accordance with Annex III of Regulation (EU) no. 305/2011

Product identification code: ZDI05EUCLT

CLT – Cross Laminated Timber

1. Intended use
Intended for use as a load-bearing, bracing or also non-load-bearing element in buildings or timber structures. May only be used in structures with predominantly static traffic loads in accordance with Eurocode 5 (EN 1995).
2. Manufacturer
Stora Enso Wood Products Oyj
PL 309; 00101 Helsinki, Finland
3. Name and address of authorised representative
Stora Enso WP HV s.r.o.
Nádražní 66; CZ-58263 Ždírec nad Doubravou, Czech Republic
4. System for assessing and examining the constancy of performance
System 1
5.
 - a) Harmonised standard: not relevant
Notified body: not relevant
 - b) European Assessment Document: European Assessment Document EAD 130005-00-0304 – “Solid wood construction elements in the form of slabs or panels for load-bearing components in structures”, december 2022 version
European Technical Assessment: ETA-14/0349 from 15.12.2022
Technical assessment body: Österreichisches Institut für Bautechnik (Austrian Institute for Structural Engineering), Schenkenstraße 4, 1010 Vienna, Austria
Notified body: Holzforschung Austria 1359
6. Declared performance

Number of layers:	$3 \leq n \leq 20$
Dimensions:	thickness 42 to 360 mm, width < 3.50 m, length ≤ 16.50 m
Wood type:	WPPA
Sorting:	dry graded
Adhesive:	PUR type 1
Reaction to fire:	D-s2, d0
Thermal conductivity λ :	0,12 W/mK
Service class:	1 and 2 according to EN 1995-1-1
Specific heat capacity c_p :	1600 J/(kgK)
Resistance to vapour diffusion μ :	20 to 50
Durability:	According to EN 350-2
Strength class:	C24 according to EN 338 ($\geq 90\%$ C24/T14 / $\leq 10\%$ C16/T11)
Timber treatment:	NPD
Release of hazardous substances:	NPD

7. Specific technical documents

Requirement	Verification method	Numerical value/standard	
Mechanical resistance and stability			
1. Mechanical actions perpendicular to the panel [1]			
Strength class of lamellas	EN 338	C24 / T14	
Modulus of elasticity:			
• parallel to the grain direction $E_{0, \text{mean}}$	EAD 130005-00-304, 2.2.1.2	12 000 N/mm ² [2]	
• perpendicular to the grain direction $E_{90, \text{mean}}$	EN 338	370 N/mm ²	
Shear modulus:			
• parallel to the grain direction $G_{090, \text{mean}}$	EN 338	690 N/mm ²	
• perpendicular to the grain direction, rolling shear modulus $G_{9090, \text{mean}}$	EAD 130005-00-0304, 2.2.1.1	50 N/mm ²	
Bending strength:			
• parallel to the grain direction $f_{m, k}$	EAD 130005-00-0304, 2.2.1.1	C24, $1/k_{\text{sys}} \cdot 26.4$ N/mm ² [3]	
Tensile strength:			
• perpendicular to the grain direction $f_{t, 90, k}$	EN 338	0.12 N/mm ²	
Compressive strength:			
• perpendicular to the grain direction $f_{c, 90, k}$	EN 338	2,5 N/mm ²	
Shear strength:			
• parallel to the grain direction $f_{v, 090, k}$	EN 338	4,0 N/mm ²	
• perpendicular to the grain direction (rolling shear strength) $f_{v, 9090, k}$	EAD 130005-00-0304, 2.2.1.3	spruce: min. {1.25; 1.45 - $t_q/100$ } [4] pine: min. {1.70; 1.90 - $t_q/100$ } [4] REX: min. {1,25; 1,45 - $t_q/100$ } [4]	
Comments: [1] CLT – Cross Laminated Timber with transverse layers of lamellae type “REX” may be considered equivalent to C24/T14 [2] $E_{0, \text{mean}} = 6800$ N/mm ² for lamellae type “REX” [3] $k_{\text{sys}} = \max. \{1.0; 1.1 - 0,025 \cdot n\}$, (n = number of boards in the cover layer) [4] t_q = greatest transverse layer thickness in the cross-section			
2. Mechanical actions in the panel plane			
Strength class of lamellas	EN 338	C24 / T14	
Modulus of elasticity:			
• parallel to the grain direction $E_{0, \text{mean}}$	EAD 130005-00-0304, 2.2.1.1	12 000 N/mm ²	
Shear modulus:			
• parallel to the grain direction $G_{090, \text{mean}}$	EAD 130005-00-0304, 2.2.1.3	460 N/mm ²	
Bending strength:			
• Parallel to the grain direction $f_{m, k}$	EAD 130005-00-0304, 2.2.1.1	24 N/mm ²	
Tensile strength:			
• Parallel to the grain direction $f_{t, 0, k}$	EN 338	14,5 N/mm ²	
Compressive strength:			
• Parallel to the grain direction $f_{c, 0, k}$	EN 338	21 N/mm ²	
Shear strength:			
• Parallel to the grain direction $f_{v, 090, k}$	EAD 130005-00-0304, 2.2.1.3	3.9 N/mm ²	
3. Other mechanical actions			
Creep and duration of load	EN 1995-1-1		
Dimensional stability	Moisture content during use shall not change to such an extent that adverse deformations occur.		
Fasteners	According to EN 1995-1-1, the grain direction of the cover layer is taken as a reference.		
4. Resistance to fire			
Charring rate			
- Charring of the cover layer	EAD 130005-00-0304	Floor/Roof 0.65 mm/min	Wall 0.63 mm/min
- Charring of more layers than the cover layer		1.3 mm/min [5]	0.86 mm/min
Comments: [5] until 25 mm of charring. Afterwards the charring rate 0.65 mm/min applies up to the next glue line			

The performance of the product specified above corresponds to the declared performance. The above-mentioned manufacturer is solely responsible for creating this Declaration of Performance in accordance with Regulation (EU) no. 305/2011.

Zdirec, 01.02.2023

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Martin Brebis
Mill Manager Zdirec