Declaration of Performance

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

Product identification code: GRU04EUCLT

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 Timber AB
   Timmervägen 2, SE-664 33 Grums, Sweden

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 ≤ n ≤ 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 (≥ 90% C24/T14 / ≤ 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 $E_{0, mean}$	EAD 130005-00-304, 2.2.1.2	12 000 N/mm² [2]
• perpendicular to the grain direction $E_{90, mean}$	EN 338	370 N/mm²
Shear modulus • parallel to the grain direction $G_{090mean}$	EN 338	690 N/mm²
• perpendicular to the grain direction, rolling shear modulus $G_{9090, mean}$	EAD 130005-00-0304, 2.2.1.1	50 N/mm²
Bending strength: • parallel to the grain direction $f_{m, k}$	EAD 130005-00-0304, 2.2.1.1	C24, $1/k_{sys}$ ▪26.4 N/mm² [3]
Tensile strength: • perpendicular to the grain direction $f_{t, 90, k}$	EN 338	0.12 N/mm²
Compressive strength: • perpendicular to the grain direction $f_{c, 90, k}$	EN 338	2,5 N/mm²
Shear strength: • parallel to the grain direction $f_{v,090 k}$	EN 338	4,0 N/mm²
• 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] $E_{O, mean}$= 6800 N/mm² for lamellae type “REX” [3] k_{sys} = max. {1.0;1.1 – 0,025 ▪ 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 $E_{0, mean}$	EAD 130005-00-0304, 2.2.1.1	12 000 N/mm²
Shear modulus: • parallel to the grain direction $G_{090, mean}$	EAD 130005-00-0304, 2.2.1.3	460 N/mm²
Bending strength: • Parallel to the grain direction $f_{m, k}$	EAD 130005-00-0304, 2.2.1.1	24 N/mm²
Tensile strength: • Parallel to the grain direction $f_{t, 0, k}$	EN 338	14,5 N/mm²
Compressive strength: • Parallel to the grain direction $f_{c, 0, k}$	EN 338	21 N/mm²
Shear strength: • Parallel to the grain direction $f_{v, 090,k}$	EAD 130005-00-0304, 2.2.1.3	3.9 N/mm²
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 - Charring of more layers than the cover layer	EAD 130005-00-0304	Floor/Roof 0.65 mm/min 1.3 mm/min [5]
		Wall 0.63 mm/min 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.

Grums, 01.02.2023

Martin Lundqvist
Mill Manager Gruvön