

From wood to wonders.

Cross Laminated Timber

The building material of the future.



01 At a glance

Applications

- Single and multiple family houses
- Multi-storey residential buildings
- Industrial and commercial buildings
- Modules and systems
- Office buildings, schools and nurseries
- Urban densification
- Carports

Fields of use

- Floors
- Roofs
- Walls
- Shear walls for lateral load transmission
- Beams

Benefits

- Possibility to combine loads with all of HASSLACHER Timber Group's products
- Sanded or calibrated surfaces for all qualities
- Flexible dimensions up of to 3.20 m x 20.0 m
- Order size = invoice size above a width of 2.20 m
- Standard element with a width of 1.25 m and a length of 24 m without general finger joint
- Pleasant and comfortable room climate
- Fast and easy assembly
- Lower self-weight than reinforced concrete
- Highest earthquake safety ratings
- High fire and chemical resistance
- High performance in terms of thermal insulation
- Ecologically sustainable building materials

02 Overview

Product standard

ETA-12/0281

Surface qualities

Excellentsurface Visual quality Industrial visual quality Industrial quality

On request, cover lamellas can also be edge bonded.

Cross sections

Large size Thickness: 80 mm to 400 mm 90 mm to 280 mm Width: up to 3.20 m Length: up to 20 m

Standard size 60 mm on request 60 mm and 80 mm upon request 1.25 m up to 24 m

Strength classes

CL26E11.8 CL36E14.7

Wood species

- Spruce/fir
- Pine
- Larch
- Swiss stone pine, fir, hardwoods (on request)

Certificates

The current certificates are available in the download area of our website at HASSLACHER.COM.

Sustainability

The HASSLACHER Group stands for a careful use of wood as a resource. Our raw materials come from sustainable and controlled forestry. Our locations are certified according to the strict PEFC[™] standards.



03 Technical data

Bonding

Melamine resin adhesive with white glue line, Adhesive type I according to EN 301 approved for gluing of loadbearing and non-loadbearing timber components, both indoors and outdoors

Lamellas

Thickness: 19 mm to 45 mm

Strength: CL26E11.8 100 % C24/L25/T14 in the top layers max. 30 % C16/L17/T11 in the middle layers CL36E14.7 100 % C40/L40/T26 in the top layers 100 % C24/L25/T14 in the middle layers

Moisture content

11 % \pm 2 % at dispatch

Density

Spruce: on average ca. 450 kg/m³ bis 500 kg/ m^3

Thermal conductivity

 $\lambda = 0.12 \text{ W/mK}$

Thermal capacity

1600 J/kgK

Diffusion resistance

According to EN ISO 10456 m = 50 (dry) to 20 (wet)

Formaldehyde emissions

E1 according to EN 717-1 (<0.1 ppm) Actual measured value: < 0.02 ppm

Fire behaviour

D-s2, d0 $$\rm D_{fl}\mbox{-}s1$ when used as floor covering

Structural fire resistance

First layer: 0.65 mm/min. Every additional layer: 0.80 mm/min.

Shrinking and swelling behaviour

Out-of-plane direction $\alpha_{u,90} = 0.24$ % per 1 % change in moisture content

In-plane direction $\alpha_{u,90} = 0.01$ % per 1 % change in moisture content

Air tightness

Joints, component edges, narrow faces and soffits, installations, etc. must be hermetically sealed

Size tolerances

according to DIN 18203-3

Service classes

Service class 1 heated interior Service class 2 roofed outdoor area

04 Quality description

Characteristics

Description

Excellentsurface

Consists of finger-jointed lamellas, whereby the

cover lamellas have a special lay-up including a

Visual quality

Consists of finger-jointed lamellas of a single wood

species, which have a homogeneous appearance

cross layer. Wood grain and texture result in a very in texture and grain. Field of use: Exposed floors in homogeneous appearance. Appearance of gaps is the luxury market. Growth-related features occur remarkably lessened. Repairs through wood patches in reduced form. Non-conforming growth-related features may be repaired through wood patches. are permissible. Wood species for the cover layer On request, various soft- and hardwood species are On request, spruce, larch, pine, fir and hardwood. available. Surface Sanded Sanded Gap width on delivery Up to maximum of 1 mm Up to maximum of 1 mm Knots Sound knots, isolated black knots are permissible, Sound knots, isolated black branches are permissible, edge knots and falling knots of up to 10 mm are edge knots and falling knots of up to 15 mm are permissible permissible Pitch pockets are permissible up to 3 mm x 50 mm are permissible up to 5 mm x 70 mm (or the equivalent in mm²). (or the equivalent in mm²). Patches Permissible Permissible Blue stains and red stripes Slight discolourations of less than 5 % are Slight discolourations covering 5 % of the surface permissible, which are predominantly balanced out. area are permissible Insect infestation Not permissible Not permissible Ingrown bark Not permissible Not permissible Piths Widely free form ingrown bark Permissible Cracks A crack width up to 1 mm are permissible Up to 1 mm are permissible **Compression wood** which are predominantly balanced out Up to 40 % of the surface area Soft rot Not permissible Not permissible Mistletoe Not permissible Not permissible Wood moisture content Maximum 10 % ± 2 % Maximum 10 % \pm 2 % **Board thicknesses** Specific lay-up of the cover lamella 19 mm to 45 mm **Board widths** 80 mm to 200 mm; only boards with identical widths 80 mm to 200 mm; only boards with identical widths are used in the cover layer. are used in the cover layer. Type of cutting The cut is heartwood-free Centre boards Scope of application The specified surface qualities are only valid for the outer layer(s), and thus not applicable to the cross laminated timber's narrow faces. The indicated surface qualities are valid upon delivery. Crack and gap formation may occur in use, in particular at extreme climatic conditions. Sanded surface The surfaces are sanded or calibrated up to a panel width of 3.20 m, or a panel thickness of 300 mm. In dependence of the panel format or on the cover layer's orientation the element may be sanded perpendicular to grain direction. Edge bonding Edge-wise bonding of the boards of the longitudinal cover layer on request.



Characteristics

Industrial-visual quality

Description

Surfaces consist of a single wood species; colour differences, wood grain and texture are categorically less relevant. Used as to cover industrial hall constructions. Non-conforming growth-related features may be repaired by means of wood patches. Industrial quality possible on request.

Industrial quality

No visual requirements at all; the surface is assumed to be covered with additional materials. Various wood species are possible for cover layer.

Wood species for the cover lay	er Spruce/fir, pine	Spruce/fir, pine
Surface	Sanded	Calibrated
Gap width on delivery	Up to maximum of 2 mm	Up to maximum of 3 mm
Knots	Sound knots, black knots of up to 20 mm are permissible, broken edge knots and falling knots up to 25 mm permissible.	Restrictions are in accordance to the corresponding strength grading
Pitch pockets	Are permissible up to 6 mm x 80 mm (or the equivalent in mm²).	No restrictions
Patches	Permissible	Permissible
Blue stains and red stripes	Discolouration covering up to 10 % of the surface area is permissible	No restrictions
Insect infestation	Not permissible	Worm grooves of up to 2 mm of diameter are permissible
Ingrown bark	Permissible if isolated	Permissible
Piths	Permissible	Permissible
Cracks	Up to 3 mm are permissible	Restrictions are in accordance to the corresponding strength grading
Compression wood	Restrictions are in accordance with the corresponding strength grading	Restrictions are in accordance with the corresponding strength grading
Soft rot	Not permissible	Not permissible
Mistletoe	Not permissible	Not permissible
Wood moisture content	Maximum 12 % ± 2 %	Maximum 12 % ± 2 %
Board thicknesses	19 mm to 45 mm	19 mm to 45 mm
Board widths	80 mm to 240 mm; boards with varying widths in one layer are possible.	80 mm to 280 mm; boards with varying widths in one layer are possible.
Type of cutting	No restrictions	No restrictions
Scope of application	The specified surface qualities are only valid for the ou laminated timber's narrow faces. The indicated surface formation may occur in use, in particular at extreme cli	ter layer(s), and thus not applicable to the cross qualities are valid upon delivery. Crack and gap matic conditions.
Sanded surface	The surfaces are sanded or calibrated up to a panel wi In dependence of the panel format or on the cover lay perpendicular to grain direction.	dth of 3.20 m, or a panel thickness of 300 mm. er's orientation the element may be sanded
Edge bonding	Edge-wise bonding of the boards of the longitudinal co	ver layer on request.

05 Product range

Panel lay-ups

Туре	Thickness (mm)	Layers			Pa	anel lay-uj mm	os			Width (m)	Length (m)	Mass (kg/m²)
BSP 60	60	3			20	20	20			2.20 – 3.20 m	up to 20 m	27
BSP 80	80	3			20	40	20					36
BSP 90	90	3			30	30	30			none	The type and	41
BSP 100	100	3			30	40	30			Standard Widths	orientation of the	45
BSP 120	120	3			40	40	40			no modular	recommended	54
BSP 100	100	5	2	0	20	20	20	2	0	dimensions	maximum length	45
BSP 120	120	5	3	0	20	20	20	3	0	annonono	of the panels for	54
BSP 140	140	5	4	0	20	20	20	4	0		reasons of	63
BSP 160	160	5	4	0	20	40	20	4	0			72
BSP 180	180	5	4	0	30	40	30	4	0		transport and	81
BSP 200	200	5	4	0	40	40	40	4	0		installation.	90
BSP 200	200	7s / 7ss	30	30	30	20	30	30	30			90
BSP 210	210	7s / 7ss	30	30	30	30	30	30	30			95
BSP 220	220	7s / 7ss	40	40	20	20	20	40	40			99
BSP 240	240	7s / 7ss	40	40	20	40	20	40	40			108
BSP 260	260	7s / 7ss	40	40	30	40	30	40	40			117
BSP 280	280	7s / 7ss	40	40	40	40	40	40	40			126
BSP 300	300	8s / 8ss	40	40	30	40 + 40	30	40	40			135
BSP 320	320	8s / 8ss	40	40	40	40 + 40	40	40	40			144

Due to the density's natural variability, the quantified masses my vary up to ± 15 %. ss: Outer layers consist of 2 longitudinal layers (l)

BSP 60 mm and other panel thicknesses or special lay-ups on request.

Standard size panel lay-ups

Туре	Thickness (mm)	Layers			Pa	inel lay-u mm	ips			Width (m)	Length (m)	Mass (kg/m²)
BSP 60	60	3s			20	20	20			Standard width	up to 24 m	27
BSP 80	80	3s			30	20	30			1.25 m		36
BSP 90	90	3s			30	30	30				The type and	41
BSP 100	100	3s			30	40	30			Widths below	orientation of the	45
BSP 100	100	3s			40	20	40			1.25 III call be cut	recommended	45
BSP 120	120	5s			40	40	40				maximum length	54
BSP 100	100	5s	2	0	20	20	20	2	20		of the panels for	45
BSP 120	120	5s	2	0	30	20	30	2	20		reasons of	54
BSP 140	140	5s	4	0	20	20	20	4	0			63
BSP 160	160	5s	4	0	20	40	20	4	0		transport and	72
BSP 180	180	5s	4	0	30	40	30	4	0		installation.	81
BSP 200	200	5s	4	0	40	40	40	4	0			90
BSP 220	220	7ss	30	30	35	30	35	30	30			99
BSP 240	240	7ss	40	40	20	40	20	40	40			108
BSP 260	260	7ss	40	40	30	40	30	40	40			117
BSP 280	280	7s / 7ss	40	40	40	40	40	40	40			126

Due to the density's natural variability, the quantified masses my vary up to ± 15 %.

ss: Outer layers consist of 2 longitudinal layers (i) BSP 60 mm and 80 mm and other panel thicknesses or special lay-ups on request.

06 Cutting

Benefits

- Maximum precision due to modern technology
- Fast and cost-efficient assembly on the construction site due to a high level of prefabrication.
- Ongoing development through regular and continuous quality control.
- Professional support in design, consultancy and service by qualified employees

Machining options

- Rectangular formatting of the panel
- Machining of the narrow faces for X-fix, step or spline joints
- Inclined cuts and curves
- Door and window openings
- Routing of channels for building service installations
- Holes and slots for all types of fasteners and installations

Description of post-processing technologies

	Timber framing facilities	Compone	nt dimensions
Hundegger PBA 7043	5-axis unit for circular saw and milling cutter 2 x 3-axis milling machines 5-axis CNC centre with chain saw 2 vertical drilling units	Length: Thickness: Width:	up to 20 m up to 400 mm up to 3.20 m
SCM linea Celaschi ACL/056/00	5-axis unit for portal processing Double-end tenoners for precise processing of narrow faces	Length: Thickness: Width:	1.50 to 20 m up to 400 mm 600 mm to 3.20 m
Hundegger PBA	5-axis unit for portal processing Double-end tenoners for precise processing of narrow faces	Length: Thickness: Width:	1.50 to 20 m up to 400 mm 600 mm to 3.20 m
Biesse Uniteam CLT 400 (2x)	2 5-axis universal units 2 vertical drilling units	Length: Thickness: Width:	16.50 m up to 400 mm up to 3.20 m
Biesse Rover B	1 5-axis spindle	Length: Thickness: Width:	6 m up to 120 mm up to 2.20 m
Hundegger Robot Drive 1.250	1 6-axis spindle	Length: Thickness: Width:	up to 24 m up to 280 mm up to 1.25 m

IT Interface | Import formats

(1) hsbCAD (main program) | Files are evaluated and directly migrated.

- (2) *.sat (ACIS), 2D/3D *.dwg, *.dxf | Files can be imported and post-processed.
- (3) Dietrich's, Cadwork and SEMA | files can be exported, which can be post-processed with hsbCAD.
- (4) *.bvx and *.bvx files are exported | which are post-processed with hsbCAD.

A *.pdf file is also required for all of the above-mentioned import formats and interfaces. This is vital for the determination of component designations, cover layer orientations, qualities and further relevant information.





07 Mechanical properties

Mechanical properties according to European Technical Assessment ETA-12/0281

Out-of-plane loading			Strength c	lasses
			CL26E11.8	CL36E14.7
Modulus of elasticity	parallel to the boards' grain direction	E _{0,mean}	11,800 N/mm ²	14,700 N/mm ²
Modulus of elasticity	Perpendicular to the boards' grain direction	E _{90,mean}	370 N/n	1m²
Modulus of shear	parallel to the boards' grain direction	G _{090,mean}	690 N/n	1m²
Rolling shear modulus	Perpendicular to the boards' grain direction	G _{9090,mean}	50 N/m	m²
Bending strength	parallel to the boards' grain direction	f _{m,k}	26.40 N/mm ²	36 N/mm ²
Tensile strength	Perpendicular to the boards' grain direction	f _{t,90,k}	0.12 N/r	nm²
Compressive strength	Perpendicular to the boards' grain direction	f _{c,90,k}	2.50 N/r	nm²
Shear strength	parallel to the boards' grain direction	f _{v,090,k}	4.00 N/r	nm²
Rolling shear strength		f _{v,k}	1.50 N/r	nm²
In-plane loading				
Modulus of elasticity	parallel to the boards' grain direction	E _{0,mean}	11,600 N/mm ²	14,700 N/mm ²
Modulus of shear	parallel to the boards' grain direction	G _{090,mean}	250 N/n	1m²
Bending strength	parallel to the boards' grain direction	f _{m,k}	24.00 N/mm ²	34.50 N/mm ²
Tensile strength	parallel to the boards' grain direction	f _{t,90,k}	14.00 N/mm ²	19.50 N/mm ²
Compressive strength	parallel to the boards' grain direction	f _{c,90,k}	21.00 N/mm ²	24.50 N/mm ²
Shear strength	parallel to the boards' grain direction	f _{v,090,k}	4.0 N/m	1m²
Density				
Characteristic density		${oldsymbol{ ho}_k}$	385 kg/m³	430 kg/m ³
Mean density		$ ho_{mean}$	420 kg/m ³	480 kg/m ³

The above-stated mechanical properties are identical to the ones declared in ETA-12/0281.

08 Tables for preliminary design Floors without consideration of vibration HASSLACHER CLT CL26E11.8 - Floor class 3

Single-span beams

a					Span length L			
8 _{1,k}	$S = \mu \hat{S}_k$	3.00 m	3.50 m	4.00 m	4.50 m	5.00 m	5.50 m	6.00 m
	1.0 kN/m ²	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s
0.5 kN/m²	2.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s	BSP 160 5s
	3.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s
	1.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s	BSP 160 5s
1.0 kN/m²	2.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s
	3.0 kN/m ²	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 160 5s	BSP 180 5s
	1.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s
1.5 kN/m²	2.0 kN/m ²	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 160 5s	BSP 180 5s
	3.0 kN/m ²	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 5s



 $g_{1,k}$ [kN/m²] s_k [kN/m²]

Two-span beams

σ	a . a		Span length L							
8 _{1,k}	$g_{1,k} + q_k$	3.00 m	3.50 m	4.00 m	4.50 m	5.00 m	5.50 m	6.00 m		
	1.0 kN/m ²	BSP 60 3s	BSP 60 3s	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s		
0.5 kN/m²	2.0 kN/m ²	BSP 60 3s	BSP 80 3s	BSP 90 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 120 3s		
	3.0 kN/m ²	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s		
	1.0 kN/m ²	BSP 60 3s	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 120 3s		
1.0 kN/m²	2.0 kN/m ²	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s		
	3.0 kN/m²	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s		
	1.0 kN/m ²	BSP 60 3s	BSP 80 3s	BSP 90 3s	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s		
1.5 kN/m²	2.0 kN/m ²	BSP 80 3s	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s		
	3.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s		

The tables show a preliminary design of HASSLACHER CLT and do not replace a structural analysis of the construction. The software CLTdesginer was developed by holz.bau forschungs gmbh and is available to our customers free of charge and without obligation. For more information see hasslacher.com.

Panel lay-up

3s: 3-layer; 5s: 5-layer; 7ss: 7ss: 7-ply with double-layer top layer

Duration of fire resistance:



Preliminary design according to EN 1995-1-1 and the technical assessment.

Boundary conditions

- Service class 1 in accordance to EN 1995-1-1
- Persistent load g1,k is without the self-weight of X-LAM; (the self-weight was taken into account via g_{0k}.)
- Structural fire resistant design according to EN 1995-1-2 and the technical assessment
- Snow loads at altitude/region < 1,000m above sea level
- Vibration is not taken into account in this preliminary design.
- The load is regarded as uniformly distributed, individual/ concentrated loads are not taken into account.
- Preliminary design was carried out using CLTdesigner from holz.bau (Technical University of Graz)

08 Tables for preliminary design Floors with consideration of vibration HASSLACHER CLT CL26E11.8 - Floor class 1

Single-span beams

a	~				Span length L			
8 _{1,k}	, q _k	3.00 m	3.50 m	4.00 m	4.50 m	5.00 m	5.50 m	6.00 m
	2.0 kN/m ²	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
1.0 kN/m²	3.0 kN/m ²	BSP 90 3s	BSP 120 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
	4.0 kN/m ²	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
	2.0 kN/m ²	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
1.5 kN/m²	3.0 kN/m²	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 140 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
	4.0 kN/m ²	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
	2.0 kN/m ²	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss
2.0 kN/m²	3.0 kN/m ²	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss
	4.0 kN/m ²	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss



σ	a				Span length L			
8 _{1,k}	Ч _к	3.00 m	3.50 m	4.00 m	4.50 m	5.00 m	5.50 m	6.00 m
	2.0 kN/m ²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
1.0 kN/m²	3.0 kN/m²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
	4.0 kN/m²	BSP 80 3s	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss
	2.0 kN/m²	BSP 80 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
1.5 kN/m²	3.0 kN/m²	BSP 80 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
	4.0 kN/m ²	BSP 90 3s	BSP 100 3s	BSP 120 3s	BSP 140 5s	BSP 180 5s	BSP 200 5s	BSP 220 7ss
	2.0 kN/m ²	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss
2.0 kN/m ²	3.0 kN/m²	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss
	4.0 kN/m ²	BSP 90 3s	BSP 120 3s	BSP 140 5s	BSP 160 5s	BSP 180 5s	BSP 200 7ss	BSP 240 7ss

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q_k [kN/m²] g_{1.k} [kN/m²]

Panel lay-up

3s: 3-layer; 5s: 5-layer; 7ss: 7ss: 7-ply with double-layer top layer

Duration of fire resistance:

R0 R30 R60 R90

Preliminary design according to EN 1995-1-1 and the technical assessment.

Boundary conditions

- Service class 1 in accordance to EN 1995-1-1
- The cross-laminated timber's self-weight was taken into account via g_{0.k}

q_k [kN/m²] g_{1,k} [kN/m²]

- Load category A and B (residential and office space)
- Structural fire resistant design according to EN 1995-1-2 and the technical assessment
- Vibration verification according to EN 1995-1-1 fulfilled, normal requirements
- The load is regarded as uniformly distributed.
- Individual loads must be taken into account separately
- Preliminary design was carried out using CLTdesigner from holz.bau (Technical University of Graz)

09 HASSLACHER group product range





Sawn timber



Surfaced timber



Structural finger jointed solid timber & GLT®



Glued solid timber Duo/Trio



Glued laminated timber



Glulam ceiling



Cross Laminated Timber



Pellets



Glued laminated timber special components



Shuttering boards



Special products



Pallets & packaging solutions



From wood to wonders.

HASSLACHER group

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