

HASSLACHER
NORICA TIMBER

From **wood** to **wonders**.

GLUED SOLID TIMBER DUO/TRIO

THE DIMENSIONALLY STABLE AESTHETE.



01

AT A GLANCE

AREAS OF APPLICATION

- ⊕ Single and multiple family houses
- ⊕ Multi-storey residential buildings
- ⊕ Visual application with the highest requirements

FIELDS OF USE

- ⊕ Visible roof construction in form of rafters and beams
- ⊕ Visible floor construction in form of beams
- ⊕ Visible girder grid systems
- ⊕ Low-torsion wooden bars in industrial quality
- ⊕ Substitute for glued laminated timber for application in industrial and visual quality
- ⊕ Block planks as wall and floor elements

ADVANTAGES

- ⊕ No glue line on the visible surface
- ⊕ Cracks are minimised by a core-free cutting process
- ⊕ High loadbearing capacity with low density
- ⊕ High dimensional stability through bonding and technical drying
- ⊕ High fire and chemical resistance
- ⊕ High thermal insulation properties
- ⊕ Natural, renewable and 100% recyclable building material
- ⊕ Positive impacts on climate protection through storage of carbon dioxide (CO₂)
- ⊕ Transparent and light glue line



02

OVERVIEW

PRODUCT STANDARD/CERTIFICATION

EN 14080

SURFACE QUALITIES

Visual quality

Industrial quality

CROSS SECTIONS

Heights: 100 to 240 mm

Widths: DUO: 80 to 160 mm in 20 mm steps

TRIO: 180 to 240 mm in 20 mm steps

Lengths: Standard length: 13.5 m

Special lengths: from 4 m up to 16 m

Other cross sections are available on request

STRENGTH CLASSES

C24

C30 (on request)

WOOD SPECIES

- ⊕ Spruce
- ⊕ Other types of wood on request

CERTIFICATION

The current certificates are available in the download area of our website at [HASSLACHER.COM](https://www.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 bright glue line, adhesive type I according to EN 301 approved for bonding loadbearing and non-loadbearing timber components, both indoors and outdoors.

LAMELLA THICKNESS

Lamella thicknesses: 40, 50, 60, 70 and 80 mm

MOISTURE CONTENT

12% \pm 2%

DENSITY

For spruce, and depending on the strength class, approximately 400 kg/m³ to 500 kg/m³ in average

THERMAL CONDUCTIVITY

$\lambda = 0.13$ W/mK

DIFFUSION RESISTANCE

According to EN ISO 10456
 $\mu = 50$ (dry) to 20 (wet)

FORMALDEHYDE EMISSIONS

E1 according to EN 717-1 (<0.1 ppm)
Actual measured value: <0.01 ppm

FIRE BEHAVIOUR

D-s2, d0
D_{fi}-s1 when used as floor covering

STRUCTURAL FIRE RESISTANCE

0.80 mm/min in accordance to EN 1995-1-2

SHRINKAGE AND SWELLING BEHAVIOUR

Perpendicular to the grain direction
 $\alpha_{u,90} = 0.24\%$ per 1% change in moisture content

Parallel to the grain direction
 $\alpha_{u,0} = 0.01\%$ per 1% change in moisture content

DIMENSIONAL TOLERANCES

Cross section: according to EN 14080
Length: according to EN 390
or EN 14080

SERVICE CLASSES (EN 1995-1-1)

Service class 1 heated interior
Service class 2 roofed outdoor area

04

QUALITY DESCRIPTION

CHARACTERISTICS	VISUAL QUALITY	INDUSTRIAL QUALITY
General	Optimised for a visible use, e.g. as visible rafters and beams for carports and upscale residential areas. All knots are sound knots and knotholes are patched. The occurrence of discolorations such as blue stains, red stripes and/or pitch pockets is minimised. The cracks are minimised and hardly any heart centre is present due to core-free cutting. A homogeneous appearance is aspired.	Optimised for a nonvisual use. Discolorations such as blue stain, nail-proof brown and/or red stripes are permitted. Fallen-out knots and pitch pockets may casually occur. For loadbearing and non-loadbearing use in engineered timber structures with lower aesthetic requirements.
Black knots	Healthy knots	Permitted
Falling knots	Permitted up to approximately 20 mm, sound knots are permitted	Permitted
Pith	Lamellas are free of pith	Permitted
Wane	Not permitted	Not permitted
Rotten areas	Not permitted	Not permitted
Pitch pockets	Permitted up to approximately 5 x 50 mm, larger pockets must be patched	Permitted
Insect infestations	Not permitted	Permitted up to a diameter of 2 mm
Red stripes	Up to approximately 5% of the surface	Permitted
Blue stain	Up to approximately 5% of the surface	Permitted
Planing quality	Rough areas are not permitted. Planer marks up to a length of 10 mm and a depth of 1 mm are permitted	Rough areas and planer marks are permitted
Cracks	Depth: up to 50% of the component width Crack width: max. 3 mm Crack length: no restrictions	Depth: up to 50% of the component width Crack width: no restriction Crack length: no restriction
Scope of validity	The specified surface qualities are valid at time of delivery.	

05

PRODUCT PORTFOLIO

GLUED SOLID TIMBER – PACKAGE UNITS

Height in mm	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³
Max.	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm
240	2.2	4.99	2.7	6.24	1.6	3.74	1.9	4.37	2.2	4.99	2.5	5.62	2.7	6.24
	20	120 x 32	20	120 x 40	10	120 x 24	10	120 x 28	10	120 x 32	10	120 x 36	10	120 x 40
220	2	4.58	2.5	5.72	1.5	3.43	1.8	4			2.3	5.15	2.5	5.72
	20	110 x 32	20	110 x 40	10	110 x 24	10	110 x 28			10	110 x 36	10	110 x 40
200	2.2	4.99	2.7	6.24	1.6	3.74	1.9	4.37	2.2	4.99	2.5	5.62	2.7	6.24
	24	120 x 32	24	120 x 40	12	120 x 24	12	120 x 28	12	120 x 32	12	120 x 36	12	120 x 40
180	2	4.49	2.5	5.62	1.5	3.37	1.7	3.93			2.2	5.05		
	24	108 x 32	24	108 x 40	12	108 x 24	12	108 x 28			12	108 x 36		
160	2.1	4.66	2.6	5.82	1.5	3.49			2.1	4.66				
	28	112 x 32	28	112 x 40	14	112 x 24			14	112 x 32				
140	1.5	3.49	1.9	4.37			1.8	4.08						
	24	112 x 24	24	112 x 30			16	112 x 28						
120	2.2	4.99			1.6	3.75								
	40	120 x 32			20	120 x 24								
100	1.8	4.16												
	40	110 x 32												
Width in mm	80 DUO		100 DUO		120 DUO		140 DUO		160 DUO		180 TRIO		200 TRIO	

LOG HOUSE PROFILE

Net size = nominal size – 15 mm

Tongue and groove joint

Thickness	80 mm	100–140 mm	160–180 mm	200–240 mm
Connection type	1 tongue-and-groove-joint	2 tongue-and-groove-joints	3 tongue-and-groove-joints	4 tongue-and-groove-joints



06

MECHANICAL PROPERTIES

CHARACTERISTIC VALUES OF STRENGTH AND STIFFNESS PROPERTIES

Strength class of the single lamellas		C24	C30 ³⁾
Bending strength	$f_{m,k}$ ¹⁾	24	30
Tensile strength	$f_{t,0,k}$	14	18
	$f_{t,90,k}$	0.4	0.4
Compressive strength	$f_{c,0,k}$ ¹⁾	21	23
	$f_{c,90,k}$	2.5	2.7
Shear strength	$f_{v,k}$ ^{1) 2)}	4,0	4.0
Modulus of elasticity	$E_{0,mean}$	11,000	12,000
	$E_{0,05}$	7,400	8,000
	$E_{90,mean}$	370	400
Shear modulus	G_{mean}	690	750
Rolling shear modulus	ρ_k	350	380
	ρ_{mean}	420	460

1) The values for bending strength, tensile strength and compressive strength parallel to grain direction and shear strength can be multiplied by the system coefficient k_{sys} in accordance to EN 1995-1-1 and DIN 1052.

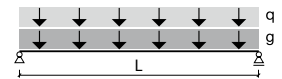
2) According to DIN 1052, the shear strength must be reduced by the factor k_{cr} (crack factor).

3) Strength class C30 available on request.



07

TABLE FOR PRELIMINARY DESIGN



GLUED SOLID TIMBER C24, SINGLE SPAN BEAMS

Depth in mm	Width in mm	persistent loads q incl. imposed load p in kN/m																
		1	1.5	2	2.5	3	3.5	4	4.5	5	6	7	8	9	10	15	20	25
240	180	7.74	7.29	6.63	6.16	5.80	5.50	5.27	5.06	4.89	4.60	4.36	4.09	3.86	3.67	3.01	2.56	2.05
	160	7.50	6.69	6.15	5.75	5.44	5.18	4.97	4.79	4.63	4.37	4.12	3.86	3.65	3.47	2.84	2.28	1.83
	120	6.92	6.15	5.64	5.26	4.97	4.73	4.54	4.37	4.22	3.86	3.58	3.36	3.17	3.01	2.28	1.71	1.37
	100	6.57	5.82	5.33	4.97	4.69	4.47	4.28	4.07	3.86	3.54	3.28	3.07	2.90	2.75	1.90	1.43	1.15
	80	6.15	5.44	4.97	4.63	4.37	4.12	3.86	3.65	3.47	3.17	2.94	2.75	2.53	2.28	1.52	1.15	0.92
220	100	6.04	5.35	4.89	4.56	4.30	4.10	3.93	3.73	3.55	3.24	3.01	2.82	2.66	2.52	1.74	1.31	1.05
	80	5.65	4.99	4.56	4.25	4.01	3.78	3.55	3.35	3.18	2.91	2.70	2.52	2.32	2.09	1.40	1.05	0.84
200	200	6.72	6.29	5.73	5.32	5.00	4.75	4.54	4.37	4.22	3.97	3.77	3.60	3.40	3.23	2.65	2.30	1.90
	180	6.53	5.82	5.34	4.99	4.72	4.50	4.31	4.15	4.02	3.79	3.60	3.42	3.23	3.07	2.51	2.14	1.71
	160	6.32	5.62	5.16	4.81	4.55	4.33	4.15	4.00	3.87	3.65	3.44	3.23	3.05	2.89	2.37	1.90	1.52
	140	6.08	5.40	4.95	4.62	4.36	4.15	3.98	3.83	3.70	3.48	3.23	3.02	2.85	2.71	2.22	1.67	1.34
	120	5.82	5.16	4.72	4.40	4.15	3.95	3.79	3.65	3.52	3.23	2.99	2.80	2.65	2.51	1.90	1.43	1.15
	100	5.51	4.88	4.46	4.15	3.92	3.73	3.57	3.40	3.23	2.95	2.74	2.56	2.42	2.30	1.59	1.19	0.96
	80	5.16	4.55	4.15	3.87	3.65	3.44	3.23	3.05	2.89	2.65	2.45	2.30	2.11	1.90	1.27	0.96	0.77
180	180	5.91	5.47	4.98	4.62	4.35	4.13	3.95	3.80	3.67	3.45	3.28	3.08	2.91	2.76	2.26	1.93	1.54
	140	5.50	4.88	4.47	4.17	3.93	3.74	3.59	3.45	3.34	3.14	2.91	2.72	2.57	2.44	2.00	1.50	1.20
	120	5.26	4.65	4.26	3.97	3.74	3.56	3.41	3.29	3.18	2.91	2.70	2.53	2.38	2.26	1.71	1.29	1.03
	100	4.98	4.40	4.02	3.74	3.53	3.36	3.22	3.06	2.91	2.66	2.47	2.31	2.18	2.07	1.43	1.07	0.86
	80	4.65	4.10	3.74	3.49	3.29	3.10	2.91	2.75	2.61	2.38	2.21	2.07	1.90	1.71	1.15	0.86	0.69
160	160	5.11	4.68	4.25	3.95	3.71	3.53	3.38	3.25	3.13	2.95	2.76	2.59	2.44	2.32	1.90	1.52	1.22
	120	4.69	4.15	3.79	3.53	3.33	3.17	3.04	2.92	2.83	2.59	2.40	2.25	2.12	2.01	1.52	1.15	0.92
	100	4.44	3.92	3.58	3.33	3.14	2.99	2.86	2.73	2.59	2.37	2.19	2.05	1.94	1.84	1.27	0.96	0.77
140	80	4.15	3.65	3.33	3.10	2.92	2.76	2.59	2.44	2.32	2.12	1.96	1.84	1.69	1.52	1.02	0.77	0.61
	140	4.32	3.91	3.56	3.30	3.11	2.95	2.82	2.72	2.62	2.45	2.27	2.12	2.00	1.90	1.56	1.17	0.94
	100	3.90	3.44	3.14	2.92	2.75	2.62	2.51	2.39	2.27	2.07	1.92	1.80	1.70	1.61	1.11	0.84	0.67
120	80	3.64	3.20	2.92	2.72	2.56	2.42	2.27	2.14	2.03	1.86	1.72	1.61	1.48	1.34	0.89	0.67	0.54
	120	3.13	2.79	2.53	2.35	2.21	2.08	1.95	1.84	1.74	1.59	1.48	1.38	1.27	1.15	0.77	0.57	0.46
	100	2.62	2.32	2.11	1.96	1.84	1.73	1.62	1.53	1.45	1.33	1.23	1.15	1.06	0.96	0.64	0.48	0.38

Note: the table only represents a feature for preliminary design and therefore does not replace the necessary static proof.



08

HASSLACHER NORICA TIMBER'S PRODUCT PORTFOLIO



Sawn timber



Surfaced timber



Structural finger jointed solid timber & GLT®



Glued solid timber Duo/Trio



Glued laminated timber



Solid timber ceiling systems



Cross laminated timber



Glued laminated timber – special components



Special products



Pellets



Formwork panels



Pallets & packaging solutions

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