

EN

**HASSLACHER**  
**NORICA TIMBER**

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

# Glued solid timber Duo/Trio/Quattro

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
- ⊕ Transparent and light glue line



# 02 Overview

## Product standard/certification

EN 14080

## Surface qualities

Visual quality  
Industrial quality

## Cross sections

Heights: 100 to 280 mm  
Widths: 80 to 200 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/m<sup>3</sup> to 500 kg/m<sup>3</sup> 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<sub>fi</sub>-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
<b>General</b>	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.
<b>Black knots</b>	Healthy knots	Permitted
<b>Falling knots</b>	Permitted up to approximately 20 mm, sound knots are permitted	Permitted
<b>Pith</b>	Lamellas are free of pith	Permitted
<b>Wane</b>	Not permitted	Not permitted
<b>Rotten areas</b>	Not permitted	Not permitted
<b>Pitch pockets</b>	Permitted up to approximately 5 x 50 mm, larger pockets must be patched	Permitted
<b>Insect infestations</b>	Not permitted	Permitted up to a diameter of 2 mm
<b>Red stripes</b>	Up to approximately 5% of the surface	Permitted
<b>Blue stain</b>	Up to approximately 5% of the surface	Permitted
<b>Planing quality</b>	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
<b>Cracks</b>	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
<b>Scope of validity</b>	The specified surface qualities are valid at time of delivery.	



# 05

# Product portfolio

## Glued solid timber – package units

Height in mm	t	m <sup>3</sup>	t	m <sup>3</sup>	t	m <sup>3</sup>	t	m <sup>3</sup>	t	m <sup>3</sup>	t	m <sup>3</sup>	t	m <sup>3</sup>
Max.	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm	unit	cm
280					1.5	3.49							2.5	5.82
					<b>8</b>	112 x 24							<b>8</b>	112 x 40
					TRIO						QUINTO			
260					1.4	3.24								
					<b>8</b>	104 x 24								
					TRIO									
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
	<b>20</b>	120 x 32	<b>20</b>	120 x 40	<b>10</b>	120 x 24	<b>10</b>	120 x 28	<b>10</b>	120 x 32	<b>10</b>	120 x 36	<b>10</b>	120 x 40
	DUO		DUO		DUO		TRIO		QUATTRO		TRIO		QUINTO	
220	2	4.58	2.5	5.72	1.5	3.43	1.8	4	2	4.58	2.3	5.15	2.5	5.72
	<b>20</b>	110 x 32	<b>20</b>	110 x 40	<b>10</b>	110 x 24	<b>10</b>	110 x 28	<b>10</b>	110 x 32	<b>10</b>	110 x 36	<b>10</b>	110 x 40
	DUO		DUO		DUO		TRIO		QUATTRO		TRIO		QUINTO	
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
	<b>24</b>	120 x 32	<b>24</b>	120 x 40	<b>12</b>	120 x 24	<b>12</b>	120 x 28	<b>12</b>	120 x 32	<b>12</b>	120 x 36	<b>12</b>	120 x 40
	DUO		DUO		DUO		DUO		QUATTRO		TRIO		TRIO	
180	2	4.49	2.5	5.62	1.5	3.37	1.7	3.93	2	4.49	2.2	5.05		
	<b>24</b>	108 x 32	<b>24</b>	108 x 40	<b>12</b>	108 x 24	<b>12</b>	108 x 28	<b>12</b>	108 x 32	<b>12</b>	108 x 36		
	DUO		DUO		DUO		TRIO		QUATTRO		TRIO			
160	2.1	4.66	2.6	5.82	1.5	3.49			2.1	4.66			200	
	<b>28</b>	112 x 32	<b>28</b>	112 x 40	<b>14</b>	112 x 24			<b>14</b>	112 x 32				
	DUO		DUO		DUO				QUATTRO					
140	2.1	4.66	1.9	4.37	1.5	3.49	1.8	4.08				180		
	<b>32</b>	112 x 32	<b>24</b>	112 x 30	<b>16</b>	112 x 24	<b>16</b>	112 x 28						
	DUO		DUO		TRIO		DUO							
120	2.2	4.99			1.6	3.75						160		
	<b>40</b>	120 x 32			<b>20</b>	120 x 24								
	DUO				TRIO									
100	2.2	4.99										140		
	<b>48</b>	120 x 32												
	DUO													
Width in mm	80		100		120									



## 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 <sup>3)</sup>
Bending strength	$f_{m,k}$ <sup>1)</sup>	24	30
Tensile strength	$f_{t,0,k}$	14	18
	$f_{t,90,k}$	0.4	0.4
Compressive strength	$f_{c,0,k}$ <sup>1)</sup>	21	23
	$f_{c,90,k}$	2.5	2.7
Shear strength	$f_{v,k}$ <sup>1) 2)</sup>	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	$\rho_k$	350	380
	$\rho_{mean}$	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.

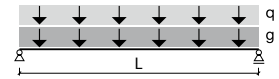




# 07

# 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
180	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	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
160	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	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 group product range



Sawn timber



Surfaced timber



Structural finger jointed  
solid timber & GLT®



Glued solid timber Duo/Trio



Glued laminated timber



Glued ceiling systems



Cross laminated timber



Glued laminated timber  
special components



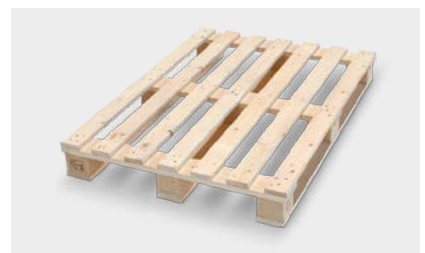
Solid wood boards



Pellets



Formwork panels



Pallets & packaging solutions



# HASSLACHER NORICA TIMBER

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

## HASSLACHER group

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