

HASSLACHER
NORICA TIMBER

GLUE LAMINATED TIMBER **BSH**

THE ENGINEERED WOOD BEAM.

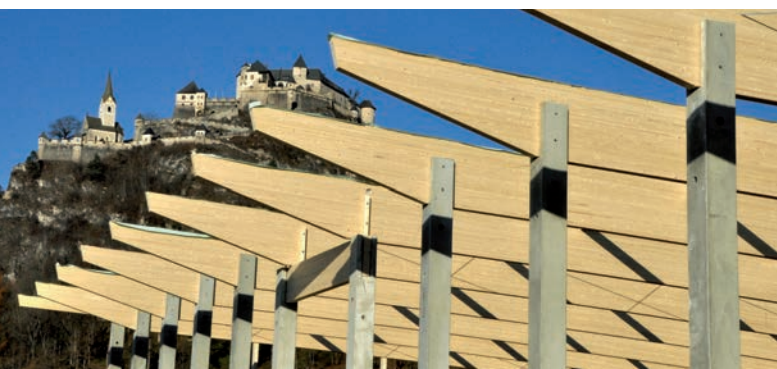
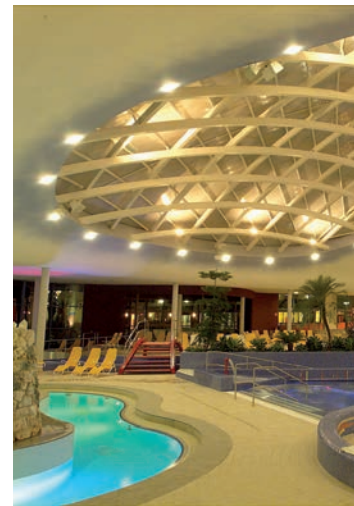
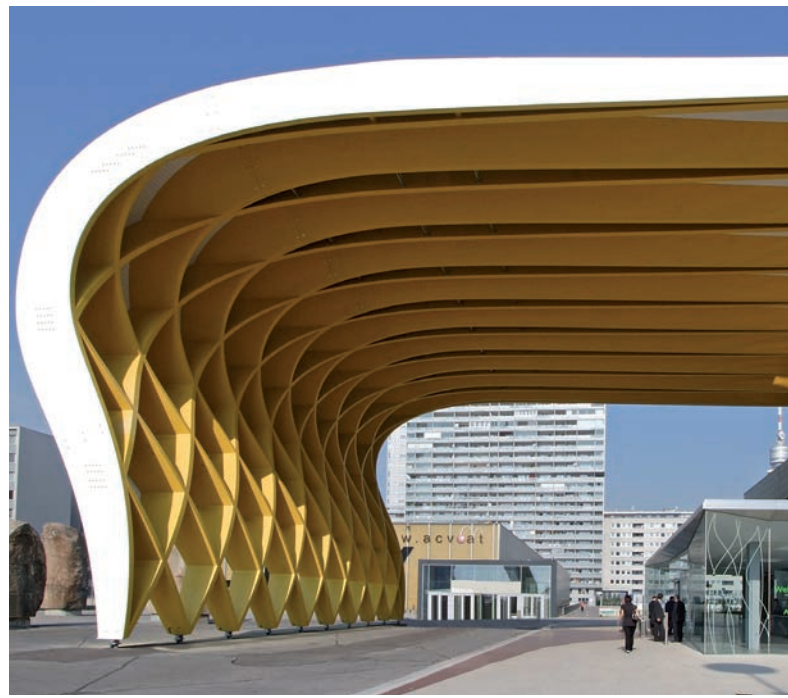
From wood to wonders.

HASSLACHER NORICA TIMBER

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NORICA TIMBER





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01

AT A GLANCE

AREAS OF APPLICATION

- ⊕ Detached houses and apartment buildings
- ⊕ Multi-storey residential and office buildings
- ⊕ Public buildings and administration buildings
- ⊕ Agricultural buildings
- ⊕ Industrial and production hall-type buildings
- ⊕ Sports halls and leisure facilities

AREAS OF USE

- ⊕ Roof truss and roof structures
even in the exposed area
- ⊕ Large-span main beams in special shapes
- ⊕ Supports and columns
- ⊕ Ceiling structure or as support grid system





ADVANTAGES

- + Innovation at it's best: straight, cambered, and in special shapes
- + Large span lengths
- + High load-carrying capacity with low density
- + High dimensional stability due to gluing
- + Fast and dry construction method
- + Can be worked with simple tools
- + High fire resistance and chemical resistance
- + High thermal insulation properties
- + Natural, renewable and 100% recyclable building material
- + Positive impacts on climate protection due to storage of CO₂

02

OVERVIEW



PRODUCT STANDARD / CERTIFICATION

⊕ EN 14080

SURFACE QUALITIES

Visible quality
Industrial quality

MAXIMUM CROSS-SECTIONS + STEPS

Heights: 80 to 1280 mm in 40 mm steps
Special components possible up to 4,000 mm
Widths: 80 mm to 280 mm in 20 mm steps
extendable as desired by block gluing
Lengths: up to 27 m or special components
up to 40 m possible

STRENGTH CLASSES

GL24h GL24c
GL28h GL28c
GL32h GL32c
Other strength classes on request

TYPES OF WOOD

- ⊕ Spruce/fir
- ⊕ Larch
- ⊕ Pine
- ⊕ Other types of wood on request

CERTIFICATES

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

SUSTAINABILITY CERTIFICATE

Our products are PEFC certified.



Förderung nachhaltiger
Waldwirtschaft
www.pefc.at

03

TECHNICAL DATA

FACTS WITH THE POWER TO CONVINC.

ADHESIVE

Melamine resin adhesive with light-coloured glue line, adhesive type I in accordance with EN 301 approved for the gluing of load-bearing and non-load-bearing timber components for both interior and exterior applications

LAMELLA THICKNESS

Max. lamella thickness 45 mm
Max. lamella thickness for service class 3: 35 mm (or 40 mm up to 60,000 mm² cross-sectional area)
For curved special parts:
lamella thickness from 6 to 45 mm

MOISTURE CONTENT

12% ± 2%

DENSITY

depending on the strength class
on average approx. 450 kg/m³ to 500 kg/m³

THERMAL CONDUCTIVITY

$\lambda = 0.13 \text{ W/mK}$

DIFFUSION RESISTANCE

depending on the type of wood, density, etc
 $\mu = 20 \text{ to } 60$

FORMALDEHYDE RELEASE

E1 acc. 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

FIRE RESISTANCE

0.70 mm/min in accordance with EN 1995-1-2

SHRINKAGE AND SWELLING BEHAVIOUR

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

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

DIMENSIONAL TOLERANCES

according to EN 390 or EN 14080

SERVICE CLASSES (EN 1995-1-1)

Service class 1 heated interior
Service class 2 covered exterior
Service class 3 exposed to weathering
(on request)

04

QUALITY DESCRIPTION

PROPERTIES	VISIBLE QUALITY	INDUSTRIAL QUALITY
General	Optimized for use in visible areas, e.g. visible roof structures, car ports, living areas, etc. Knots are intergrown and knot holes are patched. There is minimal occurrence of discolourations such as blue stain and red stripiness and resin galls. Emphasis is placed on a uniform appearance.	Suitable for use in non-visible areas, e.g. for industrial and production halls, substructures, roof structures that are not exposed, agricultural buildings, etc. Discolourations such as (nail-holding) brown discolouration, blue stain and red stripiness are permissible. Dropped out knots and resin galls may occur randomly.
Black knots	permissible as long as they don't fall out	permissible
Falling-out knots	permissible up to approx. 20 mm, intergrown knots permissible	permissible
Wane	not permissible	not permissible
Rotten areas	not permissible	not permissible
Heart	permissible	permissible
Pitch pockets	permissible up to approx. 5 x 50 mm, larger pockets must be patched	permissible
Insect attack	not permissible	permissible up to 2 mm diameter
Blue stain	up to approx. 5% of the surface	permissible
Red stripiness	up to approx. 5% of the surface	permissible
Quality of planing	rough areas not permissible; planer marks permissible up to a length of 10 mm and a depth of 1 mm	rough areas and planer marks are permissible.
Splits	are permissible up to a depth of 1/6 of the component width (per side); the required static load-carrying capacity must not be compromised	are permissible up to a depth of 1/6 of the component width (per side); the required static load-carrying capacity must not be compromised
Scope of validity	The surface qualities shown are applicable on delivery.	

05

STRAIGHT BEAMS

PRODUCT RANGE

PACKAGING UNITS

Depth mm	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³	t	m³
	pc	cm	pc	cm	pc	cm	pc	cm	pc	cm	pc	cm	pc	cm	pc	cm	pc	cm
600	2.3	5.2	2.9	6.5	1.7	3.9	2.0	4.5	2.3	5.2	1.3	2.9	2.7	6.5	1.6	3.6	1.7	3.9
	8	120x32	8	120x40	4	120x24	4	120x28	4	120x32	2	120x18	4	120x40	2	120x22	2	120x24
560	2.2	4.8	2.7	6.0	1.6	3.6	1.9	4.2	2.2	4.8	2.4	5.4	2.7	6.0	2.8	6.7	1.6	3.6
	8	112x32	8	112x40	4	112x24	4	112x28	4	112x32	4	112x36	4	112x40	4	112x44	2	112x24
520	2.0	4.5	1.2	2.8	1.5	3.4	1.8	3.9	2.0	4.5	2.3	5.1	2.5	5.6	2.6	6.2	1.5	3.4
	8	104x32	4	104x20	4	104x24	4	104x28	4	104x32	4	104x36	4	104x40	4	104x44	2	104x24
480	1.9	4.1	1.1	2.6	1.4	3.1	1.6	3.6	1.9	4.1	2.1	4.7	2.3	5.2	1.3	2.9	2.6	6.2
	8	96x32	4	96x20	4	96x24	4	96x28	4	96x32	4	96x36	4	96x40	2	96x22	4	96x48
440	1.7	3.8	1.0	2.4	1.3	2.9	1.5	3.3	1.7	3.8	1.9	4.3	2.1	4.8	2.4	5.2	2.4	5.7
	8	88x32	4	88x20	4	88x24	4	88x28	4	88x32	4	88x36	4	88x40	4	88x44	4	88x48
400	2.3	5.2	1.4	3.2	1.7	3.9	2.0	4.5	2.3	5.2	2.4	5.8	2.7	6.5	1.6	3.6	1.7	3.9
	12	120x32	6	120x20	6	120x24	6	120x28	6	120x32	6	120x36	6	120x40	3	120x22	3	120x24
360	2.1	4.7	1.2	2.9	1.6	3.5	1.7	4.1	2.1	4.7	2.4	5.2	2.6	5.8	2.7	6.4	1.6	3.5
	12	108x32	6	108x20	6	108x24	6	108x28	6	108x32	6	108x36	6	108x40	6	108x44	3	108x24
320	1.7	4.1	2.2	5.2	1.3	3.1	1.5	3.6	1.7	4.1	2.0	4.7	2.2	5.2	2.4	5.7	2.6	6.2
	12	96x32	12	96x40	6	96x24	6	96x28	6	96x32	6	96x36	6	96x40	6	96x44	6	96x48
280	2.2	4.8	2.7	6.0	1.6	3.6	1.9	4.2	2.2	4.8	2.4	5.4	2.7	6.0	1.5	3.3	1.6	3.6
	16	112x32	16	112x40	8	112x24	8	112x28	8	112x32	8	112x36	8	112x40	4	112x22	4	112x24
240	2.3	5.2	2.9	6.5	1.8	3.9	2.0	4.5	2.3	5.2	2.6	5.8	2.9	6.5	1.6	3.6	1.7	3.9
	20	120x32	20	120x40	10	120x24	10	120x28	10	120x32	10	120x36	10	120x40	5	120x22	5	120x24
200	2.3	5.2	2.9	6.5	1.8	3.9	2.0	4.5	2.3	5.2	2.6	5.8	2.7	6.5				
	24	120x32	24	120x40	12	120x24	12	120x28	12	120x32	12	120x36	12	120x40				
160	2.0	4.8	2.5	6.0	1.5	3.6	1.8	4.2	2.2	4.8								
	28	112x32	28	112x40	14	112x24	14	112x28	14	112x32								
120	2.3	5.2	2.9	6.5	1.6	3.9												
	40	120x32	40	120x40	20	120x24												
Width	80		100		120		140		160		180		200		220		240	

Widths 260 mm and 280 mm on request
 Extendable as desired by block gluing
 Possible heights up to 4000 mm





BUKOVINA SPA

The Bukovina Spa near Zakopane (Poland) represents a challenging example of cutting edge wellness architecture using the HNT glue laminated timber as a construction material. The roof shape consists essentially of hipped and gabled roofs nested within one another. Approx. 300 m³ of glue laminated timber was used in its construction.

The support structure of the main roof is made up of trusses with a span of 33 m and a height of 10 m.

06

SPECIAL COMPONENTS

PRODUCT RANGE
UNLIMITED USE.



MONO PITCHED BEAMS

Beam length: up to 40 m
Width: 80 to 280 mm
Block gluing: > 280 mm
possible on request
Heights: up to 4,000 mm



CURVED BEAMS OR PARALLEL BEAMS WITH STRUCTURAL CAMBER

Beam length: up to 40 m
Width: 80 to 280 mm
Block gluing: > 280 mm
possible on request
Heights: up to 4,000 mm



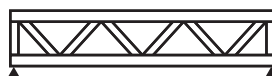
BOOMERANG BEAMS WITH STRAIGHT OR CAMBERED LOWER CHORD

Beam length: up to 40 m
Width: 80 to 280 mm
Block gluing: > 280 mm
possible on request
Heights: up to 4,000 mm



FISH-BELLIED BEAMS

Beam length: up to 40 m
Width: 80 to 280 mm
Block gluing: > 280 mm
possible on request
Heights: up to 4,000 mm



TRUSSES

Span lengths: > 40 m
Width: 80 to 280 mm
Block gluing: > 280 mm
possible on request
Heights: > 4,000 mm
possible on request



FREE SHAPES

Lengths: up to 40 m
Widths: up to 280 mm
Block gluing: > 280 mm
possible on request
Heights: up to 4,000 mm

07

MECHANICAL PROPERTIES

FIRMLY JOINED.



HOMOGENOUS AND COMBINED GLUE LAMINATED TIMBER IN ACCORDANCE WITH 14080:2013

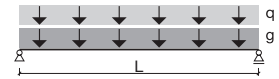
Characteristic values of the strength and stiffness properties in N/mm² and apparent density in kg/mm³

Strength class of the glue laminated timber		GL24c	GL24h	GL28c	GL28h	GL32c	GL32h
Bending strength	$f_{m,g,k}$	24	24	28	28	32	32
Tensile strength	$f_{t,0,g,k}$	17	19.2	19.5	22.3	19.5	25.6
	$f_{t,90,g,k}$				0.5		
Compressive strength	$f_{c,0,g,k}$	21.5	24	24	28	24.5	32
	$f_{c,90,g,k}$				2.5		
Shear strength	$f_{v,g,k}$				3.5		
Rolling shear strength	$f_{r,g,k}$				1.2		
Modulus of elasticity	$E_{0,g,mean}$	11,000	11,500	12,500	12,600	13,500	14,200
	$E_{0,g,05}$	9,100	9,600	10,400	10,500	11,200	11,800
	$E_{90,g,mean}$				300		
	$E_{90,g,05}$				250		
Shear modulus	$G_{g,mean}$				650		
	$G_{g,05}$				540		
Rolling shear modulus	$G_{r,g,mean}$				65		
	$G_{r,g,05}$				54		
Apparent density	$\rho_{g,k}$	365	385	390	425	400	440
	$\rho_{g,mean}$	400	420	420	460	440	490

08

PREDIMENSIONING TABLE STRAIGHT BEAMS

ALWAYS STRAIGHT AHEAD.



GLUE LAMINATED TIMBER BSH STRENGTH CLASS GL24H

Depth in mm	Width in mm	Constant loads q incl. live load p in kN/m																
		2.50	3.00	3.50	4.00	4.50	5.00	6.00	7.00	8.00	9.00	10.0	11.0	12.0	15.0	20.0	25.0	30.0
360	240	9.64	9.15	8.74	8.40	8.11	7.85	7.42	7.07	6.78	6.53	6.32	6.13	5.96	5.44	4.73	4.24	3.87
	220	9.40	8.92	8.52	8.18	7.89	7.64	7.22	6.88	6.60	6.35	6.14	5.96	5.79	5.21	4.53	4.06	3.71
	200	9.15	8.67	8.28	7.95	7.67	7.42	7.01	6.68	6.40	6.16	5.96	5.78	5.55	4.97	4.32	3.87	3.54
	180	8.87	8.40	8.02	7.70	7.42	7.18	6.78	6.46	6.19	5.96	5.76	5.50	5.27	4.73	4.10	3.68	3.36
	160	8.57	8.11	7.73	7.42	7.15	6.92	6.53	6.22	5.96	5.72	5.44	5.19	4.97	4.46	3.87	3.47	3.04
	140	8.23	7.78	7.42	7.12	6.86	6.63	6.26	5.96	5.68	5.36	5.09	4.86	4.66	4.18	3.62	3.19	2.67
320	200	8.17	7.74	7.38	7.09	6.83	6.61	6.24	5.94	5.70	5.48	5.30	5.14	4.94	4.43	3.84	3.44	3.15
	180	7.92	7.49	7.15	6.86	6.61	6.40	6.04	5.75	5.51	5.30	5.12	4.89	4.69	4.21	3.65	3.27	2.99
	160	7.64	7.23	6.89	6.61	6.37	6.16	5.82	5.53	5.30	5.10	4.84	4.62	4.43	3.97	3.44	3.08	2.71
	140	7.34	6.94	6.61	6.34	6.11	5.91	5.57	5.30	5.06	4.77	4.53	4.33	4.15	3.72	3.22	2.84	2.37
	120	7.00	6.61	6.30	6.04	5.82	5.62	5.30	5.01	4.69	4.43	4.21	4.01	3.84	3.44	2.99	2.44	2.03
280	200	7.18	6.80	6.48	6.22	6.00	5.80	5.47	5.21	4.99	4.81	4.65	4.50	4.33	3.88	3.37	3.02	2.76
	180	6.96	6.58	6.28	6.02	5.80	5.61	5.29	5.04	4.83	4.65	4.49	4.29	4.11	3.68	3.20	2.86	2.62
	160	6.71	6.35	6.05	5.80	5.59	5.40	5.10	4.85	4.65	4.47	4.24	4.05	3.88	3.48	3.02	2.70	2.37
	140	6.44	6.09	5.80	5.56	5.36	5.18	4.88	4.65	4.43	4.18	3.97	3.79	3.63	3.25	2.82	2.49	2.08
	120	6.14	5.80	5.52	5.29	5.10	4.93	4.65	4.39	4.11	3.88	3.68	3.52	3.37	3.02	2.62	2.14	1.78
	100	5.80	5.47	5.21	4.99	4.81	4.65	4.33	4.01	3.76	3.55	3.37	3.21	3.08	2.76	2.22	1.78	1.49
240	200	6.19	5.85	5.58	5.35	5.15	4.98	4.70	4.47	4.29	4.13	3.99	3.86	3.72	3.33	2.89	2.59	2.36
	180	5.99	5.66	5.40	5.17	4.98	4.82	4.55	4.33	4.14	3.99	3.85	3.68	3.53	3.16	2.74	2.46	2.24
	160	5.78	5.46	5.20	4.98	4.80	4.64	4.38	4.16	3.99	3.83	3.64	3.48	3.33	2.98	2.59	2.32	2.03
	140	5.54	5.23	4.98	4.78	4.60	4.45	4.19	3.99	3.81	3.59	3.41	3.25	3.12	2.79	2.42	2.14	1.78
	120	5.28	4.98	4.74	4.55	4.38	4.23	3.99	3.77	3.53	3.33	3.16	3.02	2.89	2.59	2.24	1.83	1.53
	100	4.98	4.70	4.47	4.29	4.13	3.99	3.72	3.44	3.23	3.04	2.89	2.76	2.64	2.36	1.91	1.53	1.27
200	160	4.83	4.56	4.35	4.16	4.01	3.88	3.65	3.47	3.33	3.20	3.04	2.90	2.78	2.49	2.16	1.93	1.70
	140	4.63	4.37	4.16	3.99	3.84	3.71	3.50	3.33	3.18	3.00	2.85	2.72	2.60	2.33	2.02	1.78	1.49
	120	4.41	4.16	3.96	3.80	3.65	3.53	3.33	3.14	2.94	2.78	2.64	2.52	2.41	2.16	1.87	1.53	1.27
	100	4.16	3.93	3.74	3.58	3.44	3.33	3.10	2.87	2.69	2.54	2.41	2.30	2.20	1.97	1.59	1.27	1.06
160	120	3.54	3.34	3.18	3.04	2.93	2.83	2.66	2.52	2.36	2.23	2.11	2.02	1.93	1.73	1.50	1.22	1.02
	100	3.34	3.15	2.99	2.87	2.76	2.66	2.49	2.30	2.16	2.03	1.93	1.84	1.76	1.58	1.27	1.02	0.85
	80	3.11	2.93	2.78	2.66	2.56	2.44	2.23	2.06	1.93	1.82	1.73	1.65	1.58	1.36	1.02	0.82	0.68
120	100	2.51	2.37	2.25	2.15	2.07	2.00	1.87	1.73	1.62	1.53	1.45	1.38	1.32	1.18	0.96	0.77	0.64
	80	2.34	2.20	2.09	2.00	1.92	1.83	1.67	1.55	1.45	1.37	1.30	1.24	1.18	1.02	0.77	0.61	0.51
100	100	2.10	1.97	1.88	1.80	1.73	1.67	1.56	1.44	1.35	1.27	1.21	1.15	1.10	0.99	0.80	0.64	0.53
	80	1.95	1.83	1.74	1.67	1.61	1.53	1.39	1.29	1.21	1.14	1.08	1.03	0.99	0.85	0.64	0.51	0.43

The table only represents predimensioning and is not a substitute for a structural calculation.

09

CUSTOM JOINERY GENERAL INFORMATION

HIGHEST STANDARDS.

CUSTOM JOINERY – HERMAGOR FACTORY

5-axis CNC machining	X-axis (longitudinal direction)	40.00 m
	Y-axis (transverse direction)	5.80 m
	Z-axis (vertical travel)	1.25 m
	C-axis (turning)	360°
	B-axis (tilting)	± 110°
Precision	± 2 mm over 40 m length	
Spindle speed	Continuously variable from 0 to 10,000 rpm	
CNC control	NUM 1060W	
Online program transfer from CAD/CNC workplace		
Renishaw function for measuring of workpieces		
Laser-supported projection system for positioning the workpiece		
Tools	Automated tool change	
	Circular magazine with 16 different tools	
	Rotary magazine with 2 saw blades (max. diameter 750 mm)	
Workpieces	Fixing by means of vacuum work trestles and vacuum single holder	
Data processing interface	Autocad program	
	hsb-CAD program	
	*.btl files	

CUSTOM JOINERY – SACHSENBURG FACTORY

5-axis CNC machining	Hundegger K3 900 5-axis
Component dimensions	Length: up to 18.40 m
	Height: up to 900 mm
	Width: up to 280 mm
Data processing interface	SEMA program
	Dietrich's program
	*.bvn files

ADVANTAGES

- ⊕ High precision with optimized utilization of material
- ⊕ Variety of machining possibilities due to leading edge technology
- ⊕ Constant further development due to ongoing quality control
- ⊕ Professional support in the design phase, consultancy and service by qualified master carpenters
- ⊕ Quick and cost-effective installation on the construction site due to high degree of prefabrication

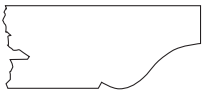
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CUSTOM JOINERY OPTIONS AND EXAMPLES



DESIGN OF RAFTER AND PURLIN HEADS

Profile 1



Profile 2



Profile 3



Profile 4



Profile 5



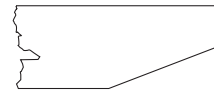
Profile 6



Profile 7

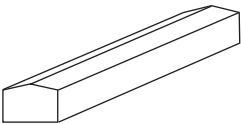


Profile 8

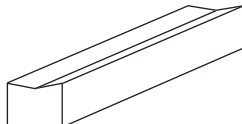


VALLEY AND HIP RAFTERS

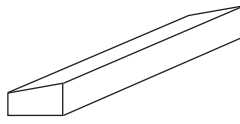
Hip rafters



Valley rafters

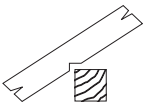


Tapered

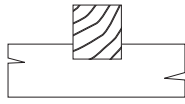


CARPENTRY JOINTS

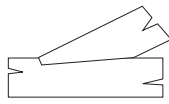
Rafter notch



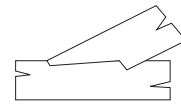
Cross cogging



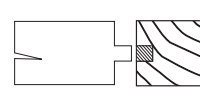
Stepped joint



Double stepped joint



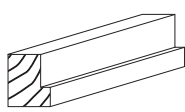
Tenon



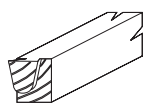
Forked support



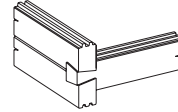
Rebate



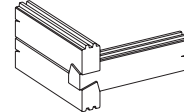
Dovetail joint



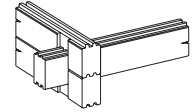
"Tiroler Schloss" corner joint



Dovetail



Log house



REVITALISATION OF MOUNTAIN HOTEL MALTA

The redesigned mountain hotel is located 2,000 m above sea level. A 60 m bridge, constructed from special components in glue laminated timber, links the parking areas to the hotel. The step-like panoramic terrace mounted on top stands out impressively.



We consider ourselves equal to modern timber construction and obligated to the next generation. With products involving the oldest and most beautiful material in the world. With boards that mean the world to us, sustainably of course.



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PRODUCT RANGE BY HASSLACHER NORICA TIMBER



Sawn timber



Surfaced timber



Finger jointed
structural timber GLT®



Laminated beams Duo/Trio



Glue laminated timber



Solid timber ceiling system



Cross-laminated timber
Noritec X-LAM



Glue laminated timber -
special components



Special products



Pellets



Shuttering boards



Pallets