WHERE
IDEAS
CAN
GROW.

MAYR MELNHOF HOLZ

MM profideck

glulam floor panels

WHERE IDEAS CAN GROW.

Mayr-Melnhof Holz Holding AG is one of the most prominent companies in the European wood-processing industry. As the market leader in the glued laminated timber (glulam) sector, it is a driving force behind the advancement of cross-laminated timber, the building material of the future. It is only companies with strong roots that are able to grow and surpass themselves, and indeed, Mayr-Melnhof Holz's roots go back as far as 1850. The corporate group draws on over 170 years of experience in processing the raw material, wood, which it sources exclusively from sustainably managed forests. For Mayr-Melnhof Holz, secure sources of supply, consistent traceability of the raw material's origin, transparent quality assurance of products and ongoing optimization of processes lay the foundations for reliability and product quality.

Mayr-Melnhof Holz products

MM masterline
glued laminated timber (glulam)

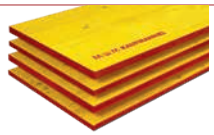
MM vistaline
duo and trio beams

MM profideck
glulam floor panels

MM blockdeck
glulam boards

MM HBE
solid wood building elements

MM crosslam
cross-laminated timber (CLT)



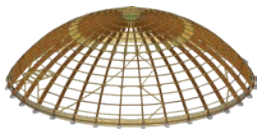
K1 yellowplan
shuttering panels

HT 20plus
formwork beams

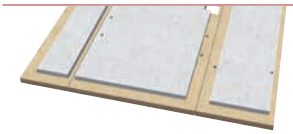
MM sawn timber

MM royalpellets

Engineered glulam and engineering services



MM complete
timber engineering
and complete systems
by HUTTEMANN



wood-concrete composite elements
by MMK

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Mayr-Melnhof Holz Holding AG
Turmgasse 67 · 8700 Leoben · Austria
T +43 3842 300 0
holding@mm-holz.com · www.mm-holz.com

MM profideck

glulam floor panels

Flooring for a better living environment

MM profideck floor panels are waterproof, solid wood elements made from glued laminated timber. They meet the strict requirements of the building and construction industry from both an economical and an ecological point of view.

All the group's production sites produce **MM profi**deck floor panels in thicknesses of between 8 and 26 cm, in a standard width of 62.5 cm and in lengths of up to 18.00 m. Depending on the requirements of the building in question and the technical possibilities at our sites, the panels can be made available with a double or multiple tongue and groove profile, a single tongue and groove profile or a smooth-edge profile. Upon request, every panel that leaves our factory can be delivered directly to the building site.

Note: in rooms that are heated to high temperatures, the joints between the elements may expand due to the shrinkage behaviour of wood. For this reason, element widths greater than 68 cm should be avoided.

Advantages

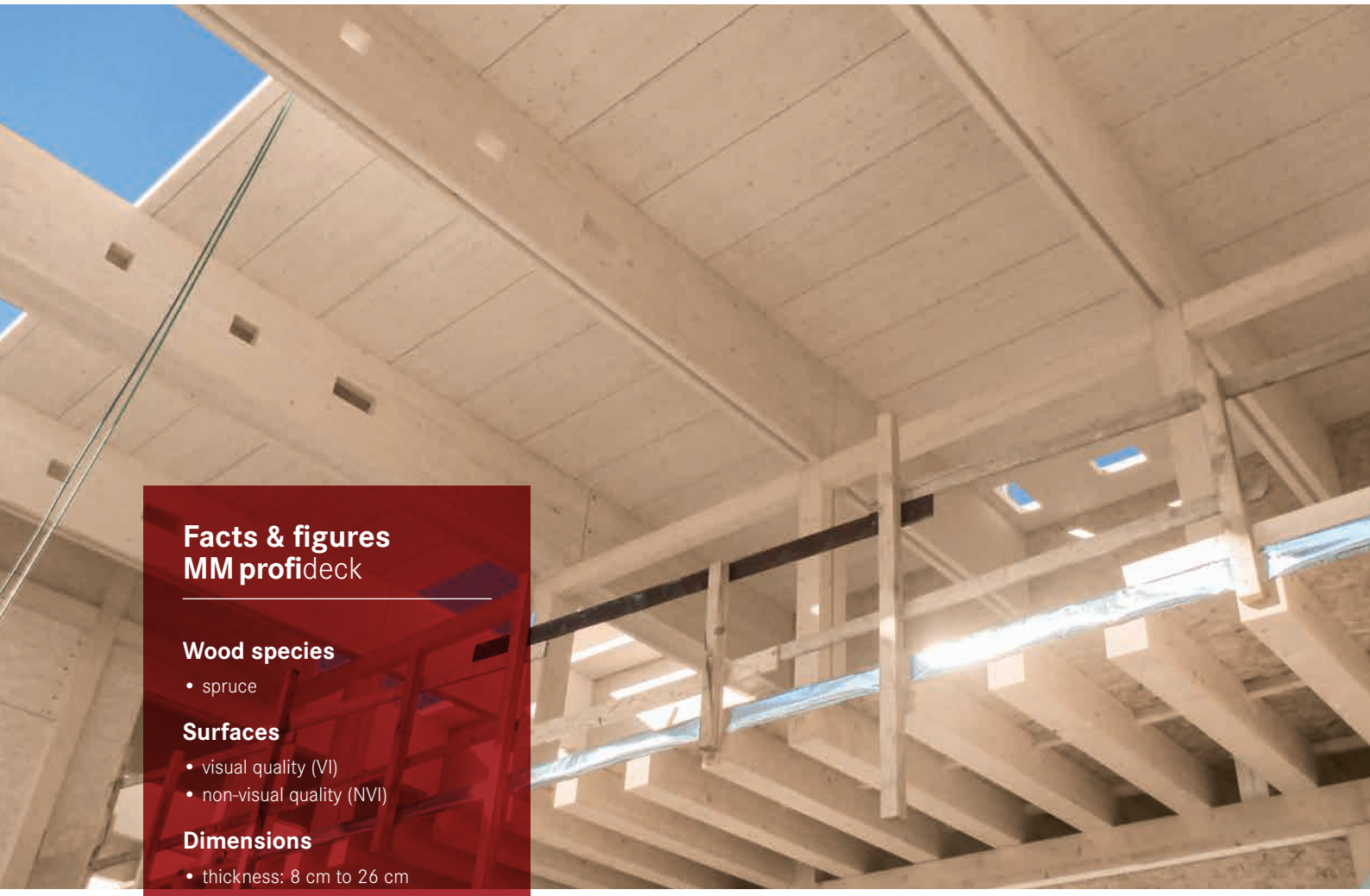
- High structural strength while at the same time weighing far less than a concrete slab
- Excellent strength of shape and dimensional stability
- High level of prefabrication and therefore low-noise and low-dust assembly as well as short construction times
- Precise sizing for individual project requirements
- Solid, sound construction method
- Suitable for creating structural braced frames
- Easy to process with woodworking tools
- Good heat insulation
- Pleasant indoor living environment

Structural elements

- Floors
- False floors
- Attic floors
- Roof panels

Areas of application

- Detached houses and multi-family houses
- Tourism buildings such as hotels and restaurants
- Commercial, office and industrial buildings
- Agricultural buildings such as stables
- Communal buildings such as nursery schools, schools and care homes



Facts & figures MM profideck

Wood species
- spruce

Surfaces
- visual quality (VI)
- non-visual quality (NVI)

Dimensions
- thickness: 8 cm to 26 cm (in 2 cm increments)
- visible width: 62.5 cm (standard)
- element width: 64 cm
- special widths: 120 cm (in 4 cm increments; on request)
- length: 4.00 m to 16.00 m

Definition of dimensions
- calculated width (example): 62.5 cm (visible width) + 1.5 cm (profile) = 64 cm (element width)

Product standard
- EN 14080:2013 (glued laminated timber)

Strength classes
- GL24h

Profiles
- double or multiple tongue and groove
- groove for slip feather (spline, loose tongue)
- rebate
- smooth edge

The quickest flooring to install in the world

Thanks to the concise industrial prefabrication of the individual elements, the flooring can be installed rapidly at the construction site. The floor elements can be exposed to stress as soon as they have been installed which means that subsequent work can be carried out straight away. Quick to install, easy to process and light in weight, MM profideck glulam floor panels offer an excellent alternative in every respect to conventional, reinforced concrete, or beam and block flooring systems.

CE

Certified according to the Construction Products Regulation (CPR)
EN 14080:2013

PEFC
PEFC/06-38-79
Promoting Sustainable Forest Management
www.pefc.org

Seal of approval for healthy living environments
(IBR Rosenheim)

Technical data

Product

Profiled glulam floor panels.

Wood species

Spruce (*Picea abies*) from domestic forests.

Grading of timber

Grading according to EN 14081 and DIN 4074.

Product standard

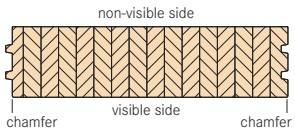
EN 14080:2013

Strength class

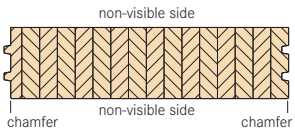
GL24h

Surface quality

Visual quality (VI)



Non-visual quality (NVI)



For a detailed description of the surface quality, see the **MM masterline** brochure.

Edges

Bottom chamfered, top chamfered

Service classes

MM profideck elements are suitable for use in service classes 1 and 2 according to EN 14080:2013.

Design values for GL24h according to EN 14080:2013

Bending strength	$f_{m,k}$	[N/mm²]	24
Tensile strength II	$f_{c,0,g,k}$	[N/mm²]	19.20
Tensile strength ⊥	$f_{c,90,g,k}$	[N/mm²]	0.50
Compressive strength II	$f_{c,0,g,k}$	[N/mm²]	24
Compressive strength ⊥	$f_{c,90,g,k}$	[N/mm²]	2.50
Modulus of elasticity	$E_{0,mean}$	[N/mm²]	11,500
Bulk density	$\rho_{E0,mean}$	[N/mm²]	385

Dimensioning

MM profideck elements are dimensioned in accordance with Eurocode 5 and considered as beams subject to axial bending stress over one or more spans. In the load-bearing capacity calculation, the bending and shear strength for horizontally installed glulam can be increased by up to 20%.

Bracing

- **MM profi**deck elements can be combined to form structurally effective flooring and contribute to the horizontal bracing in the building. Shear resistance must be verified in each case.
- Wood-based panels or panel strips (CE-marked for structural applications), nailed on by the customer, connect the individual elements together to form one overall component.
- Alternatively, horizontal bracing can also be achieved by nailing on perforated metal bands diagonally.

Bonding

Adhesive based on melamine resin (MUF, light adhesive joint), type 1 according to EN 301,approved for bonding load-bearing wood components in indoor and outdoor areas.

Adhesive for finger joints: MUF (EN 301-I-90-FJ-0,3-S).
Adhesive for surface bonding: MUF (EN 301-I-90-GP-0.3-S).

Lamella thickness

40 mm

Wood moisture content

12% (±2%)

Bulk density (mean value)

Spruce ..... approx. 430 kg/m³

Thermal conductivity

λ = 0.13 W/(mK)

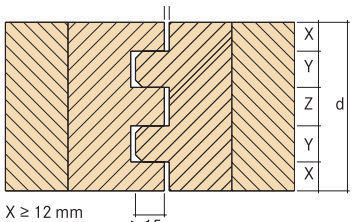
Water vapour diffusion resistance factor

μ = 20 to 40 (with a 12% moisture content)

Water vapour diffusion-equivalent air layer thickness

$s_d = \mu \times$ element thickness

Reaction to fire



X ≥ 12 mm
Y ≥ 15 mm
Z ≥ 16 mm
d ≥ 70 mm

D-s2, d0, Dfl-s1 when used as floor covering

The basic design charring rate β_0 is 0.65 mm/min. in accordance with EN 1995-1-2 (Table 3.1). For the verification of a fire resistance class (e.g. REI 30 or REI 60), the double groove and comb profile with additional rebate formation on the top side (45 x 20 mm on both sides for 90 mm cover board) fulfils the minimum requirement for joint formation. The minimum thickness for exposed ceilings as a fire-resistant, room-enclosing component is 80 mm for EI30 and 120 mm for EI60. See also ÖNORM B 1995-1-2 Verification-free constructions for solid timber wall components (Table A10) and ceilings (Table A11) for the requirements REI 30-60-90. **MM profi**deck is assigned to the board stacked ceiling category. For Germany, the provisions of DIN 4102-4 (May 2016 edition) apply: Table 10.15 (ceilings) and Table 10.24 (roofs). This standard is currently being revised; see also draft DIN 4102-4/A1:2023-04 Table 10.35 (ceilings) and Table 10.44 (roofs).

Shrinkage and swelling

In thickness and width, **MM profi**deck elements are subject to an average swelling and shrinkage ratio of 0.24% per 1% change in wood moisture content. In most cases, changes in length corresponding to 0.01% can be ignored.

In closed, normally ventilated rooms, a wood moisture content of 9% is to be expected. This corresponds to an equilibrium moisture content at a room temperature of 20 °C and a relative humidity of 50%.

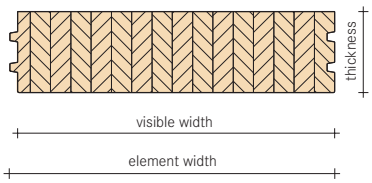
As a result of the shrinkage and swelling behaviour of wood, which is natural and therefore unavoidable, small shrinkage cracks can occur depending on the indoor climate.

The shrinkage and swelling behaviour of **MM profi**deck elements must be taken into account when making all the connections and implementing all the finishing details.

Dimensional tolerances

The dimensional tolerances for glulam are regulated in EN 14080:2013. The reference moisture measurement is 12%.

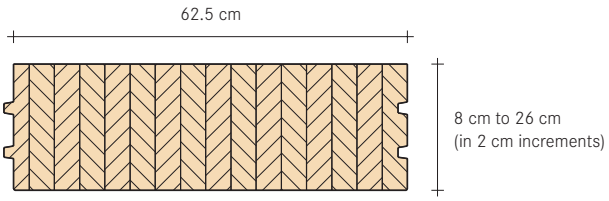
Element thickness	60 mm ≤ b ≤ 300 mm	
Thickness tolerance	±2 mm	
Element width	100 mm ≤ h ≤ 400 mm	400 mm < h ≤ 1,000 mm
Width tolerance	+4 mm/–2 mm	–2 mm
Element length	4 m to < 20 m	> 20 m
Length tolerance	±0.1%	±20 mm



Product portfolio

Dimensions

Width: 62.5 cm (visible width); element width: 64 cm; special widths: up to 120 cm (in 4 cm increments; on request)
Height: 8 cm to 26 cm (in 2 cm increments)
Length: 4.00 m to 16.00 m (standard; up to 23.00 m on request)



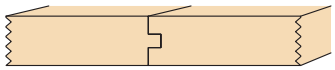
Definition of dimensions

Calculated width (example):
62.5 cm (visible width) + 1.5 cm (profile)
= 64 cm (element width)

Assembly profiles

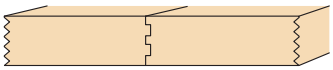
The connections are made with a double or multiple tongue and groove profile.

Single tongue and groove



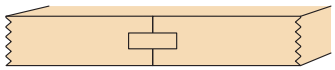
ED: 60 mm

Double tongue and groove



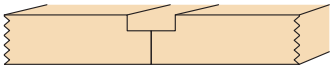
ED: 80 mm to 260 mm

Groove and groove



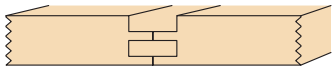
ED: 60 mm to 260 mm

Rebate and rebate



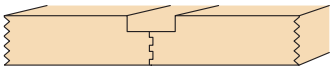
ED: 60 mm to 260 mm

Groove and rebate



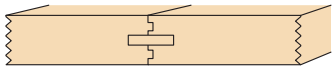
ED: 80 mm to 260 mm
when ED = 60 mm, NB = 15 mm and
FB = 1–15 mm

Double tongue and groove with rebate



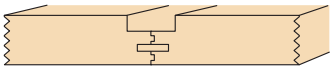
ED: 100 mm to 260 mm
when ED = 100 mm and FB = 1–15 mm

Double tongue and groove with groove



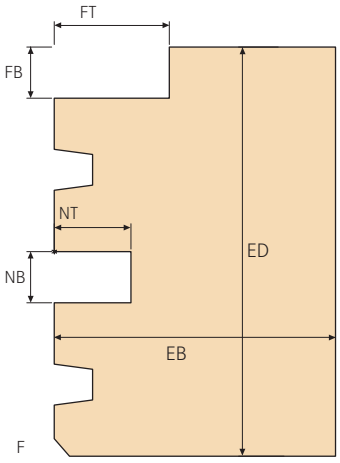
ED: 100 mm to 260 mm
when ED = 100 mm and NB = 15–20 mm

Double tongue and groove with groove and rebate



ED: 120 mm to 260 mm

Terminology and possible dimensions
Rebate depth (FT): 45/60/70 mm
Rebate width (FB): 1–25 mm (increments: 1 mm)
Groove depth (NT): 30 mm
Groove width (NB): 15–30 mm (increments: 1 mm)
Chamfer (F): 5 mm (other dimensions on request)
Element thickness (ED): 60–260 mm
(depending on the profile; increments: 20 mm)
Element width (EB): 200–960 mm (increments: 40 mm)



Minimum purchase quantity

As **MM profi**deck elements are made to order, a minimum purchase quantity of 65 m² is required.

Processing

Pre-assembled components processed according to your implementation and installation plans, including set lengths, notches, boreholes, cutouts and longitudinal rebates, are available on request.

Packaging

Delivered in packages following the assembly sequence, upon request.

Storage

The elements must not be exposed to the weather under any circumstances.

Assembly

- Delivery direct to the building site, by arrangement.
- Quick assembly as each element is indicated and their positions clearly allocated on the installation plan.
- Safe installation by screwing ring bolts or mounting loops into the pre-mounted threaded inserts (type BL; outer diameter: 22 mm; internal thread: M12; length: 60 or 100 mm), available on request. Four ring bolts are supplied with each order.
- The special tongue and groove profiles facilitate installation of the elements, doing away with tricky insertion of central tongues.
- The floor panels can be exposed to stress as soon as they have been installed so there is no need to wait before carrying out subsequent work.

Surface treatment

- A water-soluble primer can be applied to minimize the absorption of water during the installation period.
- As a result of the shrinkage and swelling behaviour of wood, which is natural and therefore unavoidable, small shrinkage cracks can occur depending on the indoor climate.
- We recommend waiting until the equilibrium moisture content has been restored before applying a coat of paint.

Quality assurance

Production controls are carried out in the factory and third-party monitoring is performed by independent institutes in Austria and Germany every six months. Quality assurance is carried out at Mayr-Melnhof Holz through continuous product tests and by documenting the processes.

Special designs

Acoustic profiles, sanded surfaces or various other colour glazes are possible on request.

Floor structures

Sound insulation in floor constructions

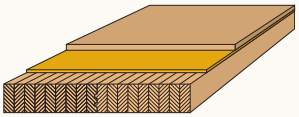
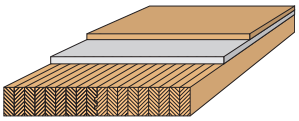
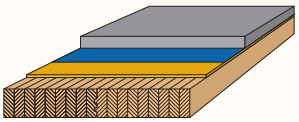
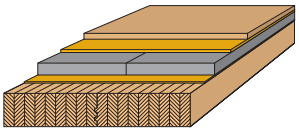
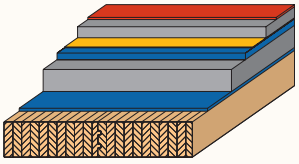
Sound insulation in multi-storey buildings is a broad and complex subject area that requires high-level expertise and detailed planning.

The sources listed below provide comprehensive information on this subject:

- **Deckenkonstruktionen für den mehrgeschossigen Holzbau** (Band 20, Schriftenreihe Holzforschung Austria, May 2009)
- **Schallschutz von Decken** (Lignatec 22/2008, LIGNUM, July 2008)

You can find illustrations of floor structures at: www.dataholz.com

Floor structure

		Weight [kg/m²]	Construction height [mm]	Airborne sound R_w dB	Impact sound $L_{N,w}$ dB
	• particle board (25 mm) • impact sound insulation panel (mineral fibres, 12/10 mm, 80–110 kg/m³) • **MM profi**deck (120 mm)	72	155	49	67
	• particle board (25 mm) • dry fill (30 mm) • **MM profi**deck (120 mm)	76	175	49	70
	• cement underlayment (50 mm) • water-tight membrane (0.2 mm) • mineral fibre board (12/10 mm, 80–110 kg/m³) • **MM profi**deck (120 mm)	164	180	53	66
	• particle board (25 mm) • impact sound insulation panel (mineral fibres, 12/10 mm, 80–110 kg/m³) • concrete slab (dry, 500/500/50 mm, 120 kg/m²; slab spacing: appriox. 2 mm) • impact sound insulation (3 mm) • **MM profi**deck (140 mm)	182	228	56	61
	• flooring (10 mm) • cement screed (50 mm) • water-tight membrane (0.2 mm) • impact sound insulation (30 mm, s′ ≤ 9 MN/m³) • backfill (100 mm, loose, ρ > 1400 kg/m³) • trickling protection • **MM profi**deck (160 mm)	328	350	≥ 65	≤ 47

Sources: Informationsdienst Holz ("Holzbauhandbuch, Reihe 3, Teil 3, Folge 3") and Schweizer Lignum ("IP Holz 933d: Schalldämmung von Geschossdecken aus Holz").

Spans

Preliminary design

A structural analysis must be carried out prior to implementation.

- Field loads are not taken into account.
- The self-weight of **MM profi**deck must be taken into account.
- Uniform loading.
- Creep deformation is not taken into account.
- The deformation criterion should be selected according to the requirement: here, it is l/300 or l/400.
- Tables applicable for: GL24h.

Requirements

Plumb-vertical imposed load	=	2.00 kN/m²
Lightweight partition walls	=	0.75 kN/m²
Floor covering (1 cm)	=	0.20 kN/m²
Floor structure (screed, 6 cm)	=	1.50 kN/m²
Self-weight (**MM profi**deck, 12 cm)	=	0.55 kN/m²
Load q	=	5.00 kN/m²

Single-span beam

Load q [kN/m²]	**Deformation f = l/300** element thickness [mm]								**Deformation f = l/400** element thickness [mm]							
	100	120	140	160	180	200	220	240	100	120	140	160	180	200	220	240
2.50	4.54	5.45	6.36	7.27	8.18	9.08	9.99	10.90	4.12	4.95	5.78	6.60	7.43	8.25	9.08	9.90
3.00	4.27	5.13	5.98	6.84	7.69	8.55	9.40	10.26	3.88	4.66	5.43	6.21	6.99	7.77	8.54	9.32
3.50	4.06	4.87	5.68	6.50	7.31	8.12	8.93	9.75	3.69	4.42	5.16	5.90	6.46	7.38	8.12	8.85
4.00	3.88	4.66	5.43	6.21	6.99	7.77	8.54	9.32	3.53	4.23	4.94	5.64	6.35	7.06	7.76	8.47
4.50	3.73	4.48	5.23	5.97	6.72	7.47	8.21	8.96	3.39	4.07	4.75	5.43	6.11	6.78	7.46	8.14
5.00	3.60	4.32	5.05	5.77	6.49	7.21	7.93	8.65	3.27	3.93	4.58	5.24	5.89	6.55	7.21	7.86
5.50	3.49	4.19	4.89	5.59	6.28	6.98	7.68	8.38	3.17	3.80	4.44	5.07	5.71	6.34	6.98	7.61
6.00	3.39	4.07	4.75	5.43	6.11	6.78	7.46	8.14	3.08	3.70	4.31	4.93	5.55	6.16	6.78	7.40

Two-span and three-span beam (same spans)

Load q [kN/m²]	**Deformation f = l/300** element thickness [mm]								**Deformation f = l/400** element thickness [mm]							
	100	120	140	160	180	200	220	240	100	120	140	160	180	200	220	240
2.50	5.64	6.77	7.90	9.02	10.15	11.28	12.41	13.54	5.12	6.15	7.17	8.20	9.22	10.25	11.28	12.30
3.00	5.31	6.37	7.43	8.49	9.55	10.62	11.68	12.74	4.82	5.79	6.75	7.72	8.68	9.65	10.61	11.58
3.50	5.04	6.05	7.06	8.07	9.08	10.08	11.09	12.10	4.58	5.50	6.41	7.33	8.25	9.16	10.08	11.00
4.00	4.82	5.79	6.75	7.72	8.68	9.65	10.61	11.58	4.38	5.26	6.13	7.01	7.69	8.76	9.64	10.52
4.50	4.63	5.56	6.49	7.42	8.35	9.27	10.20	11.13	4.21	5.05	5.90	6.74	7.58	8.43	6.27	10.11
5.00	4.47	5.37	7.27	7.16	8.06	8.95	9.85	10.75	4.06	4.88	5.69	6.51	7.32	8.13	8.95	9.76
5.50	4.33	5.20	6.07	6.49	7.81	8.67	9.54	10.41	3.94	4.73	5.51	6.30	7.09	7.88	8.67	9.46
6.00	4.21	5.05	5.90	6.74	7.58	8.43	9.27	10.11	3.82	4.59	5.36	6.12	6.89	7.65	8.42	9.19

These tables are provided for reference purposes when carrying out the preliminary design. A precise structural verification should be carried out prior to implementation.

Our sites

Sweden

Bergkvist Siljan Insjön
saw mill

Bergkvist Siljan Blyberg
saw mill

Bergkvist Siljan Mora
saw mill

Bergkvist Siljan Skog
round timber procurement

Mayr-Melnhof Holz Wismar
second transformation

Germany

The Czech Republic

Mayr-Melnhof Holz Paskov
saw mill, pellets production

Mayr-Melnhof Holz Olsberg
second transformation

Austria

Mayr-Melnhof Holz Leoben
saw mill, pellets production, second transformation

Mayr-Melnhof Holz Reuthe
second transformation, pellets production

KAUFMANN BAUSYSTEME

Mayr-Melnhof Holz Gaishorn am See
second transformation

MMK

Contact details of our second transformation sites:

MAYR MELNHOF HOLZ

Mayr-Melnhof Holz Leoben GmbH
Turmgasse 67 · 8700 Leoben · Austria
T +43 3842 300 0 · leoben@mm-holz.com

Mayr-Melnhof Holz Gaishorn GmbH
Nr. 182 · 8783 Gaishorn am See · Austria
T +43 3617 2151 0 · gaishorn@mm-holz.com

Mayr-Melnhof Holz Reuthe GmbH
Vorderreuthe 57 · 6870 Reuthe · Austria
T +43 5574 804 0 · reuthe@mm-holz.com

Mayr-Melnhof Holz Wismar GmbH
Am Torney 14 · 23970 Wismar · Germany
T +49 3841 221 0 · wismar@mm-holz.com

Mayr-Melnhof Holz Olsberg GmbH
Industriestraße · 59939 Olsberg · Germany
T +49 2962 806 0 · olsberg@mm-holz.com

www.mm-holz.com

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Photos: Bergkvist Siljan, Dan Skanska, Gerhard Kreuzbichler, MMH Archiv, Klaus Morgenstern