



WHERE  
IDEAS  
CAN  
GROW.

**M**  **M**  
MAYR MELNHOF HOLZ



**MM** blockdeck

glulam boards





## 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



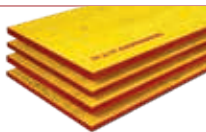
**MM blockdeck**  
glulam boards



**MM HBE**  
solid wood building elements



**MM crosslam**  
cross-laminated timber (CLT)



**K1 yellowplan**  
shuttering panels



**HT 20plus**  
formwork beams

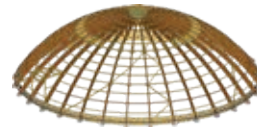


**MM sawn timber**

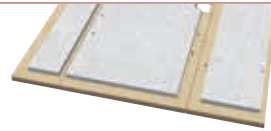


**MM royalpellets**

Engineered glulam and engineering services



**MM complete**  
timber engineering  
and complete systems  
by HÜTTEMANN



**XC**  
LAM CONCRETE  
wood-concrete composite elements  
by MMK

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# MM blockdeck

glulam boards

## Ecological building with aesthetic appeal

The Mayr-Melnhof Holz group's factories produce glulam boards (or glued laminated timber boards) under the brand name "MM blockdeck" for the construction of wall, floor and roof structures. MM blockdeck is made of high-quality, bonded spruce lamellas in thicknesses of between 44 mm and 160 mm, and in lengths of up to 18.00 m.

MM blockdeck boards are produced at our Reuthe factory and are available as standard in qualities A/A and A/C to meet the strictest aesthetic requirements. For larger order quantities, customized production of the panels with tailor-made profiles is also possible in our other factories.

## Advantages

- Selected A-grade visual surface quality available on both sides, on request
- High structural strength with low self-weight compared to bulk density
- Excellent strength of shape and dimensional stability
- Ideal for renovations due to the compact dimensions
- Quick and easy to install
- Individual profiles and made-to-order lists

## Structural elements

- Walls
- Floors
- Cantilever roof structures
- Tied roof structures



## Areas of application

- Detached houses and multi-family houses
- Tiny houses
- Communal buildings such as nursery schools, schools and care homes
- Tourism buildings and holiday homes
- Refurbishing old buildings



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



Promoting  
Sustainable Forest  
Management  
www.pefc.org



Seal of approval for healthy  
living environments  
(IBR Rosenheim)



## Facts & figures MM blockdeck

### Wood species

- Spruce

### Surfaces

- A/A: visual quality (VI) on both sides
- A/C: visual quality (VI) on one side
- C/C: non-visual quality (NVI) on both sides

### Dimensions

- Thickness: 44 mm to 160 mm
- Width: 19.4 cm (visible width); element width: 20 cm
- Length: 12 m (standard); up to 18 m on request

### Product standard

- EN 14080:2013

### Strength class

- GL24h

### Profile

- Double tongue and groove

## Durable, high-quality and unique

Glulam boards (glued laminated timber boards) from Mayr-Melnhof Holz are used for both traditional and modern timber buildings.

In external walls, the specially selected spruce wood offers perfect resistance to the wind and weather, as well as effective water vapour diffusion. In the interior area, walls and floors made from **MM blockdeck** ensure a pleasant and well-balanced indoor climate.

**MM blockdeck** is a dry building material which can also be used without any further chemical treatment, depending on the building requirements.

# Technical data

## Product

Glulam boards (profiled glued laminated timber)

## Wood species

Spruce (*Picea abies*)

## Product standard

EN 14080:2013

## Design values for GL24h according to EN 14080:2013

Bending strength	$f_{m,k}$	[N/mm <sup>2</sup> ]	24
Tensile strength II	$f_{t,0,k}$	[N/mm <sup>2</sup> ]	19.20
Tensile strength $\perp$	$f_{t,90,k}$	[N/mm <sup>2</sup> ]	0.50
Compressive strength II	$f_{c,0,k}$	[N/mm <sup>2</sup> ]	24
Compressive strength $\perp$	$f_{c,90,k}$	[N/mm <sup>2</sup> ]	2.50
Modulus of elasticity	$E_{0,mean}$	[N/mm <sup>2</sup> ]	11,500
Bulk density	$\rho_{E0,mean}$	[N/mm <sup>2</sup> ]	385

## Lamella thickness

With a lamella thickness of up to 40 mm, **MM blockdeck** is suitable for use in service classes 1 and 2 according to EN 14080:2013.

## Bonding

Adhesive based on melamine resin (MUF), 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)

## Colour of the bonded joint

Light bonded joint (melamine resin adhesive)

## Wood moisture content

12% ( $\pm 2\%$ )

## Bulk density (mean value)

Spruce ..... approx. 430 kg/m<sup>3</sup>

## Thermal conductivity

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

## Water vapour diffusion resistance factor

$\mu = 20$  to  $40$  (with a 12% moisture content)

## Water vapour diffusion-equivalent air layer thickness

$s_d = \mu \times \text{element thickness}$

## Technical values

Thickness [mm]	Number of lamellas	Weight [kg/m <sup>2</sup> ]	Thermal resistance R [m <sup>2</sup> K]/W	Thermal transmittance h W/[m <sup>2</sup> K]
44	2	20.20	0.34	2.95
62	2	28.20	0.48	2.10
95	3	43.70	0.73	1.37
125	4	57.50	0.96	1.04
160	5	73.50	1.24	0.81

## Reaction to fire

Classification of **MM blockdeck** elements

### According to EN 13501

Euroclass ..... D  
Smoke opacity ..... s2  
Burning droplets ..... d0

### According to DIN 4102-1

B2 (normally inflammable)

The charring rate  $\beta_0$  is 0.7 mm/min according to EN 1995-1-2. For the verification of the fire-resistance rating, the double tongue and groove profile on **MM blockdeck** meets the minimum requirements for the joint design (e.g. class REI 30 or REI 60).

## Emission class

This product is well within the limit values of emission class E1 ( $\leq 0.1 \text{ ppm HCHO}$ ).

# Product portfolio

## Dimensions

**Thicknesses:** 44, 62, 95, 125 and 160 mm

**Width:** 200 mm (charged dimension)

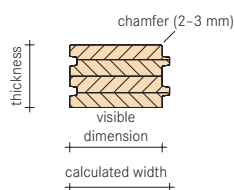
**Length:** max. 18 m

**Visible dimension:** 194 mm

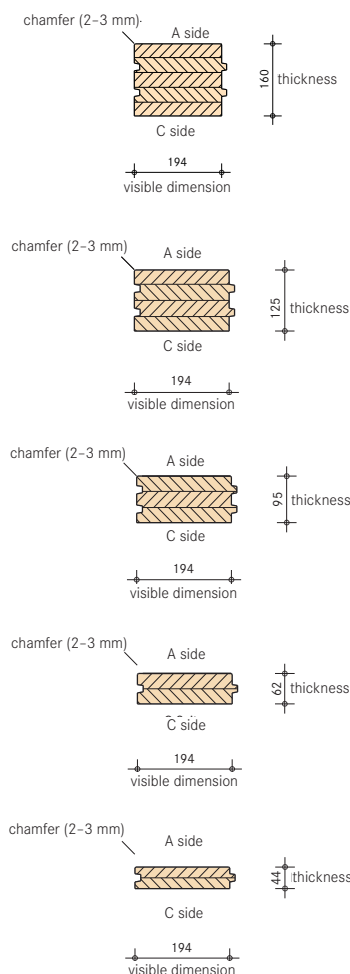
**Tongue dimension:** 205 mm

**Charged dimension:** 200 mm

Other dimensions on request.



## Element dimensions



## Lengths

Special dimensions and individual profiles with appropriate batch size available on request. Untrimmed (ordered lengths + approx. 5 cm).

## Goods made to order

Cut to size on request.

## Packaging

Delivered in film-wrapped packages.

## Storage

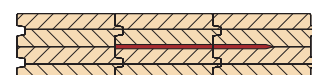
MM blockdeck boards must not be exposed to the weather under any circumstances.



## Assembly

Design proposals: connect the MM blockdeck boards together by pre-drilling holes (approx. every 150 cm) and then inserting nails (8 × 300 mm) or self-tapping screws.

## Nailing



## Paints and coatings

- Optional application of a waterproof coating agent to minimize the absorption of water during the installation period.
- We recommend waiting until the equilibrium moisture content has been restored before applying the coat.





# Quality

## Surface quality

Planed, profiled at the side

A/A: visual quality (VI) on both sides (A = selected quality)

A/C: visual quality (VI) on one side

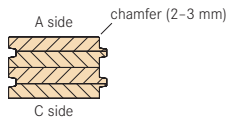
C/C: non-visual quality (NVI) on both sides

## Edges

A side: chamfered (approx. 2–3 mm)

C side: sharp edges

Sharp edges on both sides possible on request.



## Surface

- Untreated
- Colourless primer on request

## Shrinkage and swelling

In thickness and width, **MM blockdeck** 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 blockdeck** boards must be taken into account when making all connections and implementing all finishing details.

## Dimensional tolerances

At least dimensional stability class 2 according to EN 336 (load-bearing structural timber).

**Widths and heights:**  $\pm 1.0$  mm  $b, h \leq 10$  cm  
 $\pm 1.5$  mm  $b, h \geq 10$  cm

**Twist:**  $\leq 4$  mm along a length of 2 m

**Bow:**  $\leq 4$  mm along a length of 2 m

## 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.

# Spans



## Design tables

These tables are provided for reference purposes only when carrying out the preliminary design. Prior to implementation, an accurate structural verification must be carried out in accordance with the currently valid design standards.

### Assumptions re system

- Uniform loading.
- Shear and creep deformations are not taken into account.
- The uniform loading  $q$  is composed of:
  - g ... constant load (incl. the beam dead load);
  - p ... imposed load or snow load.

**Note:** stricter requirements may apply to flexure in residential constructions.

### Assumptions re material (GL24h)

Modulus of elasticity:	$E = 11,000$	[N/mm <sup>2</sup> ]
Permissible bending stress:	$\sigma_{b\ zul} = 11$	[N/mm <sup>2</sup> ]
Permissible shear stress:	$T_{zul} = 0.90$	[N/mm <sup>2</sup> ]
Permissible deformation:	$F_{zul} = 1/300$	[m]
	$F_{zul} = 1/400$	[m]

### Single-span beam

Load Q [kN/m]	$f_{zul.} = 1/300$ Board thickness [mm]					$f_{zul.} = 1/400$ Board thickness [mm]				
	44 mm	62 mm	95 mm	125 mm	160 mm	44 mm	62 mm	95 mm	125 mm	160 mm
2.50	2.00	2.82	4.32	5.68	7.27	1.82	2.56	3.92	5.16	6.61
3.00	1.88	2.65	4.06	5.35	6.84	1.71	2.41	3.69	4.86	6.22
3.50	1.79	2.52	3.86	5.08	6.50	1.62	2.29	3.51	4.61	5.91
4.00	1.71	2.41	3.69	4.86	6.22	1.55	2.19	3.35	4.41	5.65
4.50	1.64	2.32	3.55	4.67	5.98	1.49	2.10	3.22	4.24	5.43
5.00	1.59	2.24	3.43	4.51	5.77	1.44	2.03	3.11	4.10	5.24
5.50	1.54	2.17	3.32	4.37	5.59	1.40	1.97	3.02	3.97	5.08
6.00	1.49	2.10	3.22	4.24	5.43	1.36	1.91	2.93	3.86	4.93

### Two-span beam

Load Q [kN/m]	$f_{zul.} = 1/300$ Board thickness [mm]					$f_{zul.} = 1/400$ Board thickness [mm]				
	44 mm	62 mm	95 mm	125 mm	160 mm	44 mm	62 mm	95 mm	125 mm	160 mm
2.50	2.68	3.78	5.79	7.62	9.75	2.44	3.43	5.26	6.92	8.86
3.00	2.52	3.56	5.45	7.17	9.18	2.29	3.23	4.95	6.51	8.34
3.50	2.40	3.38	5.18	6.81	8.72	2.18	3.07	4.70	6.19	7.92
4.00	2.29	3.23	4.95	6.51	8.34	2.08	2.94	4.50	5.92	7.57
4.50	2.20	3.11	4.76	6.26	8.02	2.00	2.82	4.32	5.69	7.28
5.00	2.13	3.00	4.60	6.05	7.74	1.93	2.72	4.17	5.49	7.03
5.50	2.06	2.91	4.45	5.86	7.50	1.87	2.64	4.04	5.32	6.81
6.00	2.00	2.82	4.32	5.69	7.28	1.82	2.56	3.93	5.17	6.62

### Three-span beam

Load Q [kN/m]	$f_{zul.} = 1/300$ Board thickness [mm]					$f_{zul.} = 1/400$ Board thickness [mm]				
	44 mm	62 mm	95 mm	125 mm	160 mm	44 mm	62 mm	95 mm	125 mm	160 mm
2.50	2.48	3.50	5.36	7.05	9.03	2.26	3.18	4.87	6.41	8.20
3.00	2.34	3.29	5.05	6.64	8.50	2.12	2.99	4.58	6.03	7.72
3.50	2.22	3.13	4.79	6.31	8.07	2.02	2.84	4.35	5.73	7.33
4.00	2.12	2.99	4.58	6.03	7.72	1.93	2.72	4.16	5.48	7.01
4.50	2.04	2.88	4.41	5.80	7.42	1.85	2.61	4.00	5.27	6.74
5.00	1.97	2.78	4.26	5.60	7.17	1.79	2.52	3.87	5.09	6.51
5.50	1.91	2.69	4.12	5.42	6.94	1.73	2.44	3.75	4.93	6.31
6.00	1.85	2.61	4.00	5.27	6.74	1.69	2.37	3.64	4.79	6.13

# Sound insulation values

## Sound insulation in floor constructions

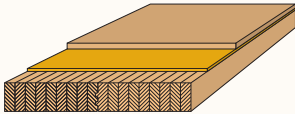
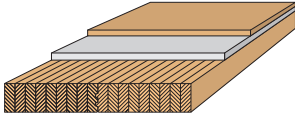
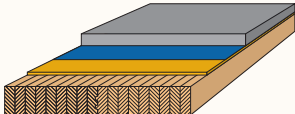
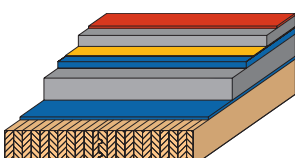
Sound insulation in multi-storey buildings is a broad and complex subject area that requires high-level expertise and detailed planning.

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 more information about floor structures at: [www.dataholz.com](http://www.dataholz.com)



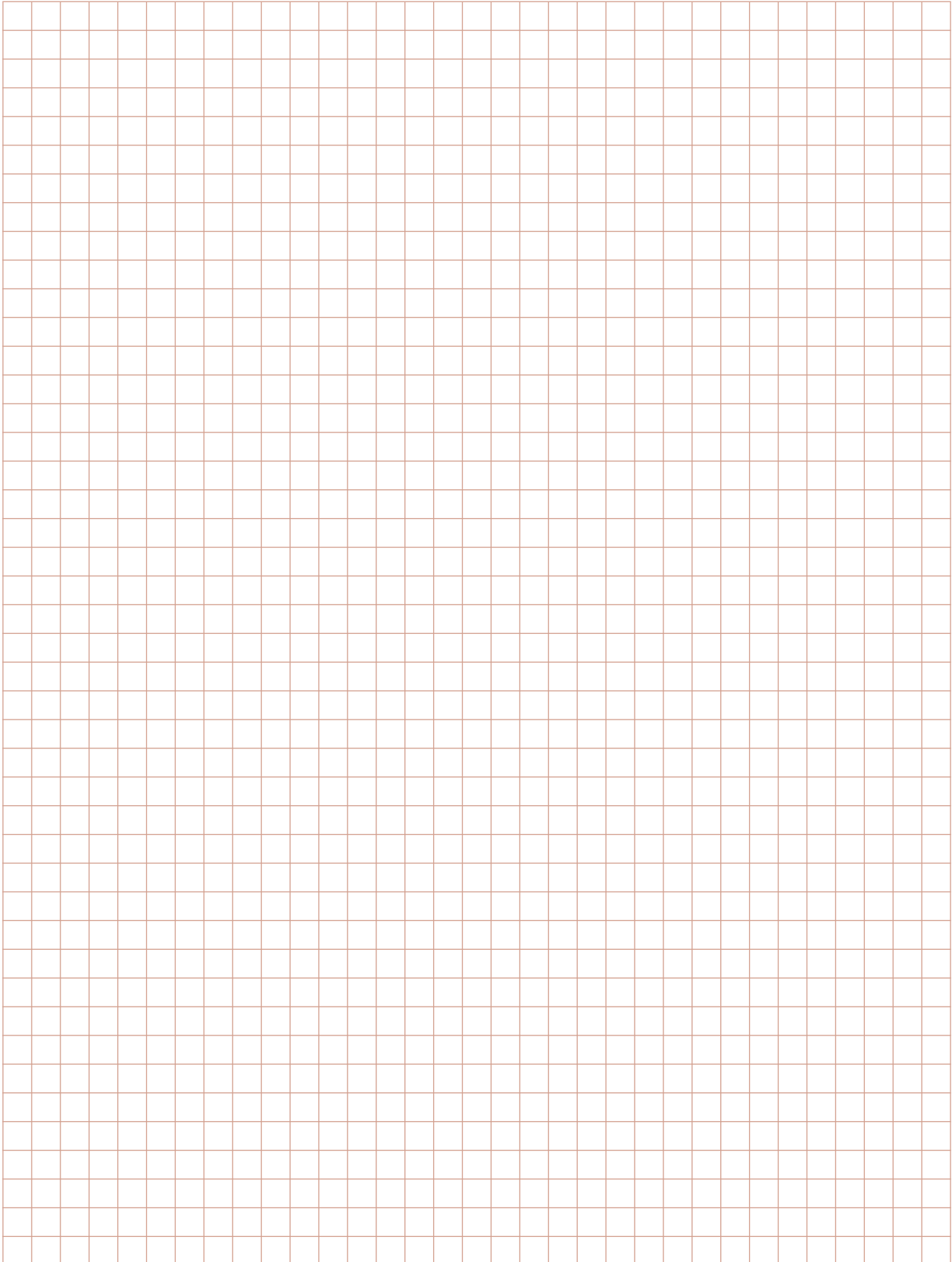
		Weight [kg/m <sup>2</sup> ]	Construction height [mm]	Airborne sound R <sub>w</sub> dB	Impact sound L <sub>N,w</sub> dB
	<ul style="list-style-type: none"> <li>• particle board (25 mm)</li> <li>• impact sound insulation panel (mineral fibres, 12/10 mm, 80-110 kg/m<sup>3</sup>)</li> <li>• <b>MM blockdeck</b> (125 mm)</li> </ul>	74	160	49	67
	<ul style="list-style-type: none"> <li>• particle board (25 mm)</li> <li>• dry fill (30 mm)</li> <li>• <b>MM blockdeck</b> (125 mm)</li> </ul>	78	180	49	70
	<ul style="list-style-type: none"> <li>• cement underlayment (50 mm)</li> <li>• water-tight membrane (0.2 mm)</li> <li>• impact sound insulation panel (mineral fibres, 12/10 mm, 80-110 kg/m<sup>3</sup>)</li> <li>• <b>MM blockdeck</b> (125 mm)</li> </ul>	166	185	53	66
	<ul style="list-style-type: none"> <li>• flooring (10 mm)</li> <li>• cement screed (50 mm)</li> <li>• water-tight membrane (0.2 mm)</li> <li>• impact sound insulation (30 mm, s' ≤ 9 MN/m<sup>3</sup>)</li> <li>• backfill (100 mm, loose, ρ &gt; 1,400 kg/m<sup>3</sup>)</li> <li>• trickling protection</li> <li>• <b>MM blockdeck</b> (160 mm)</li> </ul>	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")



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## Notes

A large, empty grid of small squares, typical of graph paper, intended for taking notes.



# Our sites



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