Lifting Systems with EC-Declaration of Conformity

MM crosslam

Cross-laminated timber (CLT)

Lifting loads safely

Introduction

The following instructions are intended to prevent accidents and increase safety when lifting loads.

The relevant accident prevention regulations must be observed by all employees. In case of doubt or discrepancies, the current version of the accident prevention regulations shall apply.

In addition, any laws or national regulations of other countries must be observed and complied with by the client.

1. Worker

1.1. Qualification

Skilled persons in terms of the Work Equipment Ordinance are persons who have the necessary technical knowledge, professional experience and offer a guarantee that they will carry out their work conscientiously.

In principle, the crane operator is responsible for the safe handling of loads based on the specialist knowledge acquired during the crane operator examination.

The crane operator can be assisted by a rigger who sling the load. Slinging means, establishing a connection between the load and the load hook on the crane.

1.2. Instruction

The riggers must be instructed by the employer and have the necessary knowledge to safely sling the load to the crane hook.

The employer must provide the necessary training and instruction. To ensure safe manipulation of the **MM cross**lam elements, the rigger must be familiar with the communication signals and know the planned lifting process..

1.3. Personal protective equipment

The personal protective equipment of a rigger includes head protection (helmet), protective gloves, work shoes with steel toecaps and hearing protection in noisy areas. Protective equipment against falls from a height may also be required for certain types of work.

1.4. Reporting defects

If an employee discovers that a lifting point is defective, they must report this immediately to the construction supervisor and stop the lifting operation.

2. Crane

When selecting a location for cranes, it is important to ensure that the ground has sufficient load-bearing capacity and that the existing outriggers are used. Crane operation must be stopped at a wind speed of 13 m/s.
Furthermore, lifting gear designed for the weight of the element to be lifted must be used for handling on the construction site.
Ensure that loads are never lifted above people.

It should be noted that there are residual risks when elements are manipulated, for example swaying of the elements after lifting.

2.1. Slinging of MM crosslam elements

The weights of the **MM cross**lam elements are to be taken from the packing list, the drawing, the label on the element or requested from the construction supervisor. **MM cross**lam elements may only be attached if they are labeled and the weight is known.

The following points must be observed:

- For panels fitted with more than 3 loaded lifting points, a load distributor must be used without exception.
- Never place two lifting-hooks in one lifting sling. Only use load hooks with load hook safety device.
- The application notes for MM lifting systems in the instruction must be strictly observed.
- Elements that do not offer a secure attachment option may not be attached or may only be attached after appropriate instruction by the construction supervisor.
- Sling ropes must be free of damage or kinks.
- Lifting systems must be undamaged and may only be used for the assembly process on the construction site.
- Sling ropes must not be passed directly over the crane hook.
- Lifting gear must be undamaged and may only be used for the assembly process on the construction site.n.
- Large and long **MM cross**lam elements must be guided when manipulating with guide ropes if these parts can collide, get caught or injure people when being pulled up.

After slinging, make a test lift at a low height. Instabilities can be detected and corrected in this way.
The installation of installation aids (rod dowels and/or single-use lifting slings) is installed out by the manufacturer. The position/location and quantity are marked in the production drafts and are presented to the client for checking. If in doubt, consult the producer of the lifting system.

The following ordinances, laws and regulations in their valid versions serve as the legal basis:

- Work Equipment Ordinance (AM-VO)
- Construction Workers Protection Ordinance (BauV)
- Machinery Regulation ((EU) 2023/1230)
- Employee Protection Act (ASchG)

General Information

Generally, tower cranes or mobile cranes are used on construction sites to lift the **MM crosslam** elements. To reduce the dynamic loads, the lifting speed is limited to 35 m/min.
Lifting angles of less than 60° are not permitted, as a decrease in the lifting angle results in a considerable reduction in load capacity.

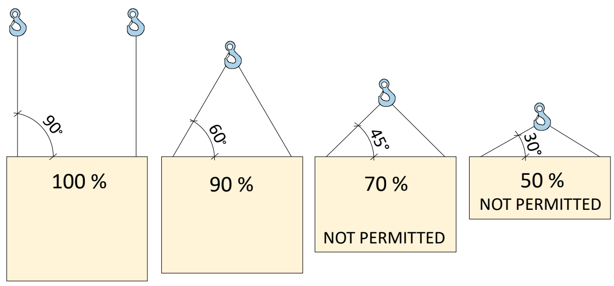


Figure 1: Reduction of the load-bearing capacity depending on the lifting angle

All loads contained in this document have been calculated assuming a lifting angle α of 60°.

The lifting equipment is positioned taking openings into account by calculating the centre of gravity of the elements. The required edge distances are already considered.

1. Lifting horizontal elements

For floor elements with four lifting points on the sides, only three points may be considered without load distributor, which means a 25% reduction in the load-bearing capacity without load distributor. This approach is explicitly not supported or recommended by Mayr-Melnhof Holz.
Figure 2 shows that although the lifting points are arranged symmetrically, the total load is not balanced across the four strands.

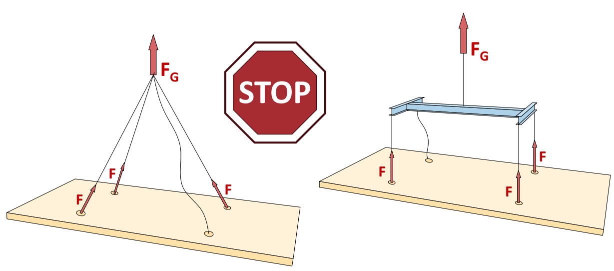


Figure 2: Mayr-Melnhof Holz explicitly does not support lifting without a load distributor

In Figure 3, an even load balance is achieved with the help of load distributor or support beams.

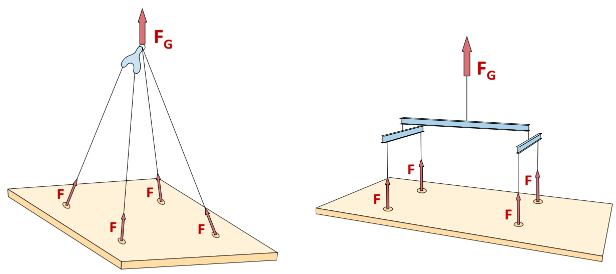


Figure 3: Lifting with load distributor or support beams

The publisher of this declaration points out that **MM crosslam** elements with more than 3 loaded lifting points may only be lifted using a load distributor.

2. Turn up and lifting upright

When turning up or lifting upright elements, it must be checked whether the lifting system can be used for both lifting operations (turning up and lifting upright).
These lifting operations are required when erecting horizontally loaded wall elements and when positioning walls.

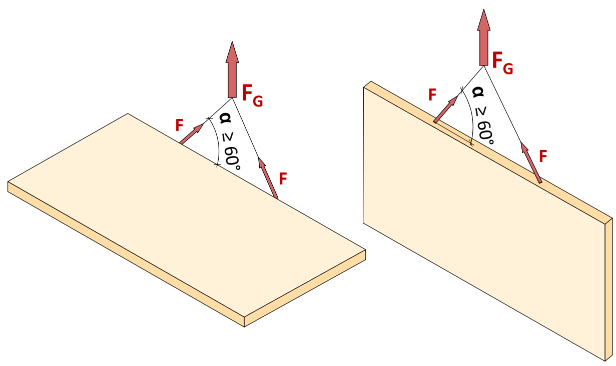
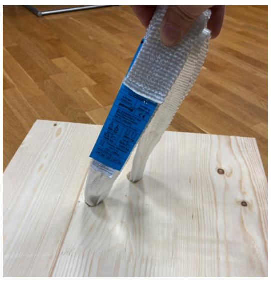


Figure 4: Turning up and lifting upright

The MM lifting system range

MM-LSN-W **LIFTING SLING NORMAL WALL** **MM-LSH-W** **LIFTING SLING HEAVY WALL** Installed at the factory, for lifting and turning up wall elements. Normal: Lifting sling up to 1000 kg Heavy: Lifting sling up to 2500 kg If necessary, holes must be plugged or filled in a suitable manner on site after installation.	
MM-LSN-F **LIFTING SLING NORMAL FLOOR** **MM-LSH-F** **LIFTING SLING HEAVY FLOOR** Installed at the factory, for lifting floor elements with **non-visible requirements.** Normal: Lifting sling up to 1000 kg Heavy: Lifting sling up to 2500 kg If necessary, holes must be plugged or filled in a suitable manner on site after installation.	
MM-LBN-F **LIFTING BOLT NORMAL FLOOR** **MM-LBH-F** **LIFTING BOLT HEAVY FLOOR** Installed at the Factory, for lifting roof and floor elements **with load distributor.** Normal: Lifting sling up to 1000 kg Heavy: Lifting sling up to 2500 kg If necessary, holes must be plugged or filled in a suitable manner on site after installation.	

Lifting system Wall elements

MM-LSN-W and MM-LSH-W

Purpose of use

- Lifting upright elements
- Turning up a horizontal element and lifting upright

Prefabrication

- Drill hole diameter 30 mm
- Single-use lifting slings from PEWAG (1,0 t or 2.5 t)

Description

- 1 to max. 2 slings per element
- Lifting equipment is installed visibly, preferable for wall elements with non-visible requirements (NVQ)
- Possible for wall elements with longitudinal and transverse cover layer

Edge distances and lifting angle

- Minimum 182 mm from the edge of the element
- Maximum 6 m between two lifting points
- Lifting angle $\alpha \geq 60°$

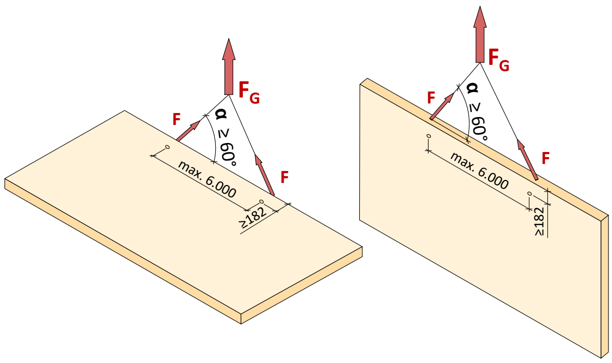


Figure 5: Lifting and turning up wall elements with two lifting points, dimensions in [mm]

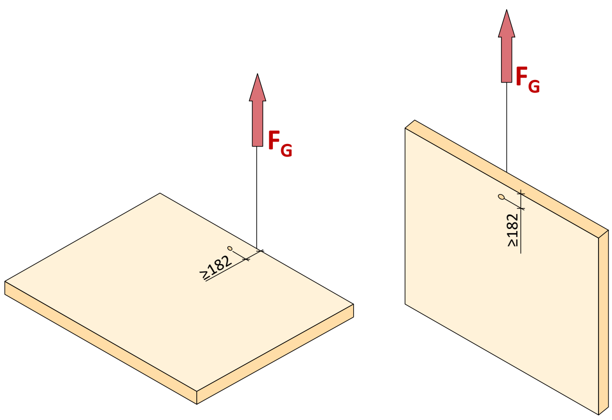


Figure 6: Lifting and turning up wall elements with one lifting point, dimensions in [mm]

On-site effort

When the required lifting operations have been completed, the lifting slings must be cut and disposed of properly.
During the lifting process, the slings can cause pressure marks. These can be covered on site with a wood plug with a diameter of 40 mm.

Lifting system Floor elements

MM-LSN-F and MM-LSH-F

Purpose of use

- Lifting horizontal floor elements

Prefabrication

- 2 drill holes diameter 30 mmm
- Single-use lifting slings from PEWAG (1,0 t or 2.5 t)

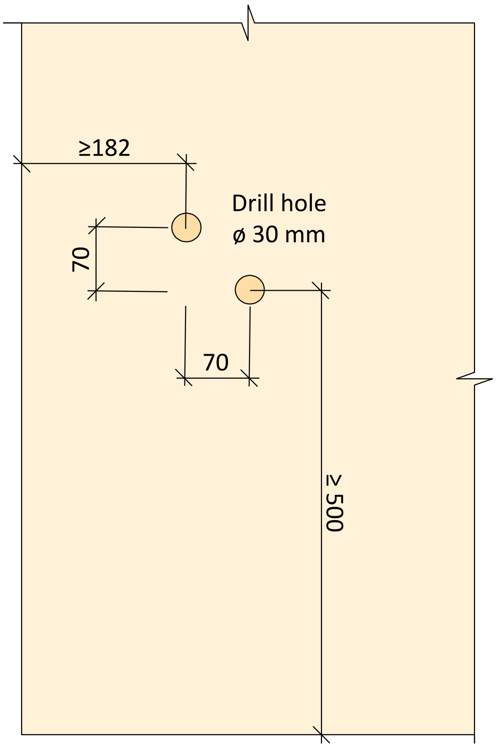


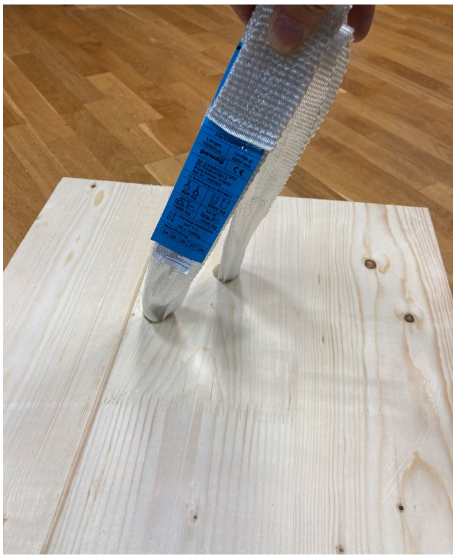
Figure 7: Edge distances floor elements, dimensions in [mm]

Description

- 2 or 4 slings per element
- Lifting equipment is installed visibly, preferably for floor elements with **non-visible requirements (NVQ)**
- Possible for floor elements with longitudinal and transverse cover layer

Edge distances and lifting angle

- Minimum 182 mm from the edge of the element
- Drill holes 70 mm displaced
- Edge distance in longitudinal direction ≥ 500 mm
- Lifting angle $\alpha \geq 60°$



On-site effort

When the required lifting operations have been completed, the lifting slings must be cut and disposed of properly.
During the lifting process, the slings can cause pressure marks. These can be covered on site with a real wood plug with a diameter of 40 mm.

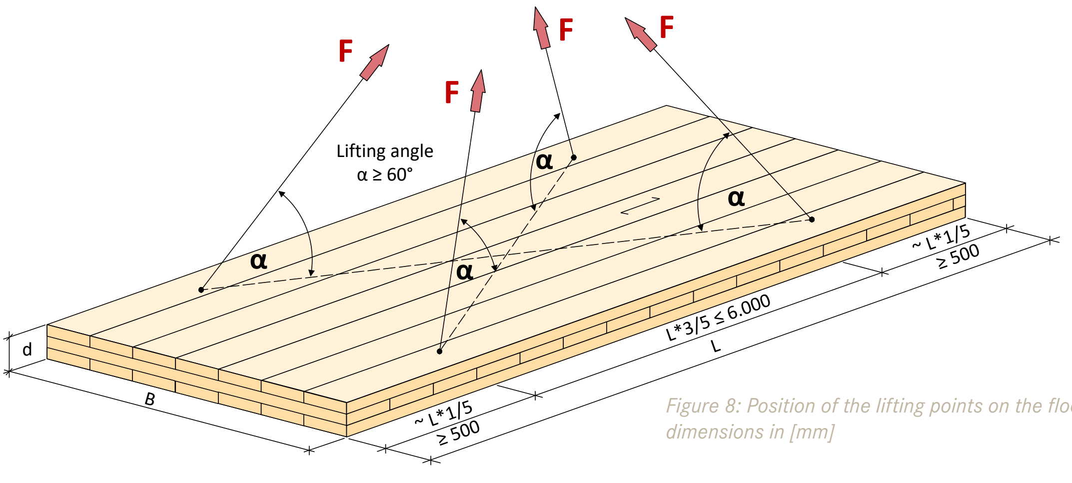


Figure 8: Position of the lifting points on the floor element, dimensions in [mm]

Lifting system Floor elements

MM-LBN-F and MM-LBH-F

Purpose of use

- Lifting horizontal floor elements and inclined roof elements with load distributor
- For visible floor soffit

Prefabrication

- Blind hole diameter 68 mm
- Drill hole for rod dowel
- Single-use lifting slings from PEWAG (1,0 t or 2.5 t)
- Sling is stowed in the blind hole

Description

- Four lifting slings per element
- Lifting system is not visibly installed on one site, preferably for floor elements with visual requirements (DVQ and IVQ)

The blue marked area in Figure 9 must not be weakened by processing.

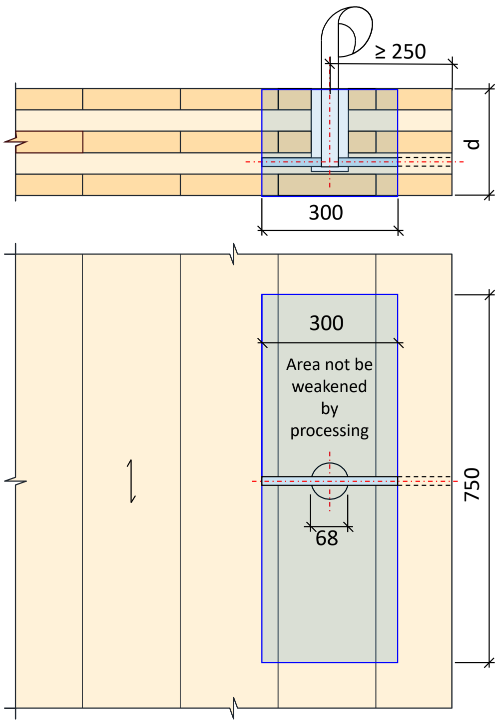


Figure 9: Position of the lifting points on the floor element, dimensions in [mm]

Installation

- Insert the lifting slings into the blind hole
- Inserting the rod dowel into the side hole
- Lifting sling is form-fitted to the element by the rod dowel

Edge distances and lifting angle

- Minimum 250 mm from the edge of the element
- Rod dowel 300 mm
- Edge distance in longitudinal direction ≥ 500 mm
- Lifting angle $\alpha \geq 60°$

Edge processing

The installation situation depends on the panel thickness and the joint design (slope cut ≥ 45°, stepped rebate joint, joint board) in the longitudinal direction of the panel.

On-site effort

When the required lifting operations have been completed, the lifting slings must be cut and disposed of properly.
If necessary, holes must be plugged or filled in a suitable manner on site after installation.

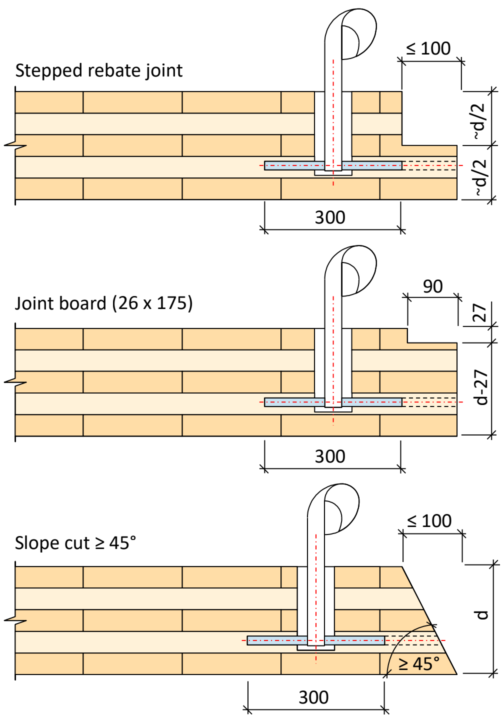


Figure 10: Examples of permission edge processing, dimensions in [mm]

Load table

The determination of the load bearing capacities is based on the assumption that a load distributor is used for more than 3 loaded anchor points and the lifting speed is limited to 35 m/min.

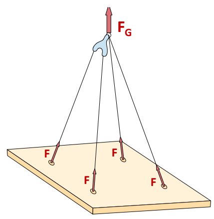
Lifting Sling for Wall elements				
Load case: Untwisting a horizontal element and lifting upright			**Lifting angle ≥ 60°**	
MM-Lifting system	**Prefabrication**	**Panel thickness**	**max. element weight with 1 lifting point**	**max. element weight with 2 lifting points**
MM-LSN-W	Factory-made	≥ 60 mm	800 kg	1600 kg
MM-LSH-W	Factory-made	≥ 140 mm	2000 kg	4000 kg

*Loads for TL and TT**

Lifting Sling for Floor elements				
Load case: Horizontal lifting			**Lifting angle ≥ 60°**	
MM-Lifting system	**Prefabrication**	**Panel thickness**	**max. element weight with 2 lifting point**	**max. element weight with 4 lifting points**
MM-LSN-F	Factory-made	≥ 60 mm	2000 kg	3000 kg
MM-LSH-F	Factory-made	≥ 140 mm	5000 kg	7500 kg

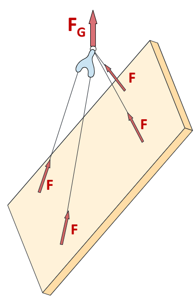
*Loads for TL and TT**

Rod dowel Lifting sling for Floor elements				
Load case: Horizontal lifting with load distributor			**Lifting angle ≥ 60°**	
MM-Lifting system	**Prefabrication**	**Panel thickness**	**max. element weight with 4 lifting points**	
			TL*	**TT***
MM-LBN-F	Factory-made	≥ 60 mm	1600 kg	1500 kg
MM-LBN-F	Factory-made	80-90 mm	2300 kg	2000 kg
MM-LBN-F	Factory-made	100-140 mm	3000 kg	3400 kg
MM-LBN-F	Factory-made	160-220 mm	3600 kg	3400 kg
MM-LBN-F	Factory-made	240 mm**	2800 kg	3400 kg
MM-LBN-F	Factory-made	260-320 mm	3600 kg	3400 kg



This lifting system is not permitted for 60 mm thick floor panels with **stepped rebate**.

Rod dowel Lifting sling for Roof elements				
Load case: Inclined lifting with load distributor			**Lifting angle ≥ 60°**	
MM-Lifting system	**Prefabrication**	**Panel thickness**	**max. element weight with 4 lifting points**	
			TL*	**TT***
MM-LBN-F	Factory-made	≥ 60 mm	1100 kg	1000 kg
MM-LBN-F	Factory-made	80-90 mm	1600 kg	1400 kg
MM-LBN-F	Factory-made	100-140 mm	2100 kg	2350 kg
MM-LBN-F	Factory-made	160-220 mm	2500 kg	2350 kg
MM-LBN-F	Factory-made	240 mm**	1950 kg	2350 kg
MM-LBN-F	Factory-made	260-320 mm	2500 kg	2350 kg



This lifting system is not permitted for 60 mm thick floor panels with **stepped rebate**.

*TL — *Top layer longitudinal, orientation parallel to the span direction*

*TT — *Top layer transverse, orientation 90° to the span direction*

** — *Lower loads due to unfavorable layer orientation*

Disclaimer

We hereby point out that the safe handling of our glued laminated timber (glulam) and cross-laminated timber (CLT) elements can only be guaranteed with MMH‘s proprietary lifting system in compliance with the operating manual for lifting systems. Should the customer intend to use lifting devices or attachments from other manufacturers, the customer must provide all necessary information for the production of the lifting or attachment points ordered (in particular, details on drilling and milling). In this regard, the operating manual of the respective lifting device manufacturer must be strictly adhered to. This includes, but is not limited to, the required load-bearing capacity and load cases, considering boundary conditions related to the lifting equipment (chains, ropes, belts, slings, etc.), type of machine/crane, lifting speed, lifting angles, load-balancing devices, as well as the arrangement and dimensions of the lifting or attachment points.
Upon request, MMH may provide provisional arrangements and dimensions for lifting or attachment points (either in house or through an external service provider) using the software of the respective lifting device manufacturer. However, MMH is unable to verify the technical suitability of the lifting or attachment points in individual cases.
Therefore, such provisional arrangements and dimensions must be reviewed and approved by the customer, taking into account the operating manual of the respective lifting device manufacturer, before the lifting or attachment points are produced.
In case of doubt, the customer is required to clarify the suitability directly with the lifting device manufacturer. MMH assumes no warranty or liability for the suitability of the lifting or attachment points, as manufactured based on the customer’s specifications, or for the wood properties of the respective component (e.g., potential wood defects or knots) for use with lifting devices from other manufacturers. We explicitly point out that lifting devices or attachments may become unsuitable for their intended use due to environmental and weather conditions (e.g., moisture, frost, temperature fluctuations, contamination, each in relation to the lifting or attachment points). The customer is solely responsible for independently and thoroughly verifying the suitability of the lifting or attachment points as well as the lifting devices prior to their use. If suitability cannot be ensured, the installation or use of the lifting devices or attachments must be avoided.

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

www.mm-holz.com

Follow us on

Version 2024/01
Fotos: MMH Archiv, Klaus Morgenstern

E C - D E C L A R A T I O N O F C O N F O R M I T Y

according to Directive on Machinery 2006/42/EC

The Signed:	*Dipl.-Ing. Dr. techn. Erich Moschik* *Licensed Engineer for Maschinery, A-9300 St. Veit/Glan*

certifies that the device

1. Type of Plant:	***MM load handling systems for lifting ceiling elements*** *consisting of lifting loops*
2. Type:	***MM-LSN-F Lifting Sling Normal Floor*** ***MM-LSH-F Lifting Sling Heavy Floor***
3. Year of Construction:	***2024***
4. User:	***Mayr-Melnhof Holz Gaishorn GmbH, 8783 Gaishorn, Gaishorn am See 182*** ***Mayr-Melnhof Holz Leoben GmbH, 8700 Leoben, Turmgasse 67***

comply with the following provisions and standards:

Provisions of EC directives

2006/42/EC	*Directive on Machinery*

harmonized standards

EN 12100 -1	*Safety of machinery - General principles for design — Risk assessment and risk reduction*
EN 414	*Safety of machinery - drafting and design of safety standards*
EN 547-3	*Safety of machinery - Human body measurements*
EN 614-2	*Safety of machinery - Ergonomic design principles,* *Part 2: Interactions between the design of machinery and work tasks*
EN 818-2	*Short link chain for lifting purposes - Safety* *Part 2: Medium tolerance chain for chain slings - Grade 8*
EN 1492-1	*Textile slings - Safety* *Part 1: Flat woven webbing slings made of man-made fibers for general purpose use*
EN 13854	*Standards on Safety of Machinery - Minimum gaps to avoid crushing of parts of the human body*
EN ISO 13857	*Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs*
EN ISO 14120	*Safety of machinery - General requirements for the design and construction of fixed and movable guards*
EN ISO 14123	*Safety of machinery - Reduction of risks to health from hazardous substances emitted by machinery*
BGBl. Nr. 450/1994	*Employee Protection Act, as amended BGBl II No 56/2024*
BGBl. II Nr. 368/1998	*Workplace Ordinance, as amended BGBl II No. 309/2017*
BGBl. II Nr. 164/2000	*Work Equipment Ordinance, as amended BGBl II No. 21/2010*
BGBl. II Nr. 282/2008	*Machinery Safety Ordinance, as amended BGBl II No 204/2018*
BGBl. II Nr. 21/2016	*Low Voltage Equipment Ordinance NspGV 2015*
BGBl. II Nr. 101/1997	*Labeling regulation, as amended BGBl II No 184/2015*

St. Veit/Glan, 04.12.2024

Dipl.-Ing. Dr. techn. Erich Moschik
St. Veit / Glan

Dipl.-Ing. Dr. techn. Erich Moschik

The content of this declaration complies with DIN EN ISO / IEC 17050-1

E C - D E C L A R A T I O N O F C O N F O R M I T Y

according to Directive on Machinery 2006/42/EC

The Signed: *Dipl.-Ing. Dr. techn. Erich Moschik*
Licensed Engineer for Maschinery, A-9300 St. Veit/Glan

certifies that the device

1. Type of Plant: ***MM load handling systems for lifting ceiling elements***
consisting of lifting loops and dowels

2. Type: ***MM-LBN-F Lifting Bolt Normal Floor***
MM-LBH-F Lifting Bolt Heavy Floor

3. Year of Construction: ***2024***

4. User: ***Mayr-Melnhof Holz Gaishorn GmbH, 8783 Gaishorn, Gaishorn am See 182***
Mayr-Melnhof Holz Leoben GmbH, 8700 Leoben, Turmgasse 67

comply with the following provisions and standards:

Provisions of EC directives

2006/42/EC	*Directive on Machinery*

harmonized standards

EN 12100 -1	*Safety of machinery - General principles for design — Risk assessment and risk reduction*
EN 414	*Safety of machinery - drafting and design of safety standards*
EN 547-3	*Safety of machinery - Human body measurements*
EN 614-2	*Safety of machinery - Ergonomic design principles, Part 2: Interactions between the design of machinery and work tasks*
EN 818-2	*Short link chain for lifting purposes - Safety Part 2: Medium tolerance chain for chain slings - Grade 8*
EN 1492-1	*Textile slings - Safety Part 1: Flat woven webbing slings made of man-made fibers for general purpose use*
EN 13854	*Standards on Safety of Machinery - Minimum gaps to avoid crushing of parts of the human body*
EN ISO 13857	*Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs*
EN ISO 14120	*Safety of machinery - General requirements for the design and construction of fixed and movable guards*
EN ISO 14123	*Safety of machinery - Reduction of risks to health from hazardous substances emitted by machinery*
BGBl. Nr. 450/1994	*Employee Protection Act, as amended BGBl II No 56/2024*
BGBl. II Nr. 368/1998	*Workplace Ordinance, as amended BGBl II No. 309/2017*
BGBl. II Nr. 164/2000	*Work Equipment Ordinance, as amended BGBl II No. 21/2010*
BGBl. II Nr. 282/2008	*Machinery Safety Ordinance, as amended BGBl II No 204/2018*
BGBl. II Nr. 21/2016	*Low Voltage Equipment Ordinance NspGV 2015*
BGBl. II Nr. 101/1997	*Labeling regulation, as amended BGBl II No 184/2015*

St. Veit/Glan, 04.12.2024

Dipl.-Ing. Dr. techn. Erich Moschik

The content of this declaration complies with DIN EN ISO / IEC 17050-1

EC-DECLARATION OF CONFORMITY

according to Directive on Machinery 2006/42/EC

The Signed:	*Dipl.-Ing. Dr. techn. Erich Moschik* *Licensed Engineer for Maschinery, A-9300 St. Veit/Glan*

certifies that the device

***1.* Type of Plant:**	***MM load handling systems for lifting wall elements*** *consisting of lifting loops*
***2. Type*:**	***MM-LSN-W Lifting Sling Normal Wall*** ***MM-LSH-W Lifting Sling Heavy Wall***
3. Year of Construction:	***2024***
4. User:	***Mayr-Melnhof Holz Gaishorn GmbH, 8783 Gaishorn, Gaishorn am See 182*** ***Mayr-Melnhof Holz Leoben GmbH, 8700 Leoben, Turmgasse 67***

comply with the following provisions and standards:

Provisions of EC directives

2006/42/EC	*Directive on Machinery*

harmonized standards

EN 12100 -1	*Safety of machinery - General principles for design — Risk assessment and risk reduction*
EN 414	*Safety of machinery - drafting and design of safety standards*
EN 547-3	*Safety of machinery - Human body measurements*
EN 614-2	*Safety of machinery - Ergonomic design principles,* *Part 2: Interactions between the design of machinery and work tasks*
EN 818-2	*Short link chain for lifting purposes - Safety* *Part 2: Medium tolerance chain for chain slings - Grade 8*
EN 1492-1	*Textile slings - Safety* *Part 1: Flat woven webbing slings made of man-made fibers for general purpose use*
EN 13854	*Standards on Safety of Machinery - Minimum gaps to avoid crushing of parts of the human body*
EN ISO 13857	*Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs*
EN ISO 14120	*Safety of machinery - General requirements for the design and construction of fixed and movable guards*
EN ISO 14123	*Safety of machinery - Reduction of risks to health from hazardous substances emitted by machinery*
BGBl. Nr. 450/1994	*Employee Protection Act, as amended BGBI II No 56/2024*
BGBl. II Nr. 368/1998	*Workplace Ordinance, as amended BGBI II No. 309/2017*
BGBl. II Nr. 164/2000	*Work Equipment Ordinance, as amended BGBI II No. 21/2010*
BGBl. II Nr. 282/2008	*Machinery Safety Ordinance, as amended BGBI II No 204/2018*
BGBl. II Nr. 21/2016	*Low Voltage Equipment Ordinance NspGV 2015*
BGBl. II Nr. 101/1997	*Labeling regulation, as amended BGBI II No 184/2015*

St. Veit/Glan, 04.12.2024

Dipl.-Ing. Dr. techn. Erich Moschik
Dipl.-Ing. Dr. techn. Erich Moschik
beeideter Ziviltechniker u. Ingenieurkonsulent für Maschinenbau
St. Veit / Glan

Dipl.-Ing. Dr. techn. Erich Moschik

The content of this declaration complies with DIN EN ISO / IEC 17050-1