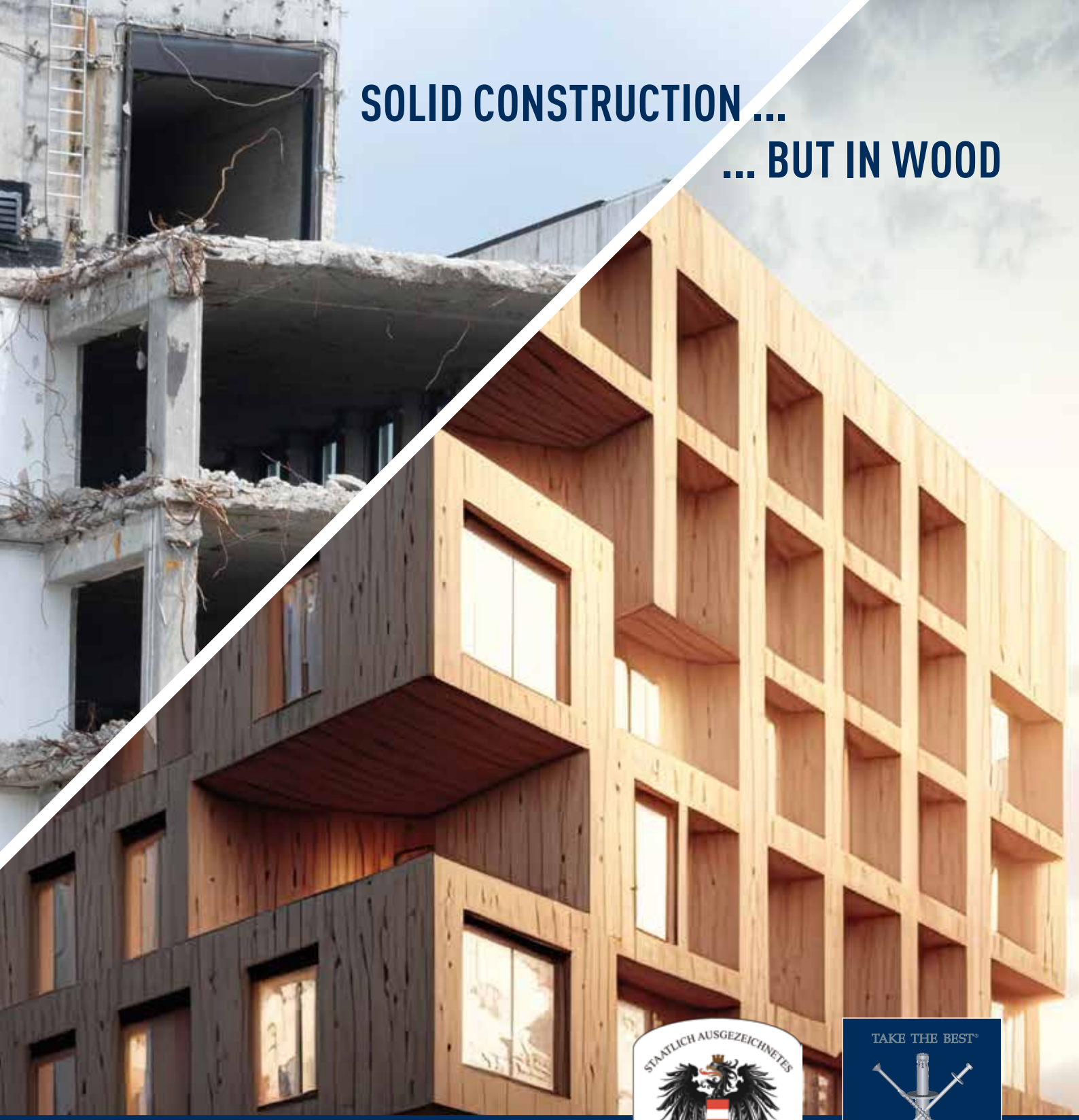
SOLID CONSTRUCTION ...
... BUT IN WOOD



STAATLICH AUSGEZEICHNETES UNTERNEHMEN

TAKE THE BEST®
SIHGA®

KLIMANEUTRALES UNTERNEHMEN
certified by Fokus Zukunft
Klimaneutral durch Kompensation mit Klimaschutzzertifikaten

MASS-X® CLT RANGE (CROSS LAMINATED TIMBER)

CLT (CROSS LAMINATED TIMBER) SOLID WOOD CONSTRUCTION

TAKE THE BEST

PRODUCTFINDER

✓ Usable X Not Usable – Not Relevant

	Threshold timber	Wall-to-concrete	Wall-to-wall	Ceiling joist	Wall-to-ceiling
Wood connectors					
Mass-X® Angle Z	X	X	✓	X	✓
Mass-X® EZ					
Mass-X® Angle Q	X	✓	X	X	✓
Mass-X® Angle Q HB	✓	✓	X	X	X
Mass-X® Angle Q HH	✓	X	X	X	X
Mass-X® Shear	X	X	✓	X	X
Mass-X® Pull Angle P-HB 340	✓	✓	X	X	X
Mass-X® Pull HB 60 / 70	✓	✓	X	X	X
Mass-X® Pull HH 60 / 70	X	X	✓	X	✓
IdeFix® DWD	X	X	✓	X	✓
HobaFix® HF / HobaFix® Max HFM	X	X	X	✓	X
Structural fasteners					
BeziFix® Anchor ZSS	✓	✓	X	X	X
GoFix® X+, S+	X	X	✓	✓	✓
Angled fitting screw	✓	✓	X	X	✓
GoFix® MS II	X	X	✓	✓	✓
GoFix® ZSS	✓	X	X	X	✓
Anchor nail	✓	✓	✓	X	✓
Other products					
Pick family	X	X	X	X	X
IdeFix® IF/IFD	X	X	✓	✓	✓
Monitorix®					system f
WabaFix® WF	X	✓	✓	✓	✓
HobaFix® HFM	X	X	✓	X	X
Mass-X® Calm 1,2,3	✓	✓	✓	✓	✓
Mass-X® Decoupling profile	✓	✓	✓	✓	✓
Mass-X® Angle decoupling	✓	✓	X	X	✓

Ceiling-to-ceiling	Wall-to-floor	Roof	Stairs	Insulation	Handling	Page
X	✓	–	–	–	–	14 – 16
						17
X	✓	–	–	–	–	18 – 21
X	✓	–	–	–	–	22 – 23
X	✓	–	–	–	–	22 – 23
✓	X	–	–	–	–	24 – 27
X	✓	–	–	–	–	28 – 29
X	✓	–	–	–	–	30 – 32
X	✓	–	–	–	–	34 – 35
✓	✓	–	–	–	–	38 – 39
X	X	✓	✓	–	–	40 – 45
X	✓	X	X	X	–	48 – 49
✓	✓	✓	✓	X	–	50 – 58
✓	✓	X	X	X	–	60 – 61
✓	✓	✓	✓	✓	–	64 – 67
X	✓	X	X	X	–	68 – 69
X	✓	X	X	X	–	69
X	X	X	X	X	✓	72 – 79
X	X	✓	✓	X	–	82 – 84
or structural monitoring						86
X	✓	✓	✓	–	–	88
X	X	X	X	X	X	89
X	✓	✓	✓	X	–	90
X	✓	X	✓	X	–	94
X	✓	X	–	–	–	95

WE SET NEW STANDARDS IN TIMBER CONSTRUCTION

TAKE THE BEST


Wir setzen neue Massstäbe im Holzbau

CLT BASICS

CLT (Cross-Laminated Timber) panels or timber consist of **several layers of wooden boards** stacked crosswise (typically at an angle of 90 degrees) and glued together on their wide faces and sometimes also on the narrow faces.

A cross-section of a CLT element has **at least three bonded sheet layers** arranged in **orthogonal alternating orientation to** the adjacent layers. In special configurations, successive layers can be arranged in the same direction, creating a double layer (e.g. double longitudinal layers on the outer surfaces and / or additional double layers at the core of the panel) to achieve specific structural capacities.

CLT products are normally manufactured with an o**dd number of layers**. Here, gluing of three to seven layers is common. **The thickness of the individual layers of wood can vary from 16 mm to 51 mm, and the width from about 60 mm to 240 mm.**

The **panel sizes vary depending on the manufacturer**. Typical widths are 0.6 m, 1.2 m, 2.4 m and 3 m, while the length can be up to 18 m. In special cases, the thickness can be up to 500 mm, although typical thicknesses are between 60 and 300 mm. (Transport regulations may limit the size of the CLT panel).

Timber in the outer layers of the CLT panels used as walls is aligned up and down parallel to the gravity loads to **maximise** the **wall's** vertical **loading capacity**. Similarly, the outer layers of the floor and roof systems run parallel to the main direction of stress.

ADVANTAGES
BUILDING WITH CLT

- Irrespective of the grain direction, CLT allows screw connections in any direction, as the layering of the boards means that no grain direction needs to be observed.
- Reduced construction time due to prefabrication of the elements
- Enables almost film-free construction due to the diffusion-open properties of the CLT elements.
- CLT has both sound and heat insulating properties.
- A wide range of architectural design options.
- All components of a house (walls, ceilings and roof) can be made of CLT.
- Lower weight compared to concrete and bricks
- No construction waste is produced when buildings are demolished, as CLT is completely ecologically recyclable.

BUILDING WITH CLT

Modern timber construction methods, e.g. building with cross-laminated timber, exhibit a **strong difference in the individual construction phases compared to the conventional solid construction method**. Whereas with solid construction most of the work takes place on the building site, with timber construction much of the work has shifted away from the building site and into the factory.

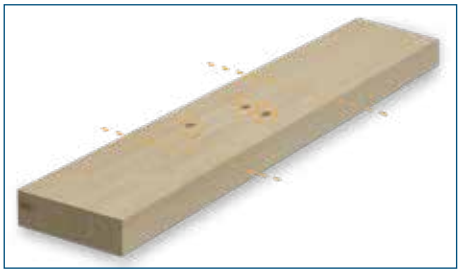
The key word here is **prefabrication**. All wall, ceiling and roof elements are not delivered to the construction site as unprocessed CLT panels and thus as raw material, but are instead prepared in special joinery centres for later assembly.

In the CNC joinery centres, the manufactured CLT panels are **further processed** into **individual elements**. Here, all necessary work is carried out that is required on the construction site for fasteners of all kinds and / or for geometries that would be too difficult to create on the construction site. Joinery work usually carried out in the factory is as follows:

- Windows and door cut-outs
- Diagonal cuts in the gable area
- Cuts and notches
- Milling of rebate systems (e.g. butt board rebate, step rebate, etc.)
- Special geometries for special connectors

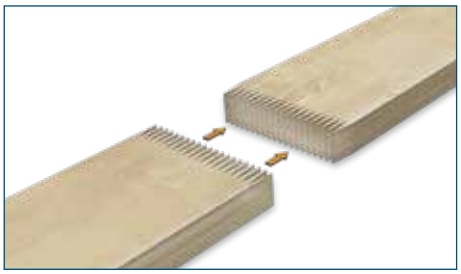
Such **complex processing steps**, especially through the use of computer-controlled processing machines, **increase the planning work in advance**. It must be possible to supply positions for connectors and installations within the house (electrical / water) with the necessary information. Furthermore, care is taken to ensure that **all components** are **matched to each other to the millimetre** in the final assembly, so that there are no problems at the final assembly stage.

CLT PRODUCTION



1

After the drying process of the softwood boards (more than 48 hours), the boards are sorted. Growth deviations in the wood that would reduce the strength or are unsightly are marked. The sections where such defects are present are cut out.



2

To create the almost endless strand of wooden boards necessary for CLT production, the boards of different lengths are joined together. This is done by means of a wedge galvanisation. The resulting boards are then planed to eliminate thickness deviations between them.

3

The manufactured boards are laid manually or mechanically to form a layer. After a layer has been completely laid down, adhesive is applied to the resulting surface. The most common method here is a glue curtain through which the layer is passed.

4

Another layer is placed on top of the glued layer. This is aligned so that the fibre direction of the new layer runs at an angle of 90° to the fibres of the board below. Glue is then also applied to the new layer. This process is repeated until the desired number of board layers is reached.

5

When the desired number of layers is reached, the glued slats are pressed, with the size of the press bed determining the possible panel size. As soon as the adhesive has cured, the CLT panel is reworked to remove dirt, adhesive residues or protruding wood. This is done by planing and sanding the CLT panel.

EDGE PARAMETERS
FOR DESIGN VALUES ON CONCRETE

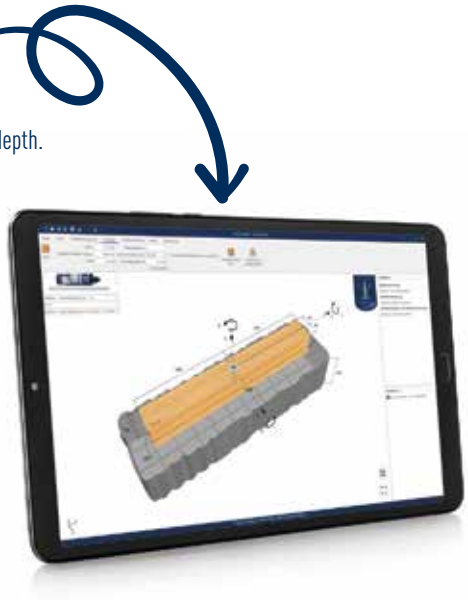
Edge parameters met for all static values of all Mass-X® connectors on concrete

Assumptions:

- Concrete grade C25/30 cracked
- BeziFix® ZSS anchor Ø 12.5 x 120 mm
  The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
- BeziFee® with M16 5.8 threaded rod; hef. 128 mm; concrete grade C25/30 cracked / uncracked
  The design values for BeziFee® with M16 5.8 threaded rod were determined on the basis of ETA-17/0182 and TR029.
- Edge reinforcement
- Concrete ceiling thickness 20 cm
- CLT wall thickness 10 cm
- For Mass-X® Pull Angle, minimum CLT wall thickness 12 cm

The pull-out values increase with the distance to the concrete edge and the anchoring depth.
For anchoring in concrete, use the **SIHGA Jointplan®**.

→ www.sihga.com/service/online-planung/



WOOD CONNECTORS

TAKE THE BEST

MASS-X® ANGLE Z

Connector developed for modern timber construction

The Mass-X® Angle Z is ideally suited for **use in solid wood construction**. Its field of application is limited to the use of CLT (cross-laminated timber). Due to its solid design, it can **transmit high forces**. In contrast to the standard angles, the Mass-X® Angle Z can be combined with our IdeFix® IF. This makes it possible to construct complex connections.

SIHGA®		Dimension			Material	Material thickness
montagepack		Length	Width	Height		
Art. No.	PU	[mm]				[mm]
60736	10	230	80	120	S250 galvanised	4

Advantages

- High load capacity
- Variable applications
- Mass-X® Angle decoupling Z

Instructions for use

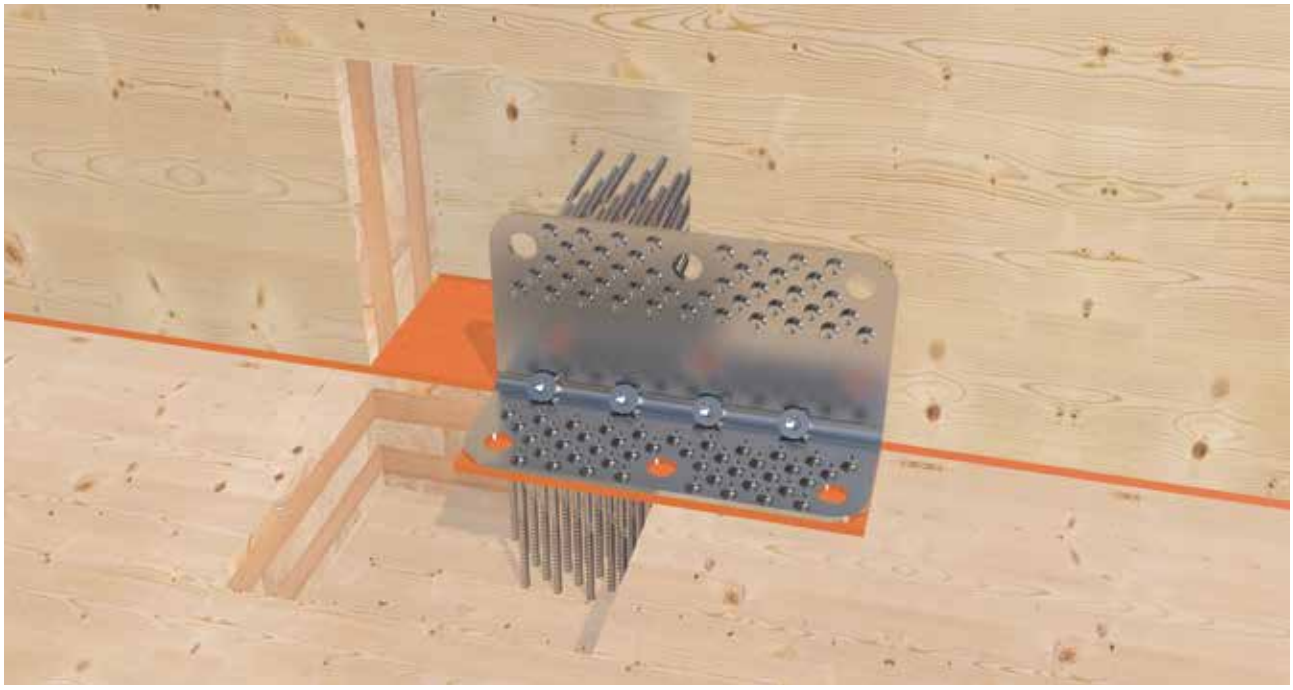
For the Mass-X® Angle Z, the Angle fitting screw 5 x (50, 60, 70 mm) is used in combination with the GoFix® S+ 10 x 125 mm. When used with IdeFix® IF, only 4 IdeFix® IF and 4 GoFix® S+ are required. (See application picture) A combination of IdeFix® IF and screw bolts through a wall is also possible. The load values of the ETA must be observed.

To match:

Mass-X® Angle decoupling Z (Art. No.: 60946)

More information can be found on page 95

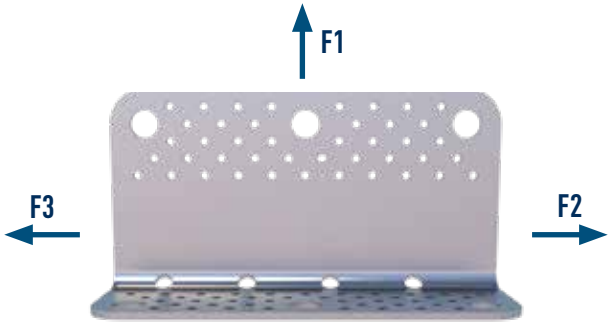
ETA-23/0353

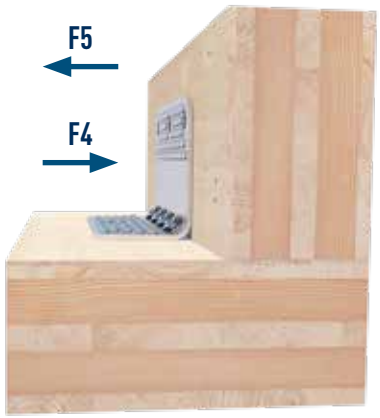


Mass-X® Angle Z for fixing a wall to the wooden floor of the upper storey.

MASS-X® ANGLE Z

Static values





Displacement module

$K_{1,ser}$	$K_{2/3,ser}$	$K_{4,ser}$	$K_{5,ser}$
$F_{1,Rk}$ / 6 mm	$F_{2/3,Rk}$ / 2 mm	$F_{4,Rk}$ / 2,5 mm	$F_{1,Rk}$ / 2,5 mm

Load direction F1; F2/F3; F4; F5									
Vertical leg connection WBS Ø 5 mm n=43	5,0 x 50	5,0 x 60	5,0 x 70	5,0 x 50	5,0 x 60	5,0 x 70	5,0 x 50	5,0 x 60	5,0 x 70
Horizontal leg connection	WBS 5,0 x 50 n=43	WBS 5,0 x 60 n=43	WBS 5,0 x 70 n=43	IdeFix® IF Ø 40 n=3	IdeFix® IF Ø 40 n=3	IdeFix® IF Ø 40 n=3	M16 8.8 n=3	M16 8.8 n=3	M16 8.8 n=3
	GoFix® S+ 10 x 125 n=4								
$F_{1,Rk}$ tension	62,4 kN	69,1 kN	75,7 kN	43,1 kN	43,1 kN	43,1 kN	43,1 kN	43,1 kN	43,1 kN
$F_{2/3,Rk}$	58,3 kN	62,1 kN	66,0 kN	55,9 kN	55,9 kN	55,9 kN	58,3 kN	62,1 kN **60,5 kN**	66,0 kN **60,5 kN**
$F_{4,Rk}$				54 kN			54 kN		
$F_{5,Rk}$ tension ⊥ on CLT	6,9 kN	6,9 kN	6,9 kN	6,9 kN	6,9 kN	6,9 kN	6,9 kN	6,9 kN	6,9 kN

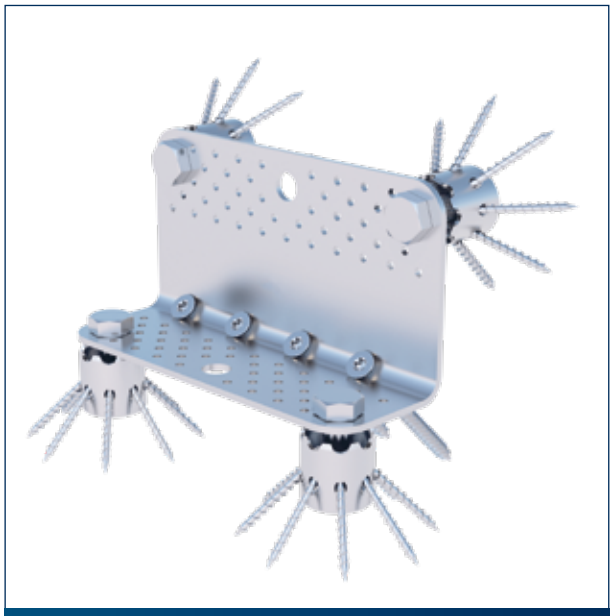
Load direction F1; F2/F3; F4; F5												
Vertical leg connection	IdeFix® IF Ø 40 n=3			IdeFix® IF Ø 40 n=2			M16 8.8 n=3			M16 8.8 n=2		
	GoFix® S+ 10 x 125 n=4											
Horizontal leg connection	WBS Ø 5,0 n=43	IdeFix® IF Ø 40 n=3	M16 8.8 n=3	WBS Ø 5,0 n=43	IdeFix® IF Ø 40 n=3	M16 8.8 n=2	WBS Ø 5,0 n=43	IdeFix® IF Ø 40 n=3	M16 8.8 n=3	WBS Ø 5,0 n=43	IdeFix® IF Ø 40 n=3	M16 8.8 n=3
$F_{1,Rk}$ tension	43,1 kN			29,9 kN			43,1 kN			43,1 kN		
$F_{2/3,Rk}$	26,0 kN			22,3 kN			34,4 kN **29,3 kN**			29,6 kN **25,2 kN**		
$F_{4,Rk}$	54,0 kN			54,0 kN			54,0 kN			54,0 kN		
$F_{5,Rk}$ tension ⊥ on CLT	4,8 kN			4,8 kN			4,8 kN			4,8 kN		

$F_{4,Rk}$=54 kN pressure ⊥ on CLT; independent of connections.
For connections with M16 8.8 if bolt head or nut is not located on CLT: Washer with d_a=40mm.
ρ_k=350 kg/m³ conservative for some approved cross-laminated timber, increase of load bearing capacities according to ETA-23/0353 with $k_{dens}=\left(\frac{\rho_k}{350\ kg/m^3}\right)^{0,5}$.
Twisting of the cross-laminated timber components must be prevented by the design of the supporting structure.
When connecting on both sides with Mass-X® Angle Z, the values in this table may be used for each of the two angles. Only for the connection with M16 screws do the values for $F_{2/3,Rk}$ .change.
In other words, if Mass-X® Angle Z are applied to the top and bottom of the ceiling, the values printed in bold must be used.

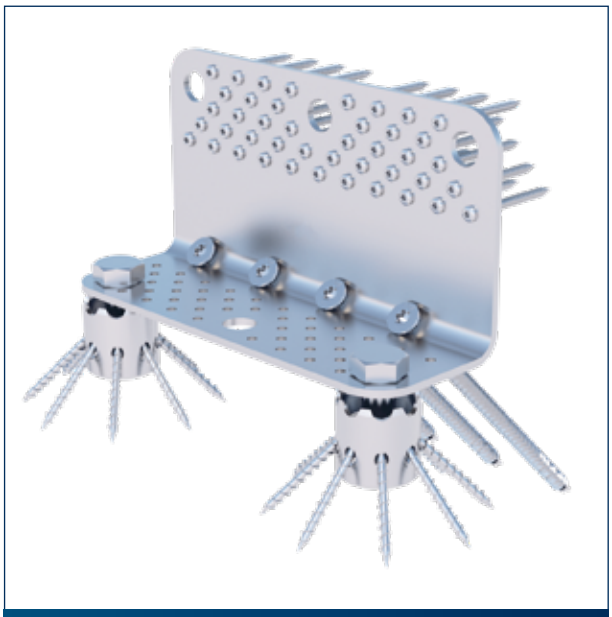
MASS-X® ANGLE Z

Example combinations

GoFix® S+ + Angle fitting screw 5 x 60 mm



GoFix® S+ + IdeFix® IF



GoFix® S+ + Angle fitting screw + IdeFix® IF

Connected to each other by means of M16 hexagon head screws

MASS-X® EZ

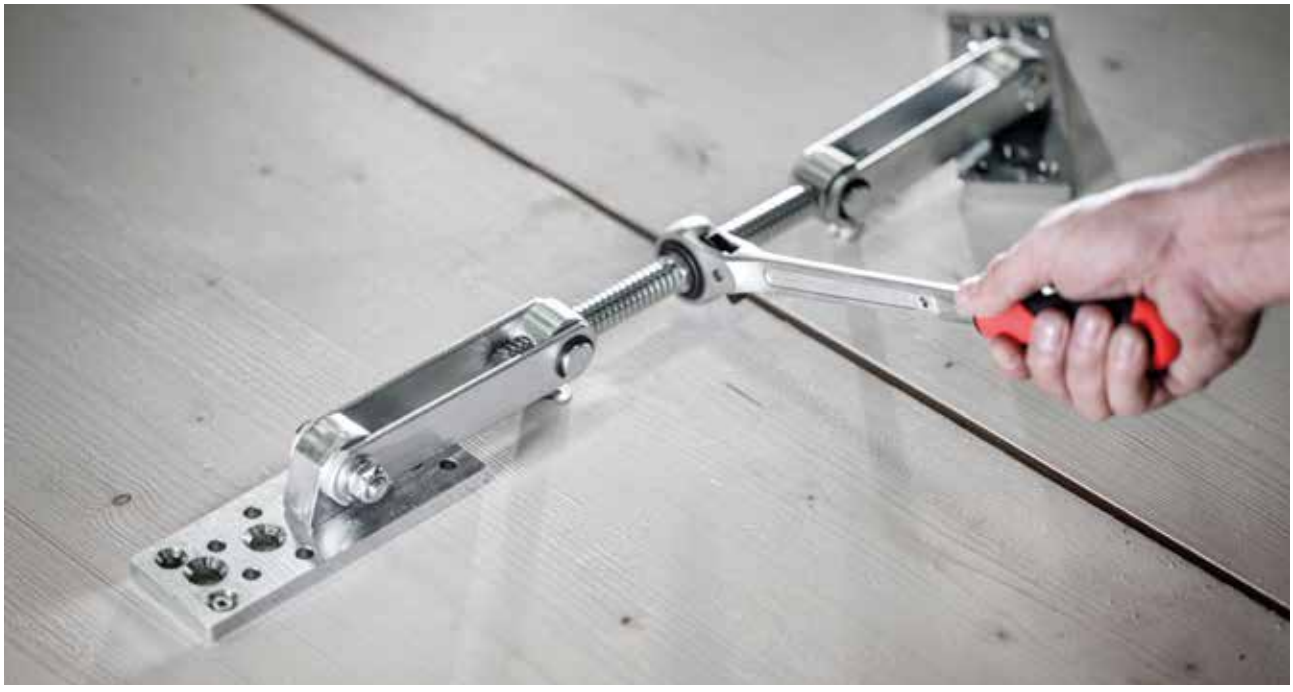
The „Elementzug“ - indispensable for modern timber construction

Advantages

- Fastening possible in any position
- Mass-X® EZ leaves only minimal processing marks
- Fast, simple and material-friendly fastening
- With rotatable 360° plate

MADE IN AUSTRIA

SIHGA® montagepack		Dimension plate		
		Length	Width	Height
Art. No.	PU		[mm]	
60926	1	160	60	8



Mass-X® EZ application.

MASS-X® ANGLE Q

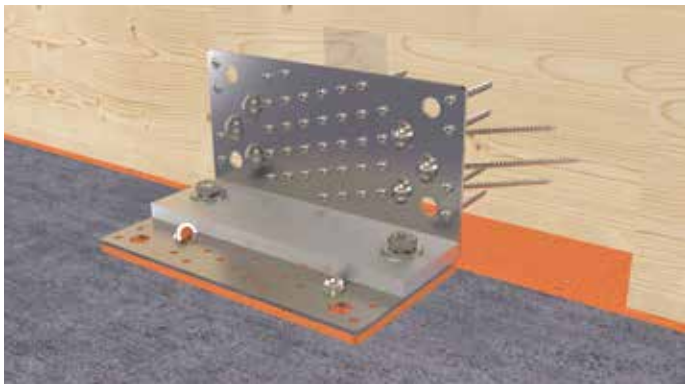
Connectors developed for modern timber construction to absorb shear forces

Advantages

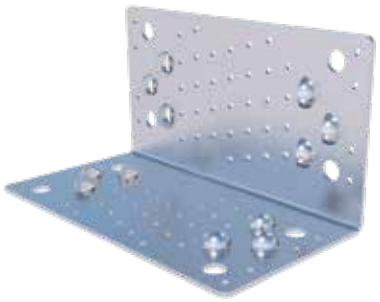
- Many different areas of application
- For mounting in wood and concrete
- Very high shear carrying capacity thanks to new fastening concept
- Fewer connectors required
- When anchoring to the concrete component, the Mass-X® Angle Q must be supplemented with the Mass-X® Angle Q base plate 230 x 68 (Art. No.: 60716)

Instructions for use

or anchoring in wood, there are 6 angled screw holes per leg and 41 holes which are optionally provided for angle fitting screws (WBS) or anchor nails. Depending on the application, we have provided two additional partial utilisations of the fixing holes, which are also available as a type static calculation. Anchoring in concrete is done through the holes provided for this purpose (Ø 14 mm) using our BeziFix® Anchor ZSS Ø 12.5 x 120 mm.



Mass-X® Angle Q for fixing a wall to the concrete foundation.



SIHGA®		Dimension		Material	Material thickness
montagepack		Length	Width		
Art. No.	PU	[mm]			[mm]
60706	10	230	120	S250 galvanised	3

To match:
BeziFix® Anchor ZSS Ø 12,5 x 120 mm, Angle fitting screw, GoFix® ZSS, Anchor nail, Mass-X® Angle Q Base plate 230 x 68, Mass-X® Angle decoupling Q

To match:
Mass-X® Angle decoupling Q (Art. No.: 60726)
More information can be found on page 95

ETA-23/0353

MASS-X® ANGLE Q BASE PLATE 230 X 68

SIHGA®		Dimension		Material	Material thickness
montagepack		Length	Width		
Art. No.	PU	[mm]			[mm]
60716	5	230	68	S235 galvanised	12

MASS-X® ANGLE Q

Static values Full utilisation

Load direction F2/F3

Wood-to-wood connection					
Vertical leg connection	Anchor nail Ø 4 x 40 n=41	Anchor nail Ø 4 x 50 n=41	Anchor nail Ø 4 x 60 n=41	WBS Ø 5 x 50 n=41	WBS Ø 5 x 60 n=41
	GoFix® ZSS Ø 5 x 120 n=6				
Horizontal leg connection	Anchor nail Ø 4 x 40 n=41	Anchor nail Ø 4 x 50 n=41	Anchor nail Ø 4 x 60 n=41	WBS Ø 5 x 50 n=41	WBS Ø 5 x 60 n=41
	GoFix® ZSS Ø 5 x 120 n=6				
Char. shear capacity [kN]	37,3	44,3	47,9	44,6	47,6
Char. shear capacity [kN] (use Mass-X® Angle decoupling Q)	28,9	34,4	37,4	34,8	37,1

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed.

Load direction F2/F3

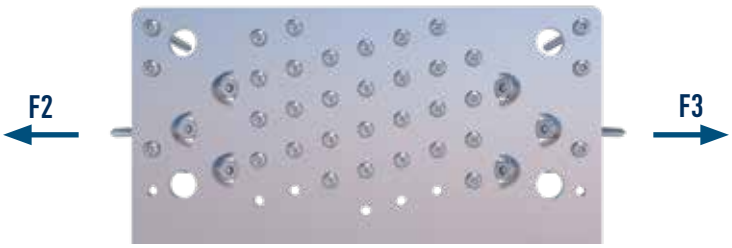
Wood-to-concrete connection					
Vertical leg connection	Anchor nail Ø 4 x 40 n=41	Anchor nail Ø 4 x 50 n=41	Anchor nail Ø 4 x 60 n=41	Angle fitting screw Ø 5 x 50 n=41	Angle fitting screw Ø 5 x 60 n=41
	GoFix® ZSS Ø 5 x 120 n=6				
Horizontal leg connection	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2 incl. Mass-X® Angle Q Base plate 230 x 68				
Char. shear capacity [kN] wood	37,3	44,3	47,9	44,6	47,6
Design value shear capacity[kN] concrete	36,2				
Design value shear capacity [kN] (use Mass-X® Angle decoupling Q)	32,6				

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

MASS-X® ANGLE Q

Partial utilisation 1



Load direction F2/F3

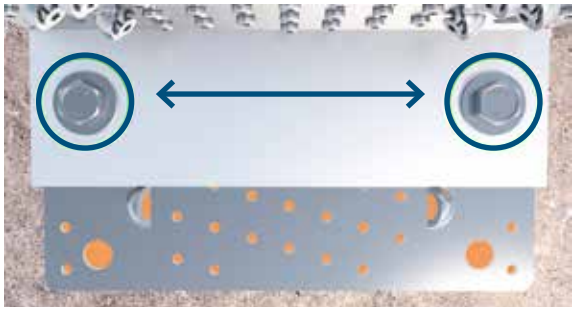
Wood-to-wood connection					
Vertical leg connection	Anchor nail Ø 4 x 40 n=34	Anchor nail Ø 4 x 50 n=34	Anchor nail Ø 4 x 60 n=34	WBS Ø 5 x 50 n=34	WBS Ø5x60 n=34
	GoFix® ZSS Ø 5 x 120 n=6				
Horizontal leg connection	Anchor nail Ø 4 x 40 n=34	Anchor nail Ø 4 x 50 n=34	Anchor nail Ø 4 x 60 n=34	WBS Ø 5 x 50 n=34	WBS Ø 5 x 60 n=34
	GoFix® ZSS Ø 5 x 120 n=6				
Char. shear capacity [kN]	29,1	34,6	37,4	34,9	37,2
Char. shear capacity [kN] (use Mass-X® Angle decoupling Q)	22,6	26,9	29,4	27,2	29

Load direction F2/F3

Wood-to-concrete connection					
Vertical leg connection	Anchor nail Ø 4 x 40 n=34	Anchor nail Ø 4 x 50 n=34	Anchor nail Ø 4 x 60 n=34	Angle fitting screw Ø 5 x 50 n=34	Angle fitting screw Ø 5 x 60 n=34
	GoFix® ZSS Ø 5 x 120 n=6				
Horizontal leg connection	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2 incl. Mass-X® Angle Q Base plate 230 x 68				
Char. shear capacity [kN] wood	29,1	34,6	37,4	34,9	37,2
Design value shear capacity [kN] concrete	36,2				
Design value shear capacity [kN] (use Mass-X® Angle decoupling Q)	32,6				

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

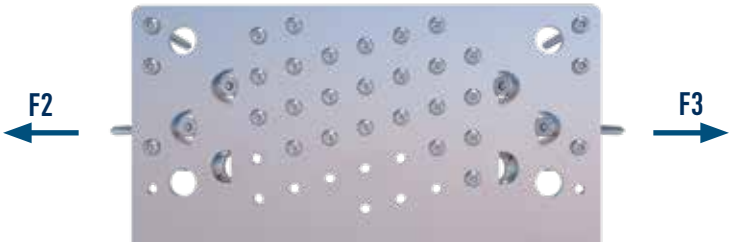


Notice

All values given refer to the drilling pattern shown. We recommend using this as it has a considerably higher shear carrying capacity compared to the rear holes.

MASS-X® ANGLE Q

Partial utilisation 2



Load direction F2/F3

Wood-to-wood connection					
Vertical leg connection	Anchor nail Ø 4 x 40 n=29	Anchor nail Ø 4 x 50 n=29	Anchor nail Ø 4 x 60 n=29	WBS Ø 5 x 50 n=29	WBS Ø 5 x 60 n=29
	GoFix® ZSS Ø 5 x 120 n=4				
Horizontal leg connection	Anchor nail Ø 4 x 40 n=29	Anchor nail Ø 4 x 50 n=29	Anchor nail Ø 4 x 60 n=29	WBS Ø 5 x 50 n=29	WBS Ø 5 x 60 n=29
	GoFix® ZSS Ø 5 x 120 n=4				
Char. shear capacity [kN]	23,6	28,0	30,4	28,3	30,1
Char. shear capacity [kN] (use Mass-X® Angle decoupling Q)	18,3	21,8	23,9	22,1	23,5

Load direction F2/F3

Wood-to-concrete connection						
Vertical leg connection	Anchor nail Ø 4 x 40 n=29	Anchor nail Ø 4 x 50 n=29	Anchor nail Ø 4 x 60 n=29	Angle fitting screw Ø 5 x 40 n=29	Angle fitting screw Ø 5 x 50 n=29	Angle fitting screw Ø 5 x 60 n=29
	GoFix® ZSS Ø 5 x 120 n=4					
Horizontal leg connection	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2 incl. Mass-X® Angle Q Base plate 230 x 68					
Char. shear capacity [kN] wood	23,6	28,0	30,4	26,5	28,3	30,1
Design value shear capacity [kN] concrete	36,2					
Design value shear capacity [kN] (use Mass-X® Angle decoupling Q)	32,6					

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

MASS-X® ANGLE Q HB / HH

Mass-X® Angle Q HB

The Mass-X® Angle Q HB (wood / concrete) is an angle connector specially developed for modern timber construction to **absorb shear forces**. Thanks to its low height, it is ideally suited for use in **timber frame construction**. Through the Mass-X® Angle Q HB base plate 230 x 48, the occurring **loads** can be **optimally** transferred into the concrete.

Advantages

- For mounting on concrete
- Very high shear carrying capacity thanks to new fastening concept
- Fewer connectors required
- May only be used in combination with the Mass-X® Angle Q HB base plate 230 x 48 (Art. No.: 60966)

SIHGA® montagepack		Dimension			Material	Material thickness
		Length	Width	Height		
Art. No.	PU	[mm]				[mm]
60756	10	230	100	70	S250 galvanised	3
Mass-X® Angle Q HB Base plate 230 x 48						
60966	5	230	48		S235 galvanised	12

Mass-X® Angle Q HB with Mass-X® Angle Q HB base plate 230 x 48 for fixing a wall to the concrete foundation.

To match:

Mass-X® Angle decoupling Q HB (Art. No.: 60956)

More information can be found on page 95

ETA-23/0353

Mass-X® Angle Q HH

The Mass-X® Angle Q HH (wood / wood) is an angle connector specially developed for modern timber construction to **absorb shear forces**. Thanks to its low height, it is ideally suited for use in **timber frame construction**.

Advantages

- For mounting on wood
- Very high shear carrying capacity thanks to new fastening concept
- Fewer connectors required
- In combination with the GoFix® S+, particularly high tensile forces can be absorbed

SIHGA® montagepack		Dimension		Material	Material thickness
		Length	Width		
Art. No.	PU	[mm]			[mm]
60746	10	230	70	S250 galvanised	3

Mass-X® Angle Q HH for fastening a wall to the wooden floor of the upper storey.

To match:

Mass-X® Angle decoupling Q HH (Art. No.: 60936)

More information can be found on page 95

ETA-23/0353

MASS-X® ANGLE Q HB / HH

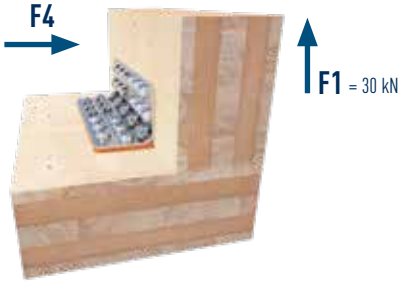
Mass-X® Angle Q HB - Static values

Load direction F2/F3/F4

Wood-to-concrete connection	
Vertical leg connection	Angle fitting screw Ø 5 x 50 n=3 GoFix® ZSS Ø 5 x 120 n=12
Horizontal leg connection	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2
	incl. Mass-X® Angle Q HB Base plate 230 x 48
Char. shear capacity $F_{2/3}$ [kN] wood	40,0
Char. shear capacity F_4 [kN] wood	40,0
Design value shear capacity $F_{2/3}$ [kN] concrete	36,2
Design value shear capacity $F_{2/3}$ [kN] (use Mass-X® Angle decoupling Q HB)	33,4
Design value load-bearing capacity F_4 [kN] concrete	32,8
Design value shear capacity F_4 [kN] (use Mass-X® Angle decoupling Q HB)	25,7

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
When used in timber frame construction, minimum threshold height 80 mm. **Edge parameters for design values on concrete: see page 11.**
Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

Mass-X® Angle Q HH - Static values



Load direction F2/F3/F4

Wood-to-wood connection	
Vertical leg connection	Angle fitting screw Ø 5 x 50 n=3
	GoFix® ZSS Ø 5 x 120 n=12
Horizontal leg connection	Angle fitting screw Ø 5 x 50 n=3
	GoFix® ZSS Ø 5 x 120 n=12
	GoFix® S+ Ø 10 x 125 n=5
Char. shear capacity $F_{2/3}$ [kN]	40,0
Char. shear capacity $F_{2/3}$ [kN] (use Mass-X® Angle decoupling Q HH)	36,0
Char. load-bearing capacity F_4 [kN]	40,0
Char. load-bearing capacity $F_{2/3}$ [kN] (use Mass-X® Angle decoupling Q HH)	36,0

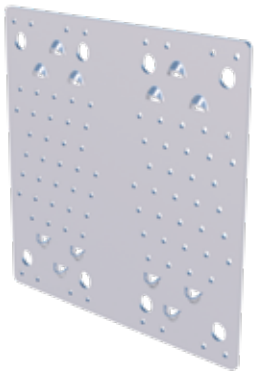
The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density. The minimum connection material edge distances for fasteners according to EC 5 must be observed. When used in timber frame construction, the minimum threshold height is 80 mm.
Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

MASS-X® SHEAR

Panel connectors for absorbing shear forces

Advantages

- Many different areas of application
- For mounting in wood and concrete
- Very high shear carrying capacity thanks to new fastening concept
- Fewer connectors required



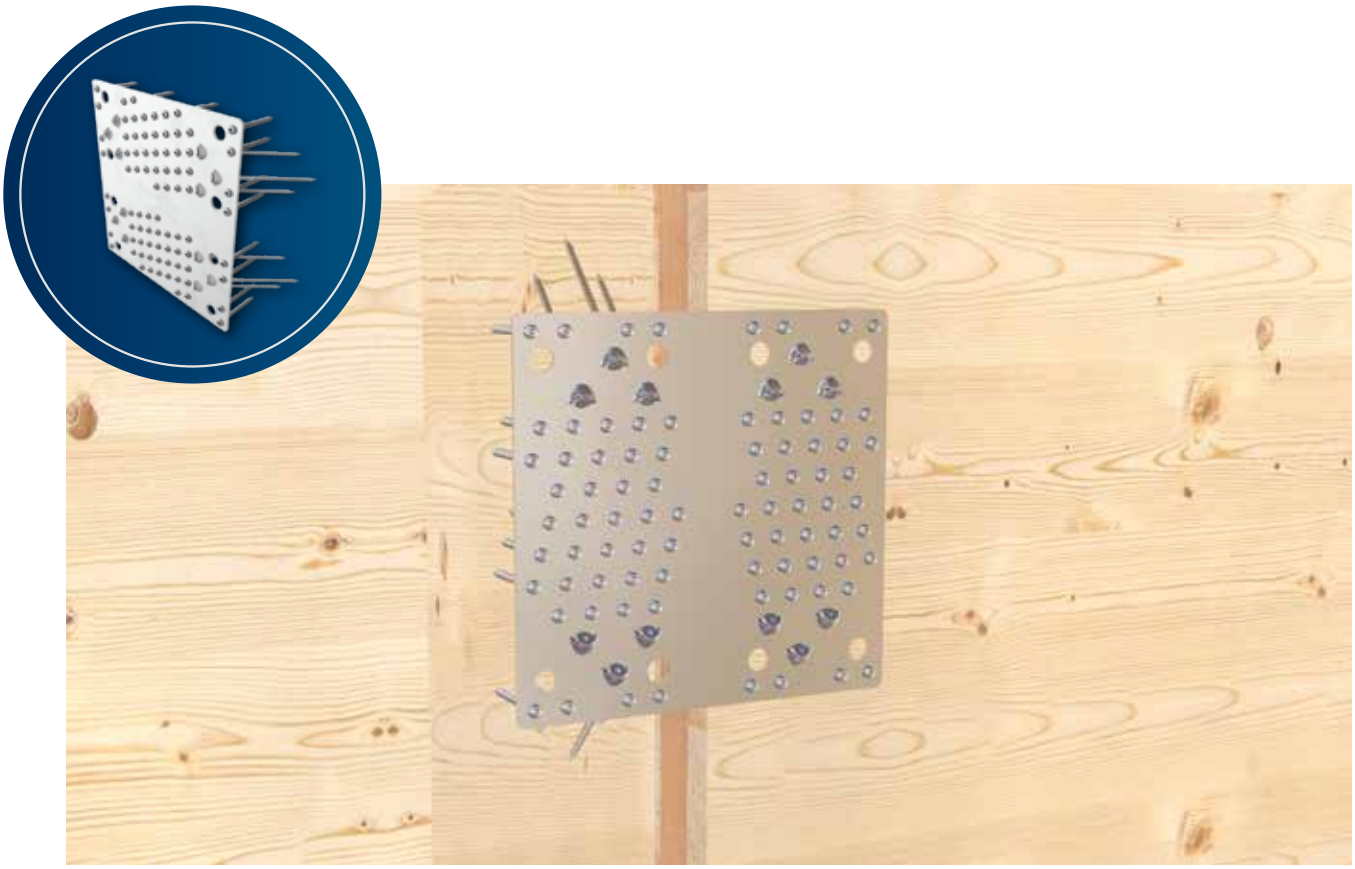
Instructions for use

For anchoring in wood, there are 6 angled screw holes per leg and 41 holes which are optionally **provided for angle fitting screws (WBS) or anchor nails**. Depending on the application, we have provided two additional partial utilisations of the fixing holes, which are also available as a type static calculation. Anchoring in concrete is done through the holes provided for this purpose (Ø 14 mm) using our **BeziFix® Anchor ZSS Ø 12,5 x 120 mm.**

SIHGA®		Dimension		Material	Material thickness
montagepack		Length	Width		
Art. No.	PU	[mm]			[mm]
60806	10	230	240	S250 galvanised	3

To match:
GoFix® ZSS 5 x 120 mm, BeziFix® Anchor ZSS Ø 12,5 x 120 mm, Anchor nail and Angle fitting screw

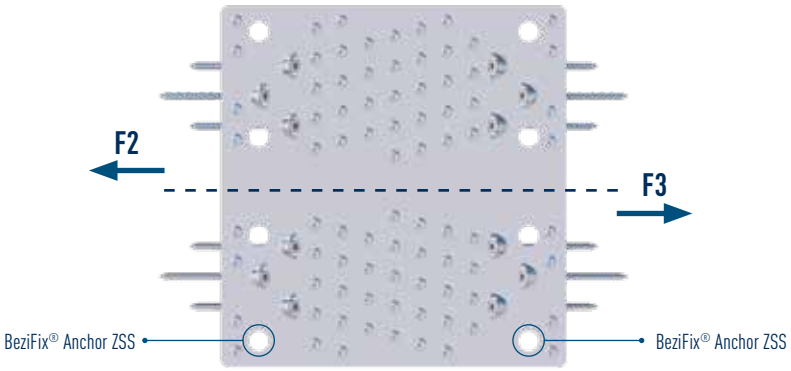
ETA-23/0353



Mass-X® Shear for fixing two walls together.

MASS-X® SHEAR

Static values Full utilisation



Load direction F2/3						
wood / wood	Fastening in the threshold and solid wood ceiling					Steel
	Connection fittings					
	Anchor nail			Angle fitting screw		S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	
	GoFix® ZSS 5 x 120 n = 6					
Number (n)	41			41		
Char. shear capacity [kN]	37,3	44,3	47,9	44,6	47,6	156

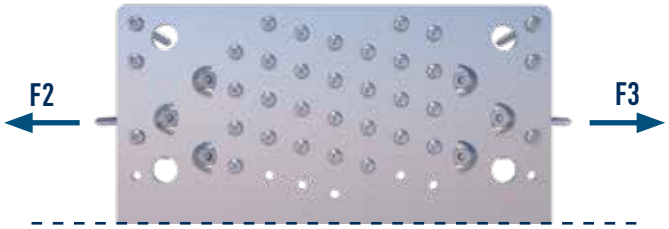
Load direction F2/3							
wood / concrete	Fastening in the threshold					Fastening in the concrete ceiling	Steel
	Connection fittings						
	Anchor nail			Angle fitting screw		BeziFix® Anchor ZSS	S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	Ø 12,5 x 120	
	GoFix® ZSS 5 x 120 n = 6						
Number (n)	41			41		2	
Char. shear capacity [kN] wood	37,3	44,3	47,9	44,6	47,6	-	156
Design value shear capacity [kN] concrete	-	-	-	-	-	36,2	-

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density. The minimum connecting material edge distances according to EC 5 must be observed. Limit hole friction force according to EC3: $F_{b,Rk}$ ø14 mm = 93.75 kN
The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

MASS-X® SHEAR

Partial utilisation 1
Half view



Load direction F2/3						
wood / wood	Fastening in the threshold and solid wood ceiling					Steel
	Connection fittings					
	Anchor nail			Angle fitting screw		S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	
	GoFix® ZSS 5 x 120 n = 6					
Number (n)	34			34		
Char. shear capacity [kN]	29,1	34,6	37,4	34,9	37,2	156

Load direction F2/3							
wood / concrete	Fastening in the threshold					Fastening in the concrete ceiling	Steel
	Connection fittings						
	Anchor nail			Angle fitting screw		BeziFix® Anchor ZSS	S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	Ø 12,5 x 120	
	GoFix® ZSS 5 x 120 n = 6						
Number (n)	34			34		2	
Char. shear capacity [kN] wood	29,1	34,6	37,4	34,9	37,2	-	156
Design value shear capacity [kN] concrete	-	-	-	-	-	36,2	-

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11

MASS-X® SHEAR

Partial utilisation 2
Half view

Load direction F2/3						
wood / wood	Fastening in the threshold and solid wood ceiling					Steel
	Connection fittings					
	Anchor nail			Angle fitting screw		S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	
	GoFix® ZSS 5 x 120 n = 4					
Number (n)	29			29		
Char. shear capacity [kN]	23,6	28,0	30,4	28,3	30,1	156

Load direction F2/3							
wood / concrete	Fastening in the threshold					Fastening in the concrete ceiling	Steel
	Connection fittings						
	Anchor nail			Angle fitting screw		BeziFix® Anchor ZSS	S250
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	5 x 60	Ø 12,5 x 120	
	GoFix® ZSS 5 x 120 n = 4						
Number (n)	29			29		2	
Char. shear capacity [kN] wood	23,6	28,0	30,4	28,3	30,1	-	156
Design value shear capacity [kN] concrete	-	-	-	-	-	36,2	-

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

MASS-X® PULL ANGLE P-HB 340

The Mass-X® Pull Angle P-HB 340 is a steel sheet moulding especially for timber frame construction for the transmission of tensile forces. It enables simple and quick base point anchoring of timber elements in wood, steel or concrete substrates. The Mass-X® Pull Angle P-HB 340 is particularly stable and can withstand high loads.

Advantages

- Short bridge height (150 mm)
- Indirect fastening through an intermediate layer (e.g. OSB)
- For mounting on **wood and concrete**
- Optimised screw pattern for **very high tensile load capacities**
- In combination with the Mass-X® Pull Base Plate 60 the tensile force can be additionally increased

Instructions for use

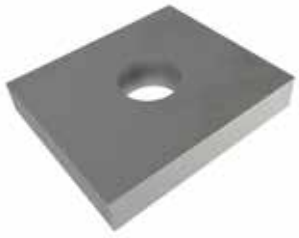
The Mass-X® Pull Angle P-HB 340 is placed on the planking in the floor area and fastened to the stem and, if necessary, to the threshold with screws or anchor nails. The connection is capable of safely transferring tensile, suction and shear forces via the screws into the Mass-X® Pull Angle P-HB 340 and finally via a dowel into the base plate.
Maximum threshold height: 150 mm taking into account the distances to the end timber edge according to EC5

SIHGA® montagepack		Dimension	Material
Art. No.	PU	[mm]	
60766	5	340 x 63 x 60 x 3	S355 galvanised

ETA-23/0353

Mass-X® Pull Angle P-HB 340 Application

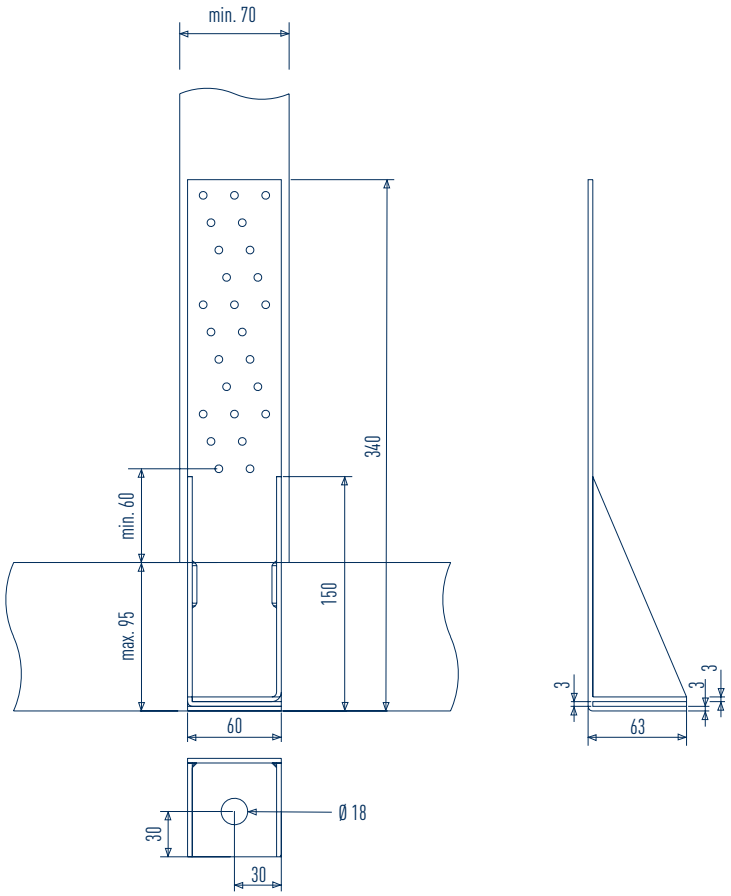
MASS-X® PULL BASE PLATE 60



SIHGA® montagepack		Dimension Length	Width	Material	Material thickness
Art. No.	PU	[mm]			[mm]
60776	5	50	58	S355 galvanised	10

MASS-X® PULL ANGLE P-HB 340

Static values



Load direction F1 (with pressure plate)										
wood / concrete	Fastening in mullion					Fastening in concrete				Steel
						Cracked	Uncracked	Cracked	Uncracked	
	Connection fittings									
	Anchor nail			Angle fitting screw		BeziFix® Anchor ZSS	BeziFix® Anchor ZSS	BeziFee® with threaded rod	BeziFee® with threaded rod	S355
Dimension [mm]	4 x 40	4 x 50	4 x 60	5 x 50	4 x 60	Ø 12,5 x 120	Ø 12,5 x 120	M16 5.8*	M16 5.8*	
Number [n]	25			25		1		1		
Char. tensile load capacity [kN] wood	28,3	33,4	34,4	41,3	44	-	-	-	-	47,9
Design value tensile load capacity [kN] concrete	-	-	-	-	-	7,05	14,1	12	30	47,9

* hef. 128 mm; concrete grade C25/30 cracked / uncracked

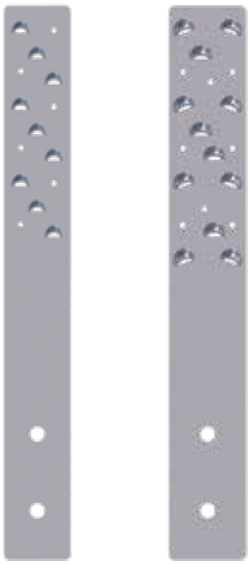
The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.

The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.

The design values for BeziFee® with M16 5.8 threaded rod were determined on the basis of ETA-17/0182 and TR029.

Edge parameters for design values on concrete: see page 11.

MASS-X® PULL HB 60 / 70



Straps developed for modern timber construction to absorb tensile forces

Advantages

- Many different areas of application
- For mounting in wood and concrete
- Very high tensile load capacity thanks to new fastening concept
- Fewer connectors required

Instructions for use

The anchoring in the wood is done using the **GoFix® ZSS 5 x 120 mm at an angle of 45°**. Thanks to the holes specially provided for this purpose, which also serve as screw guides, a **friction-locked connection** is created between the screw head and the tension plate.
With the Mass-X® Pull HB 70, 2 holes of Ø 5 mm are provided for the 90° screw connection. **Anchoring in concrete** is done through the holes provided for this purpose (Ø 14 mm) using our **BeziFix® Anchor ZSS Ø 12,5 x 120**.

SIHGA® montagepack		Dimension Length	Width	Material	Material thickness
Art. No.	PU	[mm]			[mm]
60976	10	506	60	S250 galvanised	3
60986	10	506	70	S250 galvanised	3

ETA-23/0353

Mass-X® Pull HB 60 / 70 for fastening a wall to the foundation.

MASS-X® PULL HB 60 / 70

HB 60 - Static values

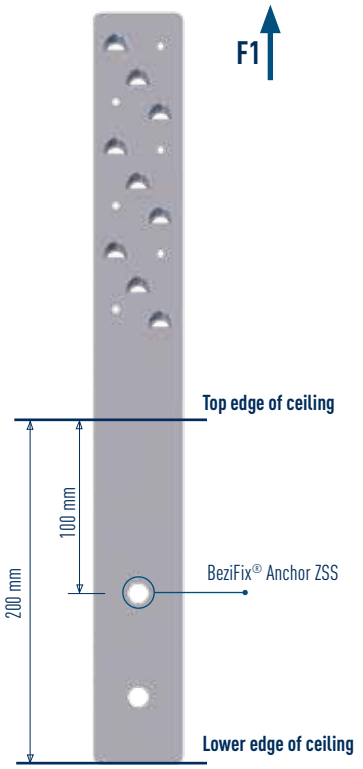


Fig.: 1

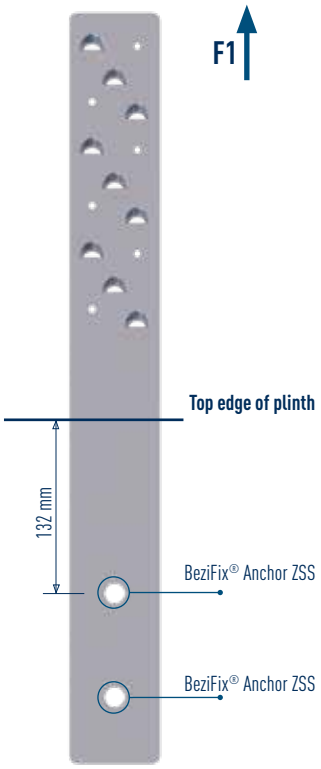


Fig.: 2

Load direction F1

Wood-to-concrete connection								
Connection wood side	GoFix® ZSS Ø 5 x 120 n=9		Anchor nail Ø 4 x 40 n=6		Anchor nail Ø 4 x 50 n=6		Anchor nail Ø 4 x 60 n=6	
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2
Char. load-bearing capacity [kN] wood	23,8	23,8	9,3	9,3	11,0	11,0	11,4	11,4
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**

Load direction F1

Wood-to-concrete connection								
Connection wood side	WBS Ø 5 x 50 n=6		WBS Ø 5 x 60 n=6		GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 50 n=6		GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 60 n=6	
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2
Char. load-bearing capacity [kN] wood	12,0	12,0	13,1	13,1	27,4	27,4	27,7	27,7
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**

Load direction F1

Wood-to-concrete connection							
Connection wood side	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 40 n=6		GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 50 n=6		GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 60 n=6		Steel 28,5 kN
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	
Char. load-bearing capacity [kN] wood	26,0	26,0	26,4	26,4	26,5	26,5	
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	

* 1 x BeziFix® anchor ZSS in the centre for a 20 cm thick concrete slab according to Figure 1; **2 x BeziFix® Anchor ZSS for a 20 cm thick concrete base according to Figure 2; The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

MASS-X® PULL HB 60 / 70

HB 70 - Static values

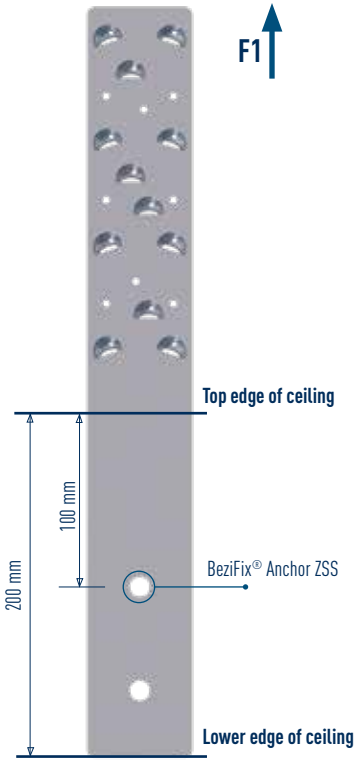


Fig.: 1

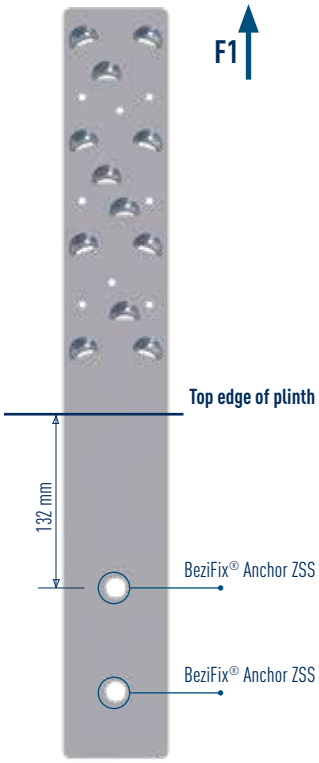


Fig.: 2

Load direction F1

Wood-to-concrete connection								
Connection wood side	GoFix® ZSS Ø 5 x 120 n=12		Anchor nail Ø 4 x 40 n=8		Anchor nail Ø 4 x 50 n=8		Anchor nail Ø 4 x 60 n=8	
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2
Char. load-bearing capacity [kN] wood	31,7	31,7	12,5	12,5	14,7	14,7	15,2	15,2
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**

Load direction F1

Wood-to-concrete connection								
Connection wood side	WBS Ø 5 x 50 n=8		WBS Ø 5 x 60 n=8		GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 50 n=8		GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 60 n=8	
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2
Char. load-bearing capacity [kN] wood	18,2	18,2	19,0	19,0	37,16	37,16	37,4	37,4
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**

Load direction F1

Wood-to-concrete connection							
Connection wood side	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 40 n=8		GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 50 n=8		GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 60 n=8		Steel 37,4 kN
Connection concrete side	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	BeziFix® Anchor ZSS Ø 12,5 x 120 n=1	BeziFix® Anchor ZSS Ø 12,5 x 120 n=2	
Char. load-bearing capacity [kN] wood	34,7	34,7	35,2	35,2	35,4	35,4	
D. v. load-bearing capacity [kN] concrete	12,7*	18,5**	12,7*	18,5**	12,7*	18,5**	

* 1 x BeziFix® anchor ZSS in the centre for a 20 cm thick concrete slab according to Figure 1; **2 x BeziFix® Anchor ZSS for a 20 cm thick concrete base according to Figure 2; The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density.
The minimum connecting material edge distances according to EC 5 must be observed. The design values of the BeziFix® ZSS anchors were determined on the basis of ETA-16/0889 and EN 1992-4.
Edge parameters for design values on concrete: see page 11.

MASS-X® PULL HH 60 / 70

Straps developed for modern timber construction to absorb tensile forces

Advantages

- Many different areas of application
- For mounting in wood
- Very high tensile load capacity thanks to new fastening concept
- Fewer connectors required

Instructions for use

The anchoring in the wood is done using the **GoFix® ZSS 5 x 120 mm at an angle of 45°**. Thanks to the holes specially provided for this purpose which also serve as screw guides, a **friction-locked connection** is created between the screw head and the tension strap. The Mass-X® Pull HH 70 also has 2 holes of Ø 5 mm which are provided the for 90° screw connection.

SIHGA®		Dimension		Material	Material thickness
montagepack		Length	Width		
Art. No.	PU	[mm]			[mm]
60786	10	680	60	S250 galvanised	3
60796	10	740	70	S250 galvanised	3

ETA-23/0353

Mass-X® Pull HH 60 / 70 for fastening wall to ceiling elements.

MASS-X® PULL HH 60 / 70

HH 60 - Static values

Load direction F1

Wood-to-wood connection							
Connection leg 1	GoFix® ZSS Ø 5 x 120 n=9	WBS Ø 5 x 50 n=6	WBS Ø 5 x 60 n=6	Anchor nail Ø 4 x 40 n=6	Anchor nail Ø 4 x 50 n=6	Anchor nail Ø 4 x 60 n=6	Steel 28,5 kN
Connection leg 2	GoFix® ZSS Ø 5 x 120 n=9	WBS Ø 5 x 50 n=6	WBS Ø 5 x 60 n=6	Anchor nail Ø 4 x 40 n=6	Anchor nail Ø 4 x 50 n=6	Anchor nail Ø 4 x 60 n=6	
Char. Tensile load capacity [kN]	23,8	12	13,1	9,4	11	11,4	

Load direction F1

Wood-to-wood connection						
Connection leg 1	GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 50 n=6	GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 60 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 40 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 50 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 60 n=6	Steel 28,5 kN
Connection leg 2	GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 50 n=6	GoFix® ZSS Ø 5 x 120 n=9 + WBS Ø 5 x 60 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 40 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 50 n=6	GoFix® ZSS Ø 5 x 120 n=9 + Anchor nail Ø 4 x 60 n=6	
Char. load-bearing capacity [kN] wood	27,4	27,7	26,0	26,4	26,5	

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density. The minimum connecting material edge distances according to EC 5 must be observed.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

HH 70 - Static values

Load direction F1

Wood-to-wood connection							
Connection leg 1	GoFix® ZSS Ø 5 x 120 n=12	Anchor nail Ø 4 x 40 n=8	Anchor nail Ø 4 x 50 n=8	Anchor nail Ø 4 x 60 n=8	WBS Ø 5 x 50 n=8	WBS Ø 5 x 60 n=8	Steel 37,4 kN
Connection leg 2	GoFix® ZSS Ø 5 x 120 n=12	Anchor nail Ø 4 x 40 n=8	Anchor nail Ø 4 x 50 n=8	Anchor nail Ø 4 x 60 n=8	WBS Ø 5 x 50 n=8	WBS Ø 5 x 60 n=8	
Char. Tensile load capacity [kN]	31,7	12,5	14,7	15,2	18,2	19,4	

Load direction F1

Wood-to-wood connection						
Connection leg 1	GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 50 n=8	GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 60 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 40 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 50 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 60 n=8	Steel 37,4 kN
Connection leg 2	GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 50 n=8	GoFix® ZSS Ø 5 x 120 n=12 + WBS Ø 5 x 60 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 40 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 50 n=8	GoFix® ZSS Ø 5 x 120 n=12 + Anchor nail Ø 4 x 60 n=8	
Char. load-bearing capacity [kN] wood	37,16	37,4	34,7	35,2	35,4	

The load-bearing capacities were determined on the basis of ETA-23/0353. Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. bulk density. The minimum connecting material edge distances according to EC 5 must be observed.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

WE MAKE TIMBER CONSTRUCTION SAFER, MORE EFFICIENT AND MORE ATTRACTIVE

TAKE THE BEST


Wir machen den Holzbau sicherer,
effizienter und attraktiver

IDEFIX® DWD 308 / 410

Shear-resistant connection of wall and ceiling elements

Advantages

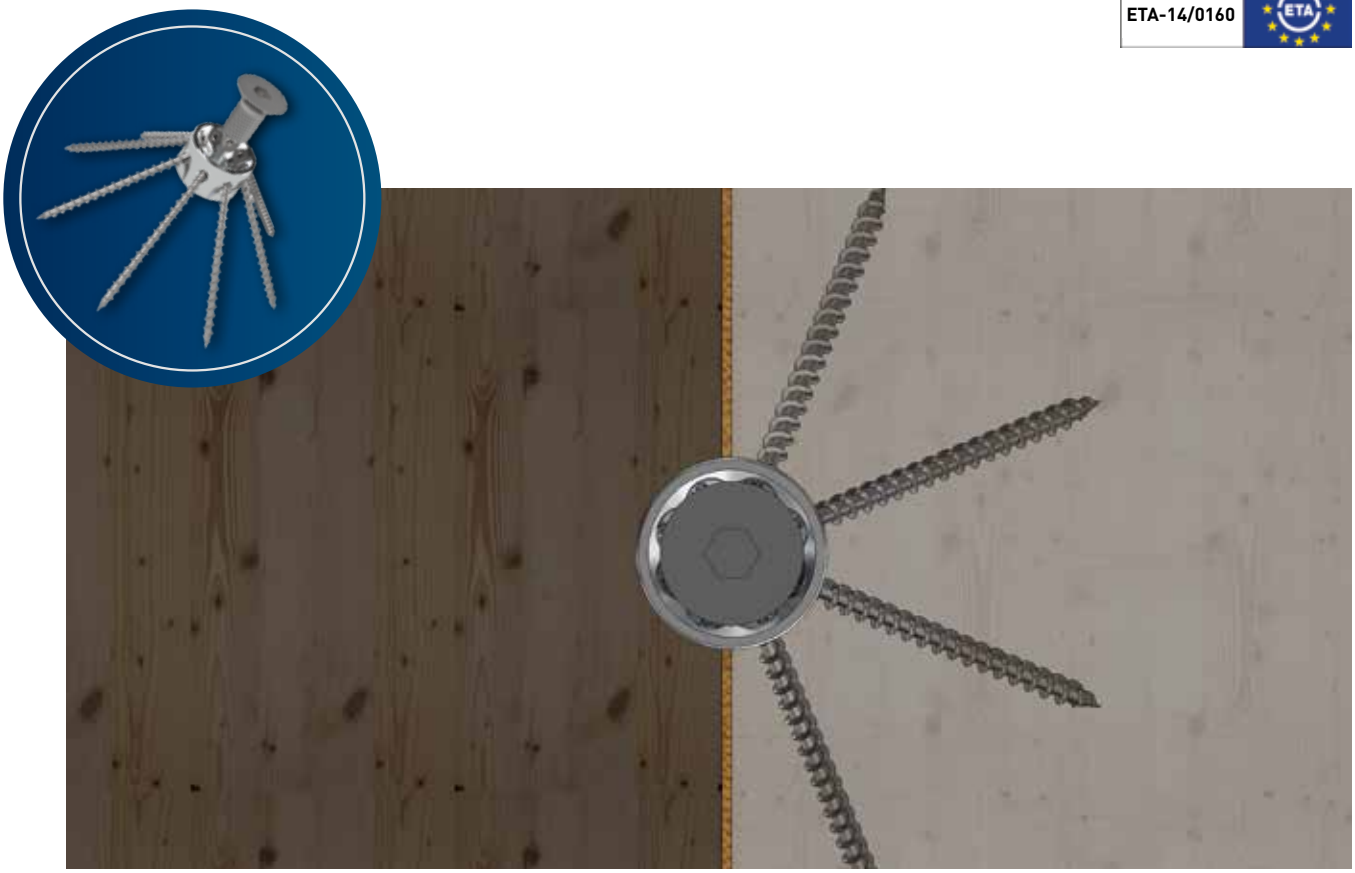
- Connects solid wood elements parallel and over corners
- For mounting in wood
- Shear-resistant connections of timber elements of all sizes and types
- Proven three-dimensional load absorption due to geometry and 45° bolting

Instructions for use

For parallel joints, drill with IdeFix® drill IB HMB together with IdeFix® drill bell IBG.
For corner joints, drill only with IdeFix® drill IB HMB.

SIHGA®		Dimension		
montagepack		IFK	GoFix® HK	Pressure dome
Art. No.	PU	d x h	d x h	d x h
28906	5	40 x 25	6,0 x 100	16 x 25
28896	5	30 x 20	5,0 x 80	12 x 20

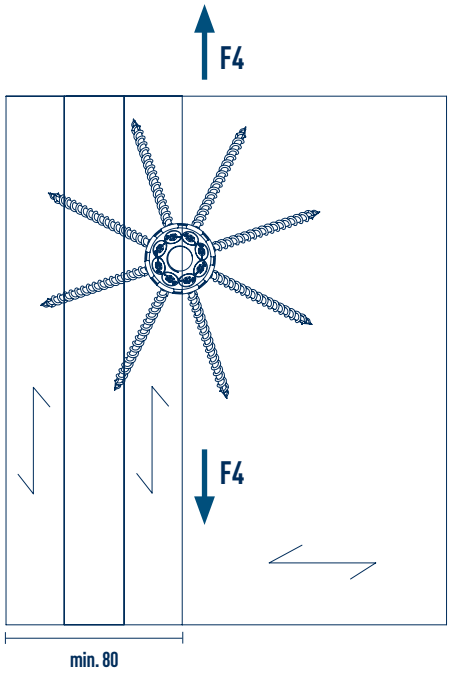
ETA-14/0160

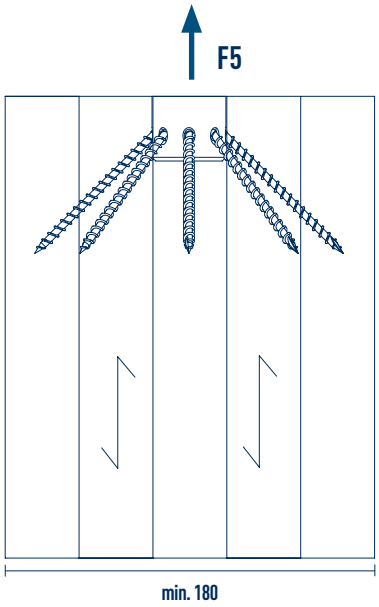


IdeFix® DWD 308 / 410 for fastening wall and ceiling elements.

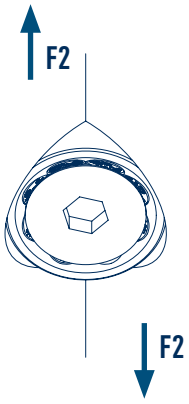
IDEFIX® DWD 308 / 410

Static values





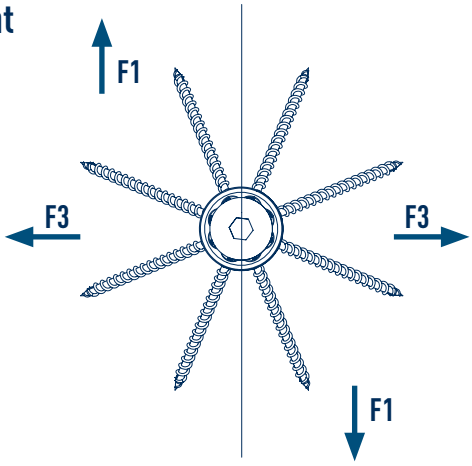
Corner joint



Minimum axis distances

Typ	X	Y
IdeFix® DWD	[mm]	[mm]
IFK 308	80	80
IFK 410	100	100

Parallel joint



Dimension IFK	Dimension GoFix® HK	Dimension Pressure dome	Characteristic value parallel	Characteristic value corner joint
d x h	d x L	d x L	F1 [kN]	F2 [kN]
30 x 20	5,0 x 80	12 x 20	14,30	6,33
40 x 25	6,0 x 100	16 x 25	20,36	8,99

Dimension IFK	Dimension GoFix® HK	Dimension Pressure dome	Characteristic value corner joint	Characteristic value corner joint	Characteristic value extract
d x h	d x L	d x L	F3 [kN]	F4 [kN]	F5 [kN]
30 x 20	5,0 x 80	12 x 20	8,27	12,61	31,66
40 x 25	6,0 x 100	16 x 25	11,75	20,36	44,98

HOBAFIX® HF

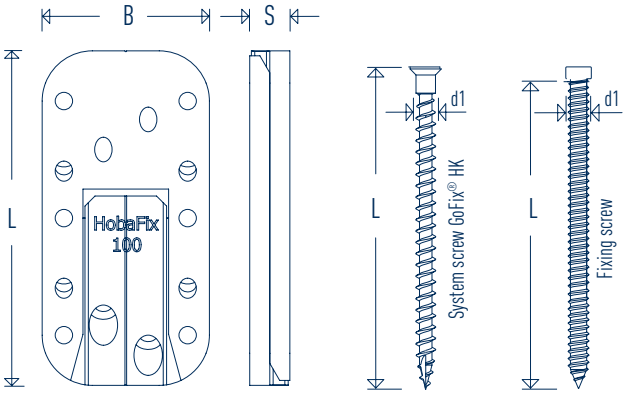
Node connection made of two identical parts

Advantages

- Can be prefabricated completely to prevent confusion
- High static load capacity in four directions, up to 48 kN per connection
- Great advantage during assembly:
  the suspension connection with Hoba coupling allows the two components to slide smoothly into each other
- Including fixing screw for securing
- Visible and non-visible connections
- Online measurement main beam - secondary beam (HT/NT)
- HFA test seal, externally monitored

Instructions for use

For simple design, there is the HT-NT (main beam - secondary beam) design tool at www.sihga.com. Not all holes have to be screwed on. Follow the assembly instructions.



HobaFix® HF for fixing main beam - secondary beam constructions.

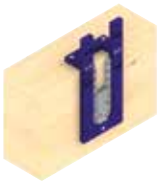
MADE IN AUSTRIA

SIHGA® montagepack		HobaFix® HF			Dimension GoFix® HK	Fixing screw
Art. No.	PU	Type (L)	B	S	d1 x L	d1 x L
30036	20*	70	30	9	4,0 x 60	4,2 x 50
30056	20*	100	50	12	5,0 x 80	4,8 x 80
30076	20*	135	50	12	5,0 x 80	4,8 x 120
30096	20*	170	50	12	5,0 x 80	4,8 x 120
30116	12*	200	70	17	6,0 x 100	6,3 x 180
30126	12*	240	70	17	6,0 x 100	6,3 x 180

* Corresponds to 10 or 6 connections

ETA-11/0135

To match:
System case HobaFix® HF (Art. No.: 49500, 49550, 49600)

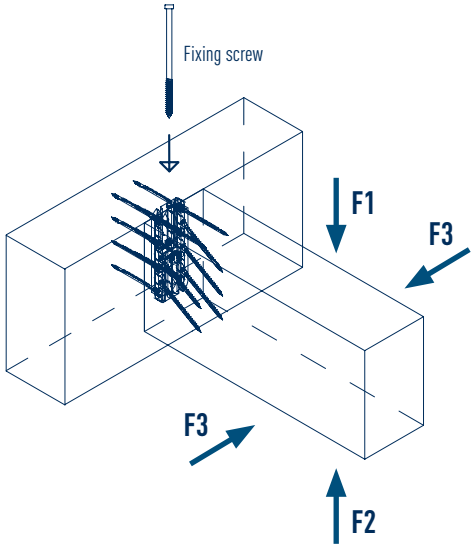


To match:
HobaFix® HFFM milling assembly jig (Art. No.: 29646, 29656, 29666)

To match:
HobaFix® HFF cutter with thrust ring (Art. No.: 29672, 29682, 29692)

HOBAFIX® HF

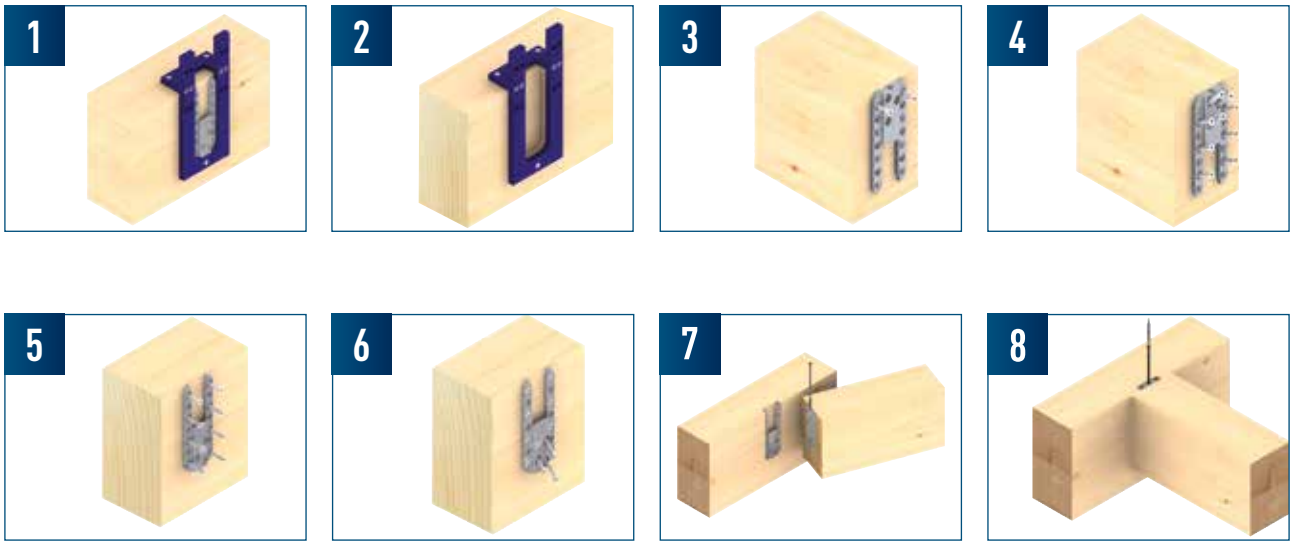
Static values



	Dimension				Secondary beam		Characteristic values**		
	HobaFix® HF		GoFix® HK	Fixing screw	Width	Height	Load direction [kN]		
Type (L)	B	S	d1 x L	d1 x L	[mm]	[mm]	F1	F2	F3
70	30	9	4,0 x 60	4,2 x 50	50	80	6,80	2,04	4,40
100	50	12	5,0 x 80	4,8 x 80	80	115	17,40	8,56	10,60
135	50	12	5,0 x 80	4,8 x 120	80	150	26,70	8,56	15,00
170	50	12	5,0 x 80	4,8 x 120	80	185	33,40	8,56	16,00
200	70	17	6,0 x 100	6,3 x 180	100	220	43,00	17,07	22,70
240	70	17	6,0 x 100	6,3 x 180	100	260	48,30	17,07	23,80

** Characteristic values for measurement according to EC 5 and strength class C 24 (Rk 350 kg/m³)

Application



HOBAFIX® MAX HFM

COMING SOON

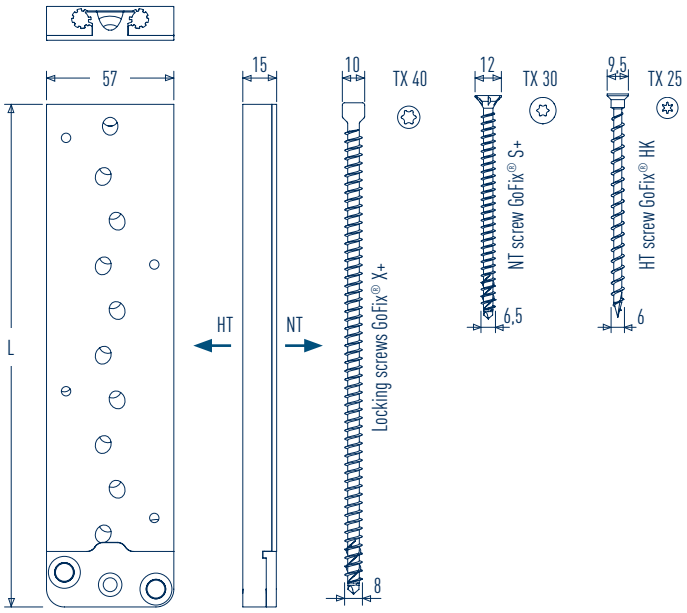
Connector for main beam - secondary beam constructions

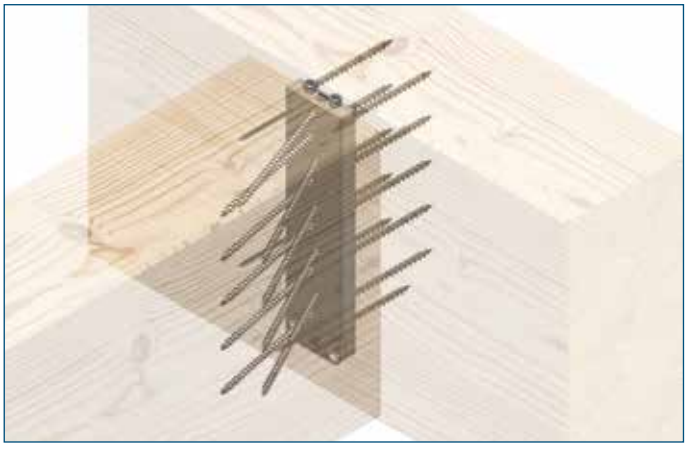
Advantages

- Wood-wood or wood-concrete connections are possible with the HobaFix® Max HFM (BeziFix® Anchors ZSS 7.5 x 80 for concrete must be ordered separately)
- Multiple node connections can be established
- Flexibility in the connection mechanism, length tolerances of up to -3 mm possible
- High static load capacity in six load cases, up to 100 kN per connection

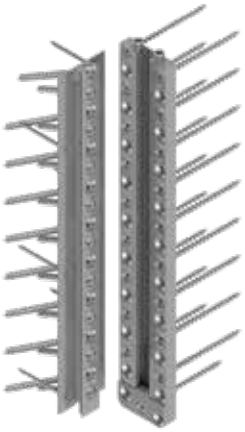
Instructions for use

The screw connection of the two connector parts can also be made from the underside (in the case of non-milled application).





HobaFix® Max HFM for fixing main beam - secondary beam.



MADE IN AUSTRIA

Dimension

HobaFix® Max HFM	GoFix® HK in HT/connector	GoFix® S+ in NT/connector	2 x locking screws GoFix® X+
Type (L)	6,0 x 100	6,5 x 100	8 x ...
225	11	10	220
265	13	12	245
305	15	14	295
345	17	16	330
385	19	18	330
425	21	20	330

requested ETA

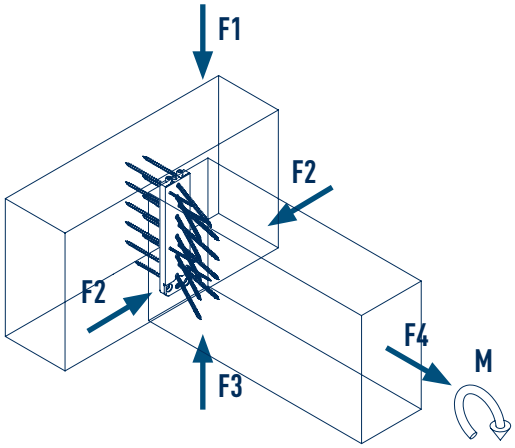
To match:
HobaFix® Max HGML milling assembly jig

To match:
HobaFix® Max HFMF cutter

HOBAFIX® MAX HFM

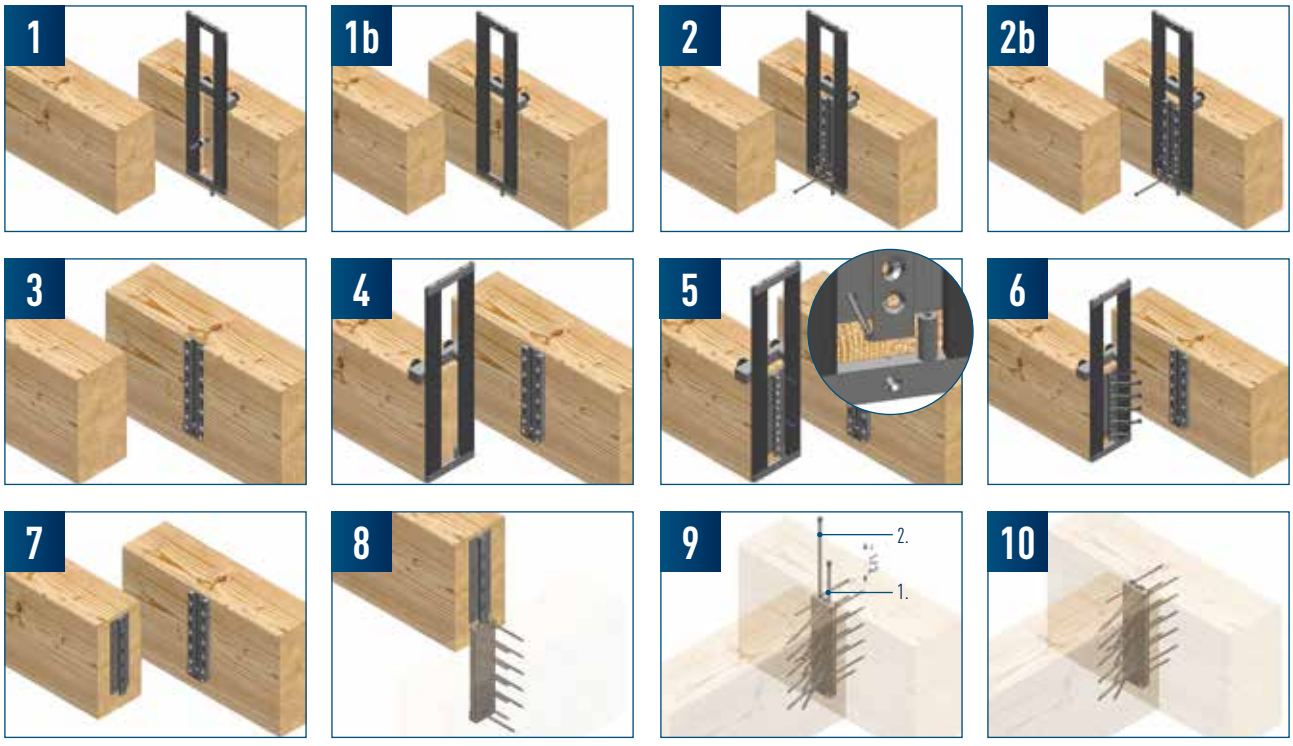
COMING SOON

Load directions



	Dimension			Main beam		Secondary beam	
HobaFix® Max HFM	GoFix® HK in HT/connector	GoFix® S+ in NT/connector	2 x locking screws GoFix® X+	min. Width	min. Height	min. Width	min. Height
Type (L)	6,0 x 100	6,5 x 100	8 x ...	[mm]	[mm]	[mm]	[mm]
225	11	10	220	100	280	100	260
265	13	12	245	100	320	100	300
305	15	14	295	100	360	100	340
345	17	16	330	120	400	120	380
385	19	18	330	120	440	120	420
425	21	20	330	120	480	120	460

Application



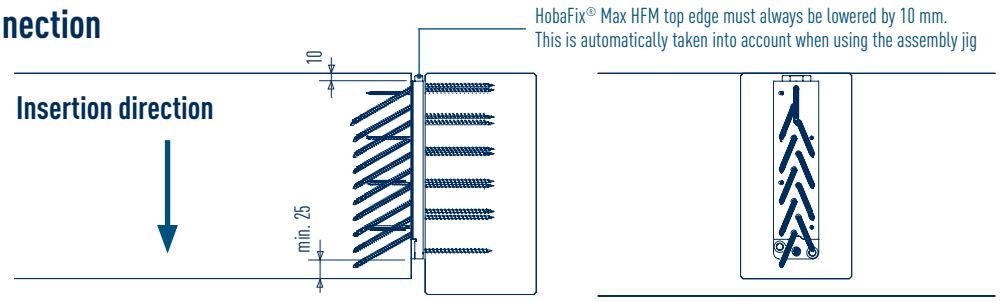
IMPORTANT: The load-bearing capacity of the connection is only given after the two locking screws have been screwed in.
The max. suspended load for all sizes of HobaFix® Max HFM must not exceed 800 kg per connector.

HOBAFIX® MAX HFM

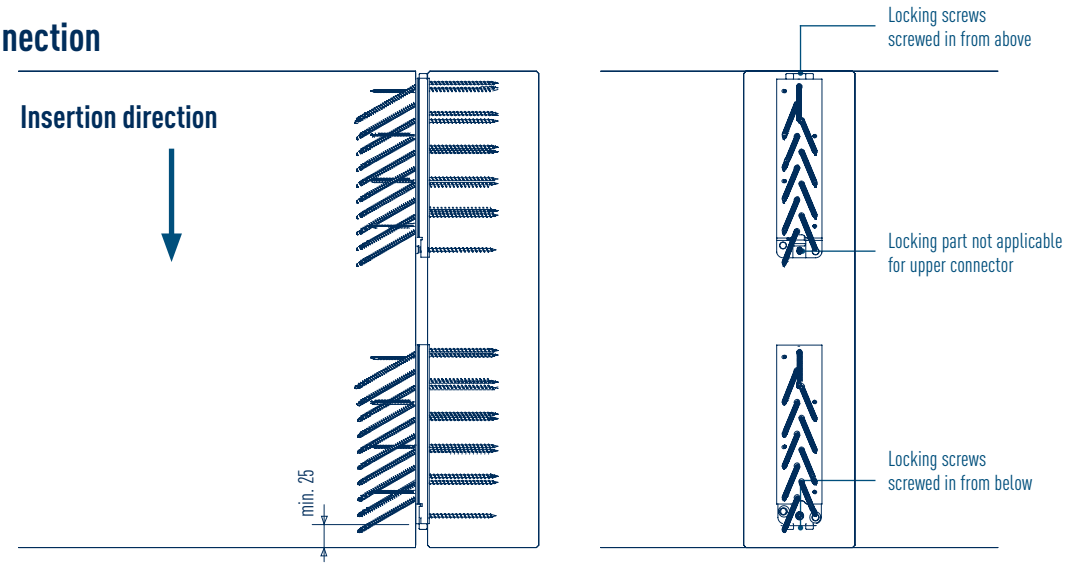
COMING SOON

Multiple application

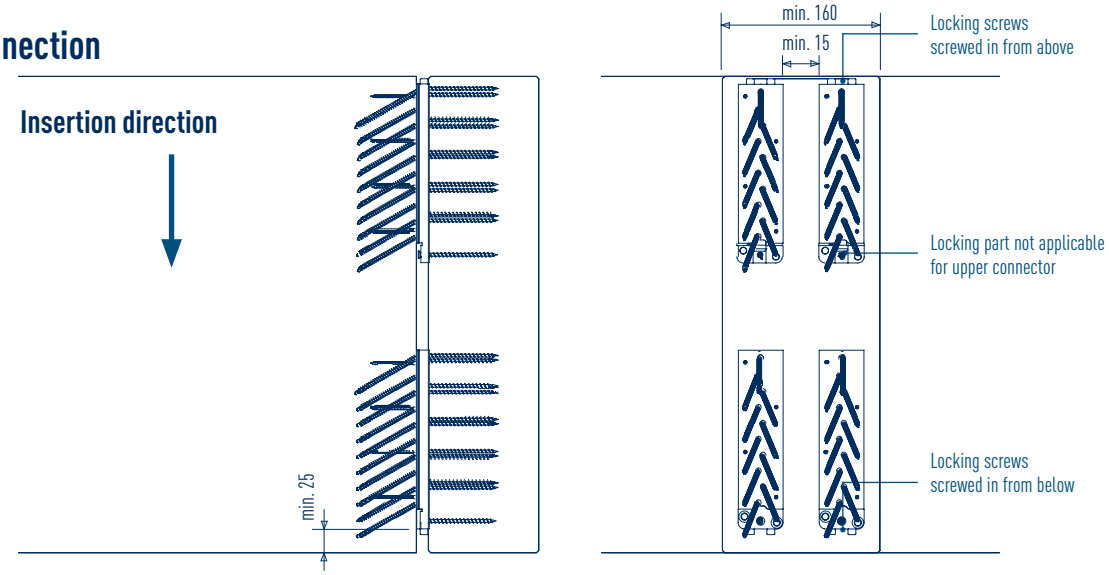
Single connection



2-fold connection



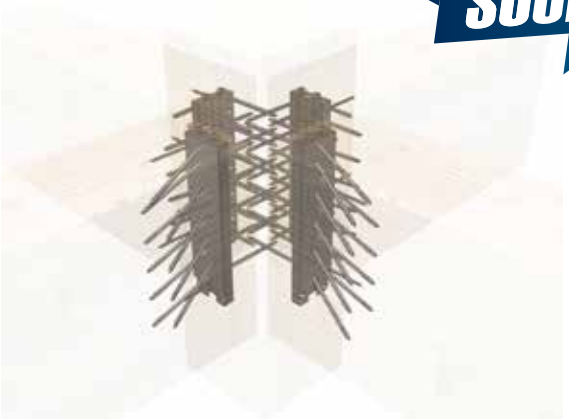
4-fold connection



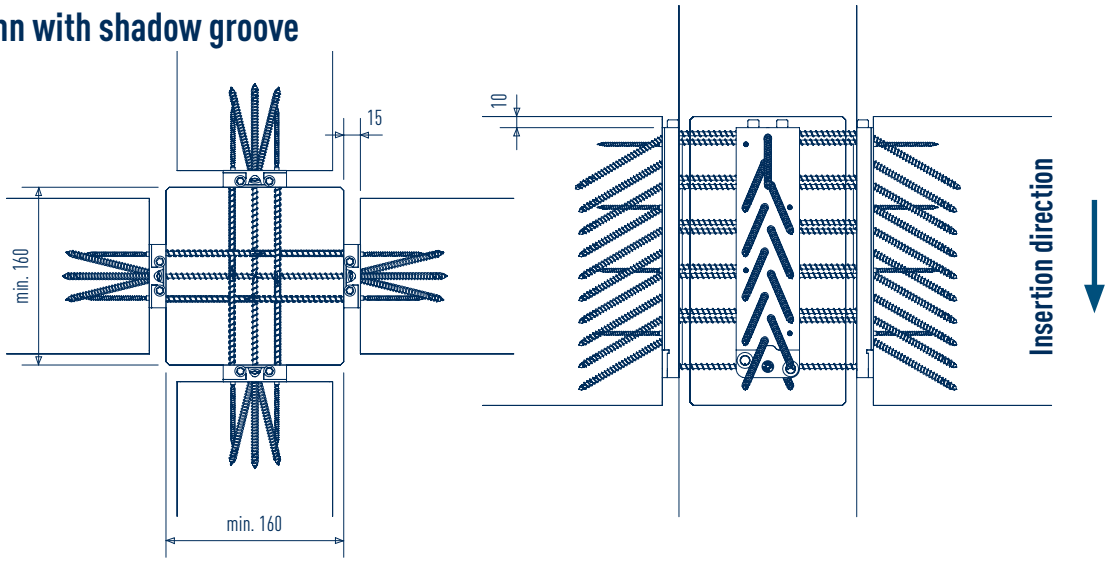
HOBAFIX® MAX HFM

COMING SOON

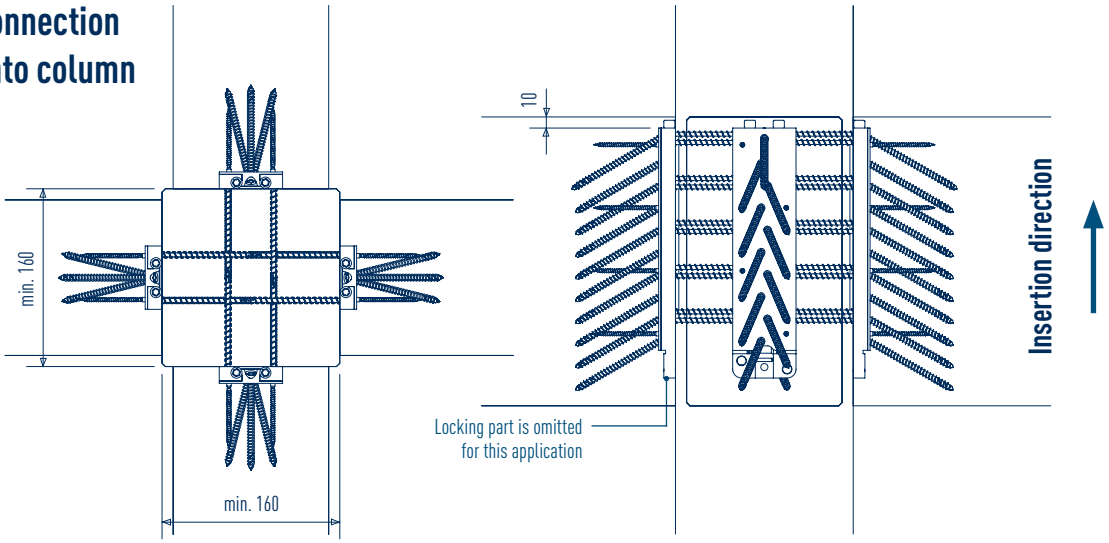
Multiple nodes on column



4-fold connection on column with shadow groove



4-fold connection milled into column



For applications of this type, the DUO bit TX 40, 350 mm is recommended so that the two locking screws can be screwed in.

STRUCTURAL FASTENERS

TAKE THE BEST

BEZIFIX® ANCHOR ZF/ZS/ZSS

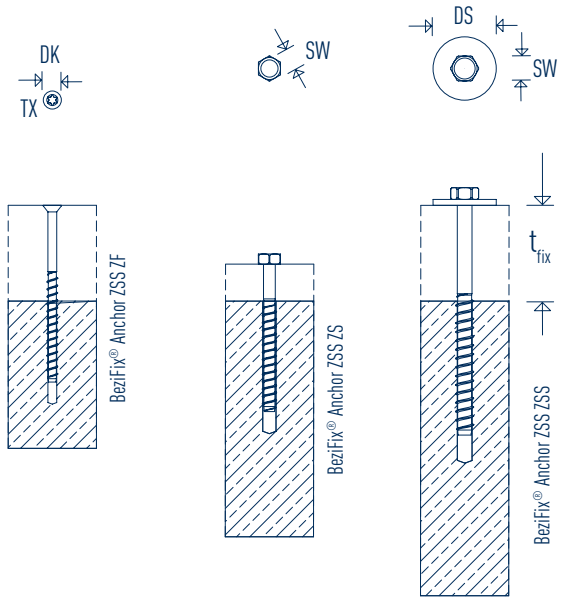
For dowel-free fixing in concrete

Advantages

- Ideal for fastening close to the edge, no spreading effect
- Simple push-through mounting
- Easy screwing into the pre-drilled concrete is made possible by the sawtooth thread in the front area
- Only hand-tightening is required to achieve full load capacity

Instructions for use

Pay attention to the correct drill diameter and drill quality -> that is why the drill is included. Use a tangential impact wrench for processing.



BeziFix® Anchor ZSS/ZS embedded in wall.

SIHGA®		Dimension	Mounting thickness	Dimension	
montagepack		BeziFix® Anchor ZF	t_{fix}	drive	DK
Art. No.	PU	d1 x L	[mm]	TX	[mm]
41306	100	7,5 x 40	5	40	13
41316	100	7,5 x 60	5	40	13
41326	100	7,5 x 80	25	40	13
41336	100	7,5 x 100	45	40	13
41346	100	7,5 x 120	65	40	13
41356	100	7,5 x 140	85	40	13
41366	100	7,5 x 160	105	40	13

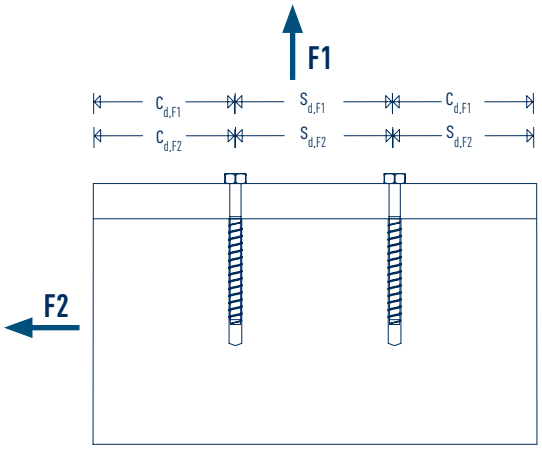
montagepack		BeziFix® Anchor ZS	t_{fix}	SW
Art. No.	PU	d1 x L	[mm]	[mm]
41506	50	10,5 x 60	5	15
41516	50	10,5 x 80	5	15
41526	50	10,5 x 100	25	15
41536	50	10,5 x 120	45	15
41546	50	10,5 x 140	65	15
41556	50	10,5 x 160	85	15

montagepack		BeziFix® Anchor ZSS	t_{fix}	SW	DS
Art. No.	PU	d1 x L	[mm]	[mm]	
41806	30	12,5 x 80	5	17	44
41816	30	12,5 x 100	5	17	44
41826	30	12,5 x 120	25	17	44
41836	30	12,5 x 140	45	17	44
41846	30	12,5 x 160	65	17	44
41856	30	12,5 x 180	85	17	44
41866	30	12,5 x 200	105	17	44
41876	30	12,5 x 240	145	17	44
41886	30	12,5 x 280	185	17	44
41896	30	12,5 x 320	225	17	44

ETA-16/0889 Option 1

BEZIFIX® ANCHOR ZF/ZS/ZSS

Static values



SIHGA®	BeziFix® Anchor ZSS		ZF	ZS	ZSS
Coating			SC 12	SC 12	SC 4
Diameter	Ø	[mm]	7,5	10,5	12,5
Screw-in depth	h_{nom}	[mm]	55	75	95
Effective anchorage depth	h_{ef}	[mm]	41	55	71
Drilling diameter concrete	d_o	[mm]	6,0	9,0	10,0
Drill hole depth	h_1	[mm]	70	90	110
Min. concrete thickness	h_{min}	[mm]	100	160	200
Max. starting torque	T_{max}	[Nm]	250	450	450
Min. edge and axis distances without load influence		[mm]	40	55	65

Notice
„SIHGA® Jointplan“ design software at **www.sihga.com/service/online-planung/** for downloading.

GOFIX® X+

Fixes blunt wood joints extremely quickly

Advantages

- Transmits high tensile, compressive and shear forces
- The optimised geometry of the drill tip allows for quick attachment and simultaneous pre-drilling
- Screwing at 0° to the grain is permissible: can be installed in all positions and angles in cross-laminated timber
- Special cylinder head: infinitely sinkable without splitting effect

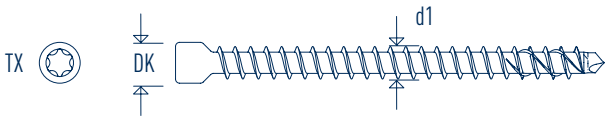
Instructions for use

For precise and fast series production of cross fittings, we recommend the professional assembly tool. For easier screwing-in, use the screwing tool GoFix® ESH 8. The GoFix® X+ can also be pre-drilled; X+ 6.5 with Ø 4 mm, X+ 8.0 with Ø 5 mm.

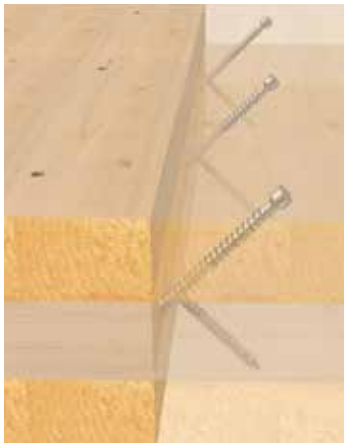
Dimension [mm]

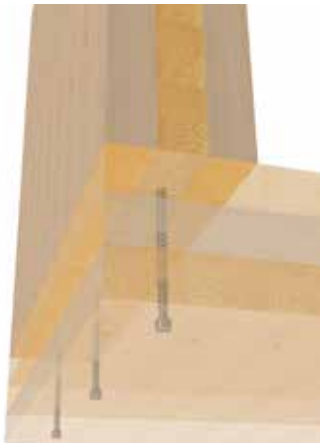
GoFix® X+

d1	TX	DK
6,5	30	8,0
8,0	40	10,0
10,0	50	13,0



ETA-11/0425

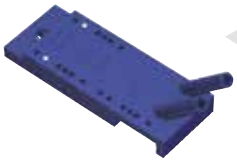




GoFix® X+ Application in cross-laminated timber.

To match:

GoFix® X+ System case for GoFix® X+ 6,5 and 8,0 mm (Art. No.: 49650, 49700)



To match:

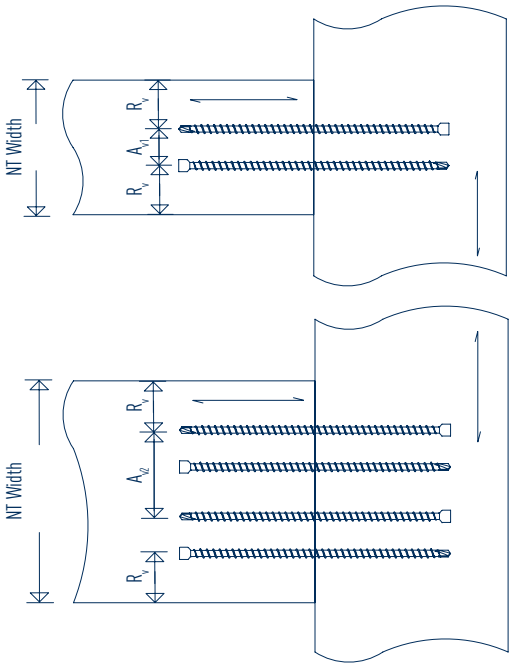
GoFix® X+ SL setting gauge for GoFix® X+ 6,5 and 8,0 mm (Art. No.: 31356, 31406)

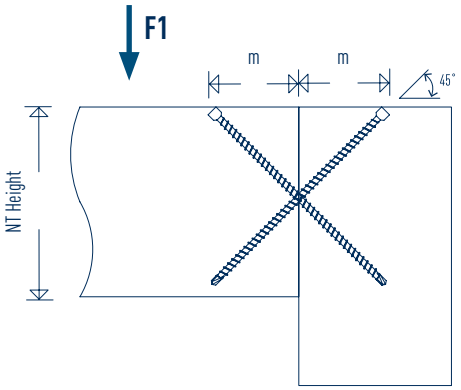
To match:

GoFix® X+ MW mounting bracket for GoFix® X+ 6,5 and 8,0 mm (Art. No.: 31456, 31486, 31506, 31536)

GOFIX® X+

Static values





Dimension [mm]

GoFix® X+

d1	TX	DK	R_V	A_{V1}	A_{V2}
6,5	30	8,0	20	10	33
8,0	40	10,0	24	12	40
10,0	50	13,0	30	15	50

SIHGA®		Dimension	Secondary beam	Assembly dimension	Transverse force F1 - 1 pair			Transverse force F1 - 2 pairs		
montagepack		GoFix® X+	NT Height	m	NT Width min.	Char. values*	Design values**	NT Width min.	Char. values*	Design values**
Art. No.	PU	d1 x L	min. [mm]	[mm]	[mm]	[kN]	[kN]	[mm]	[kN]	[kN]
42066	150	6,5 x 195	140	70	50	10,88		85	21,77	
42246	75	8,0 x 220	160	80	60	13,19		100	26,37	
42256	75	8,0 x 245	180	90	60	14,76		100	29,51	
42276	75	8,0 x 295	220	110	60	17,90		100	35,79	
42286	75	8,0 x 330	240	120	60	20,09		100		0,00
42296	75	8,0 x 375	270	135	60		15,89	100		31,78
42306	75	8,0 x 400	290	145	60		15,89	100		31,78
42316	75	8,0 x 430	310	155	60		15,89	100		31,78
42326	75	8,0 x 480	350	170	60		15,89	100		31,78
42666	50	10,0 x 300	220	110	75	22,15		125	44,29	
42676	50	10,0 x 330	240	120	75	24,44		125	48,88	
42686	50	10,0 x 360	260	130	75	26,73		125	53,46	
42696	50	10,0 x 400	290	145	75		22,43	125		44,86
42706	50	10,0 x 450	320	160	75		22,43	125		44,86
42716	50	10,0 x 500	360	180	75		22,43	125		44,86
42726	50	10,0 x 550	400	200	75		22,43	125		44,86
42736	50	10,0 x 600	430	215	75		22,43	125		44,86

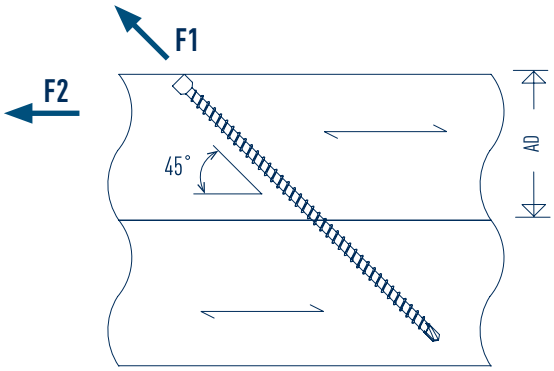
Subject to technical modifications and errors. Status of approval 05.2023

* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

** Design values according to EC 3 due to buckling (γ_M = 1.1 already taken into account)

GOFIX® X+

Static values

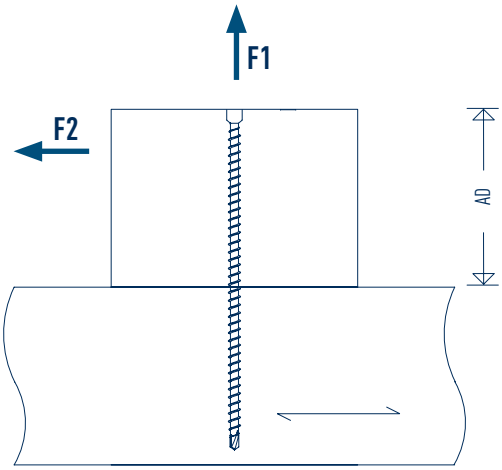


SIHGA®		Dimension	Attachment thickness	Characteristic values*	
montagepack		GoFix® X+	Wood	Tensile force F1	Transverse force F2
Art. No.	PU	d1 x L	AD [mm]	[kN]	[kN]
42026	150	6,5 x 120	45	4,08	2,88
42036	150	6,5 x 140	50	4,82	3,41
42046	150	6,5 x 160	60	5,56	3,93
42066	150	6,5 x 195	70	6,85	4,85
42226	75	8,0 x 155	60	6,44	4,55
42236	75	8,0 x 195	70	8,21	5,81
42246	75	8,0 x 220	80	9,32	6,59
42256	75	8,0 x 245	90	10,43	7,38
42276	75	8,0 x 295	105	12,65	8,95
42286	75	8,0 x 330	120	14,21	10,05
42296	75	8,0 x 375	135	16,21	11,46
42306	75	8,0 x 400	145	17,32	12,24
42316	75	8,0 x 430	155	18,65	13,19
42326	75	8,0 x 480	170	20,87	14,76
42666	50	10,0 x 300	110	15,66	11,07
42676	50	10,0 x 330	120	17,28	12,22
42686	50	10,0 x 360	130	18,90	13,36
42696	50	10,0 x 400	145	21,06	14,89
42706	50	10,0 x 450	160	23,76	16,80
42716	50	10,0 x 500	180	26,46	18,71
42726	50	10,0 x 550	195	29,16	20,62
42736	50	10,0 x 600	215	31,86	22,53

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® X+

Static values

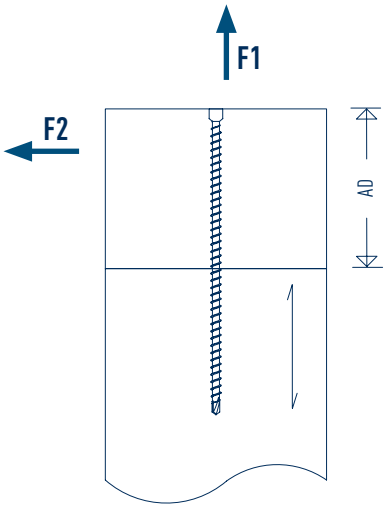


SIHGA® montagepack		Dimension GoFix® X+	Attachment thickness Wood	Characteristic values 90°* Tensile force F1	Characteristic values 90°* Transverse force F2
Art. No.	PU	d1 x L	AD [mm]	[kN]	[kN]
42026	150	6,5 x 120	60	4,08	3,25
42036	150	6,5 x 140	70	4,82	3,43
42046	150	6,5 x 160	80	5,56	3,62
42066	150	6,5 x 195	100	6,85	3,94
42226	75	8,0 x 155	80	6,39	4,77
42236	75	8,0 x 195	100	8,17	5,21
42246	75	8,0 x 220	110	9,28	5,49
42256	75	8,0 x 245	125	10,39	5,77
42276	75	8,0 x 295	150	12,61	6,32
42286	75	8,0 x 330	170	14,16	6,71
42296	75	8,0 x 375	190	16,16	7,21
42306	75	8,0 x 400	200	17,27	7,49
42316	75	8,0 x 430	215	18,60	7,82
42326	75	8,0 x 480	240	20,82	8,37
42666	50	10,0 x 300	150	15,55	8,33
42676	50	10,0 x 330	170	17,17	8,73
42686	50	10,0 x 360	180	18,79	9,14
42696	50	10,0 x 400	200	20,95	9,68
42706	50	10,0 x 450	225	23,65	10,35
42716	50	10,0 x 500	250	26,35	11,03
42726	50	10,0 x 550	275	29,05	11,70
42736	50	10,0 x 600	300	31,75	12,38

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® X+

Static values

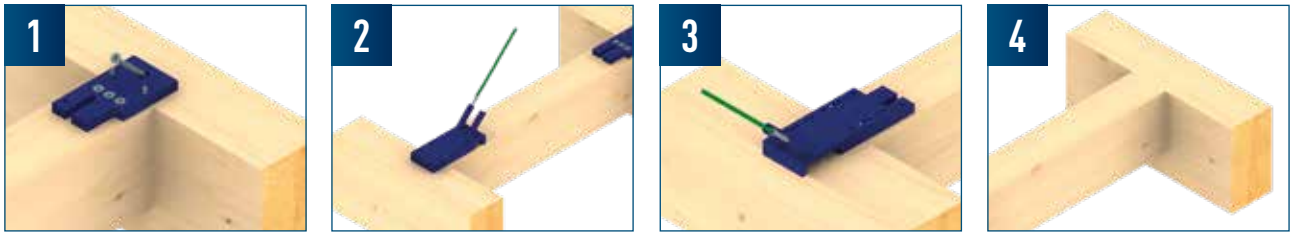


SIHGA®		Dimension	Attachment thickness	Characteristic values 0°*	
montagepack		GoFix® X+	Wood	Tensile force F1	Transverse force F2
Art. No.	PU	d1 x L	AD [mm]	[kN]	[kN]
42026	150	6,5 x 120	60	1,22	1,50
42036	150	6,5 x 140	70	1,44	1,91
42046	150	6,5 x 160	80	1,67	1,97
42066	150	6,5 x 195	100	2,06	2,06
42226	75	8,0 x 155	80	1,92	2,61
42236	75	8,0 x 195	100	2,45	2,75
42246	75	8,0 x 220	110	2,78	2,83
42256	75	8,0 x 245	125	3,12	2,91
42276	75	8,0 x 295	150	3,78	3,08
42286	75	8,0 x 330	170	4,25	3,20
42296	75	8,0 x 375	190	4,85	3,35
42306	75	8,0 x 400	200	5,18	3,43
42316	75	8,0 x 430	215	5,58	3,53
42326	75	8,0 x 480	240	6,25	3,70
42666	50	10,0 x 300	150	4,67	4,07
42676	50	10,0 x 330	170	5,15	4,19
42686	50	10,0 x 360	180	5,64	4,32
42696	50	10,0 x 400	200	6,29	4,48
42706	50	10,0 x 450	225	7,10	4,68
42716	50	10,0 x 500	250	7,91	4,88
42726	50	10,0 x 550	275	8,72	5,09
42736	50	10,0 x 600	300	9,53	5,29

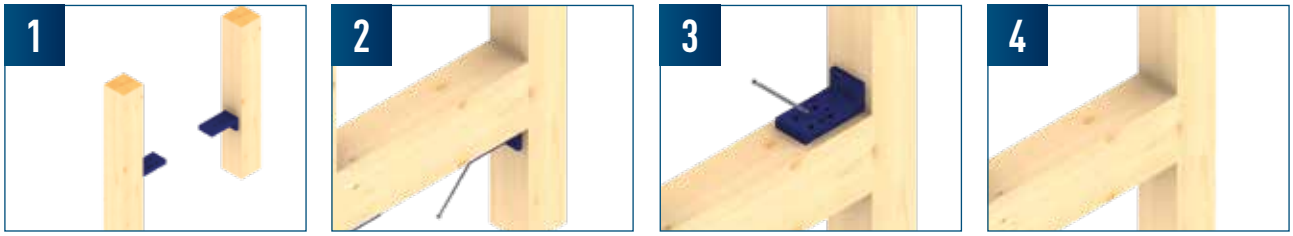
Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® X+

Application of GoFix® X+ SL setting gauge



Application of GoFix® X+ MW mounting bracket



GOFIX® S+

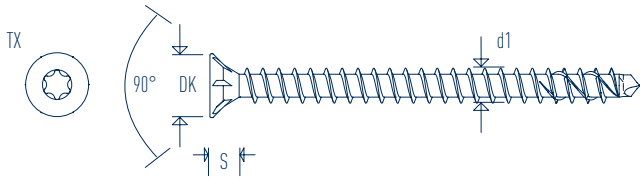
Attaches steel parts to wood

Advantages

- Ideal for suspending wooden ceilings from steel beams, fixing steel angles to wooden beams, suspensions with steel supports
- Permanent, secure and friction-locked fastening
- Load forces are optimally transferred from the wood to the steel part
- Processing with impact wrenches

Instructions for use

Observe edge and axis distances. For easier screwing-in, use the screwing tool GoFix® ESH 8.

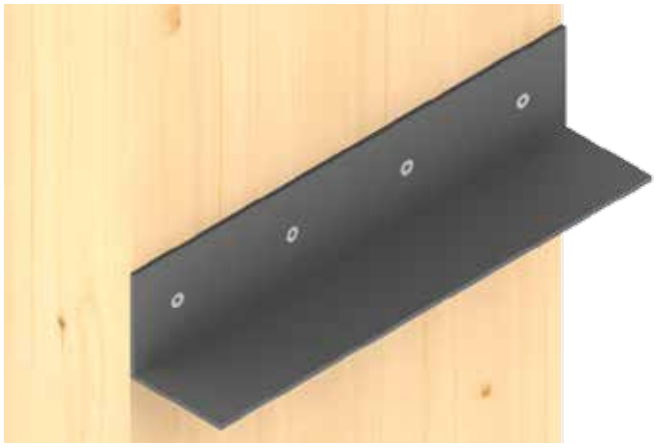


Dimension [mm]

GoFix® S+

d1	TX	DK	S
8,0	40	15,0	5,5
10,0	50	18,3	6,5

ETA-11/0425



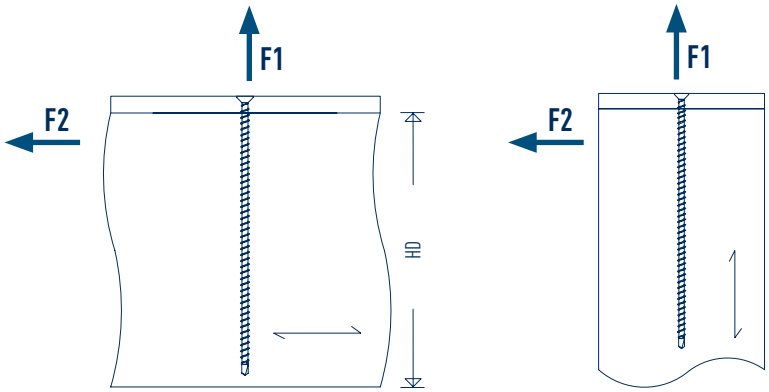
GoFix® S+ with SIHGA® drill tip and optimised thread.

To match:

GoFix® ESH 8 screw-in tool for GoFix® types X+ / S+ / SH (Art. No.: 31446)

GOFIX® S+

Static values

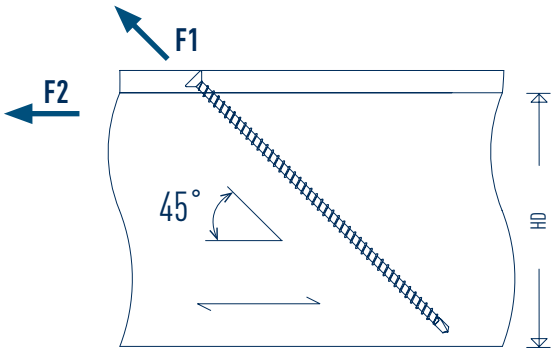


SIHGA® montagepack		Dimension GoFix® S+	Wooden component HD	Characteristic values 90°* Tensile force F1	Characteristic values 90°* Transverse force F2	Characteristic values 0°* Tensile force F1	Characteristic values 0°* Transverse force F2
Art. No.	PU	d1 x L	[mm]	[kN]	[kN]	[kN]	[kN]
42406	75	**8,0 x 95**	100	6,66	6,07	2,00	3,52
42416	75	**8,0 x 125**	130	9,32	6,81	2,80	3,72
42426	75	**8,0 x 155**	160	11,90	7,46	3,57	3,91
42436	75	**8,0 x 195**	200	15,45	8,34	4,64	4,18
42446	75	**8,0 x 220**	230	17,67	8,90	5,30	4,34
42456	75	**8,0 x 245**	250	19,89	9,45	5,97	4,51
42466	75	**8,0 x 270**	280	22,11	10,01	6,63	4,68
42476	75	**8,0 x 295**	300	24,33	10,56	7,30	4,84
42486	75	**8,0 x 330**	340	25,00	10,73	8,23	5,08
42496	75	**8,0 x 375**	380	25,00	10,73	9,43	5,38
42506	75	**8,0 x 400**	410	25,00	10,73	10,10	5,54
42516	75	**8,0 x 430**	440	25,00	10,73	10,90	5,74
42526	75	**8,0 x 480**	490	25,00	10,73	12,23	6,08
42806	50	**10,0 x 125**	130	11,23	9,09	3,37	4,95
42816	50	**10,0 x 155**	160	14,47	9,90	4,34	5,20
42826	50	**10,0 x 195**	200	18,79	10,98	5,64	5,52
42836	50	**10,0 x 220**	230	21,49	11,65	6,45	5,72
42846	50	**10,0 x 245**	250	24,19	12,33	7,26	5,93
42856	50	**10,0 x 270**	280	26,89	13,00	8,07	6,13
42866	50	**10,0 x 300**	310	30,13	13,81	9,04	6,37
42876	50	**10,0 x 330**	340	33,00	14,53	10,01	6,61
42886	50	**10,0 x 360**	370	33,00	14,53	10,98	6,86
42896	50	**10,0 x 400**	410	33,00	14,53	12,28	7,18
42906	50	**10,0 x 450**	460	33,00	14,53	13,90	7,59
42916	50	**10,0 x 500**	510	33,00	14,53	15,52	7,99
42926	50	**10,0 x 550**	560	33,00	14,53	17,14	8,40
42936	50	**10,0 x 600**	610	33,00	14,53	18,76	8,80

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24). Selected steel part thickness 15 mm

GOFIX® S+

Static values



SIHGA® montagepack		Dimension GoFix® S+	Wooden component HD	Characteristic values* Tensile force F1	Transverse force F2
Art. No.	PU	d1 x L	[mm]	[kN]	[kN]
42406	75	**8,0 x 95**	70	6,11	4,32
42416	75	**8,0 x 125**	95	8,77	6,20
42426	75	**8,0 x 155**	115	11,44	8,09
42436	75	**8,0 x 195**	145	14,99	10,60
42446	75	**8,0 x 220**	165	17,21	12,17
42456	75	**8,0 x 245**	180	19,43	13,74
42466	75	**8,0 x 270**	200	21,65	15,31
42476	75	**8,0 x 295**	215	23,87	16,88
42486	75	**8,0 x 330**	240	25,00	17,68
42496	75	**8,0 x 375**	270	25,00	17,68
42506	75	**8,0 x 400**	290	25,00	17,68
42516	75	**8,0 x 430**	310	25,00	17,68
42526	75	**8,0 x 480**	345	25,00	17,68
42806	50	**10,0 x 125**	95	10,67	7,54
42816	50	**10,0 x 155**	115	13,91	9,84
42826	50	**10,0 x 195**	145	18,23	12,89
42836	50	**10,0 x 220**	165	20,93	14,80
42846	50	**10,0 x 245**	180	23,63	16,71
42856	50	**10,0 x 270**	200	26,33	18,62
42866	50	**10,0 x 300**	220	29,57	20,91
42876	50	**10,0 x 330**	240	32,81	23,20
42886	50	**10,0 x 360**	260	33,00	23,33
42896	50	**10,0 x 400**	290	33,00	23,33
42906	50	**10,0 x 450**	325	33,00	23,33
42916	50	**10,0 x 500**	360	33,00	23,33
42926	50	**10,0 x 550**	395	33,00	23,33
42936	50	**10,0 x 600**	430	33,00	23,33

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24). Selected steel part thickness 15 mm

ANGLE FITTING SCREW (WBS)

For quick and easy screwing in

The angle fitting screw (WBS) is made of **hardened carbon steel** and was specially designed for **connections between steel sheeting and wood**. The splitting effect in the wood is reduced by the geometry of the screw tip. The screw also features, among other things, the **smooth shank under the head**, which enables load transfer during shearing.

ETA-11/0425

Advantages

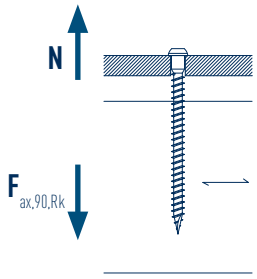
- **Half-round head**
  » Screw head rests on the material surface
  » Minimisation of the risk of injury in case of contact
- **Below-head cylinder**
  » For better transmission of transverse forces from the steel attachment to the screw body
- **Coarse thread**
  » Allows faster screwing in
- **Screw tip with scraper groove**
  » Ensures quick and easy screwing in

SIHGA® montagepack		**Dimension** Angle fitting screw (WBS)			
Art. No.	PU	d1 x L	TX	DK	S
60826	250	5,0 x 50	20	7,2	9,0
60836	250	5,0 x 60	20	7,2	9,0
60846	250	5,0 x 70	20	7,2	9,0

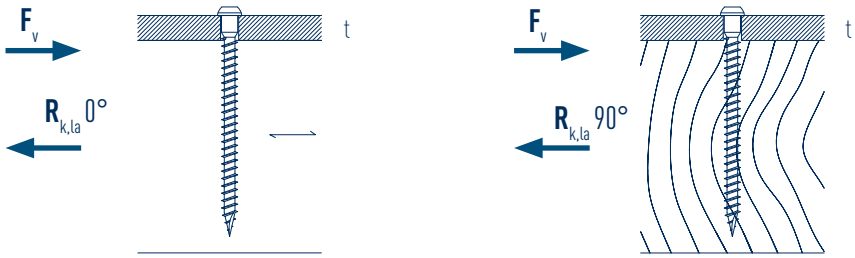
Angle fitting screw in Mass-X® Angle Z.

ANGLE FITTING SCREW (WBS)

Technical information
Winding resistance



Steel-wood shearing



Dimension	Extract resistance		Steel-wood shearing	
Angle fitting screw (WBS)	$F_{ax,90,Rk}$	t [mm]	$R_{k,la}$ 0° [kN]	$R_{k,la}$ 90° [kN]
d1 x L	t ≥ 9,0 [mm]		α = 0°	α = 90°
5,0 x 50	2,48	1,5 - 4	2,36	1,97
5,0 x 60	3,09		2,51	2,12
5,0 x 70	3,69		2,67	2,27

Measurement according to ETA-11/0425. Bulk density ρ_k= 350 kg/m³. ³. All mechanical values given are to be considered depending on the assumptions made and represent design examples. All values are calculated minimum values and are subject to typesetting and printing errors.

a) The characteristic values of the load-bearing capacityRk are not to be equated with the max. possible action (the max. force). Characteristic values of the load-bearing capacity R_k are to be reduced to design values Rd in relation to service class and class of load duration: $R_d = R_k \cdot k_{mod} / \gamma_M$. The design values of the load-bearing capacity R_d are to be compared with the design values of the actions E_d ($R_d \geq E_d$).

Example:
Characteristic value for permanent action (dead load) G_k= 2,00 kN and variable action (e.g. snow load) Q_k= 3,00 kN. k_{mod}= 0,9. γ_M= 1,3.
⟶ Design value of the action E_d= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
Load-bearing capacity of the connection is considered to be verified if $R_d \geq E_d$. ⟶ min $R_k = R_d \cdot \gamma_M / k_{mod}$
In other words, the characteristic minimum value of the load-bearing capacity is calculated as: min $R_k = R_d \cdot \gamma_M / k_{mod}$ → R_k= 7,20 kN · 1,3/0,9= 10,40 kN ⟶ Comparison with table values.
Caution: These are planning tools. Projects must be dimensioned exclusively by authorised persons.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

WE ARE TRUSTWORTHY, ENVIRONMENTALLY CONSCIOUS AND HUMANE

TAKE THE BEST


Wir sind vertrauensvoll,
umweltbewusst und menschlich

GOFIX® MS II

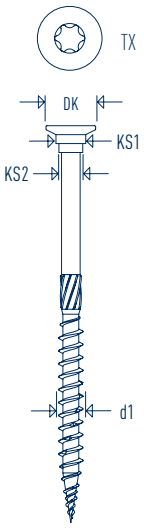
The wood construction screw

Advantages

- Attaches compression-resistant insulation materials (with a compressive stress above 50 kPa) for above-rafter insulation
- Special multi-stage head reduces the splitting effect in the wood
- With SIHGA® tip, special milling ribs as well as special coating
- Screw connection permissible at 0° to 90° to the fibre

Instructions for use

For a perfect screw pattern, screw in the head flush.



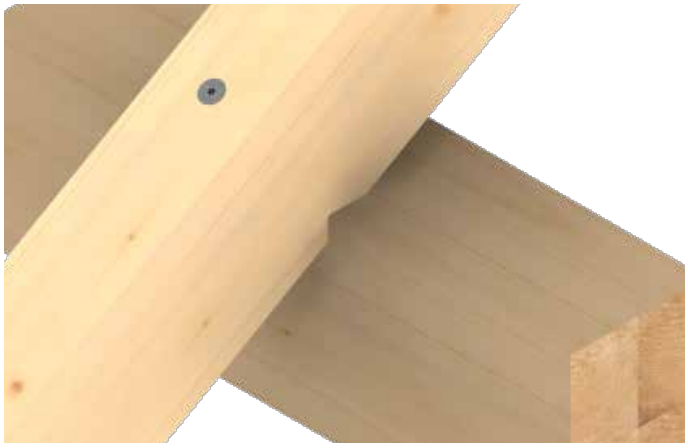
MADE IN AUSTRIA

Dimension [mm]

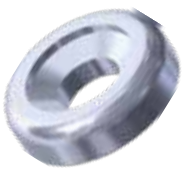
GoFix® MS II

d1	TX	DK	KS 1	KS 2
4,0	15	8,0	5,2	4,0
4,5	20	9,0	5,9	4,5
5,0	25	10,0	6,6	5,0
6,0	30	13,5	8,6	6,0
8,0	40	18,3	11,6	8,0
10,0	50	22,5	14,4	10,0

ETA-20/0558



GoFix® MS II

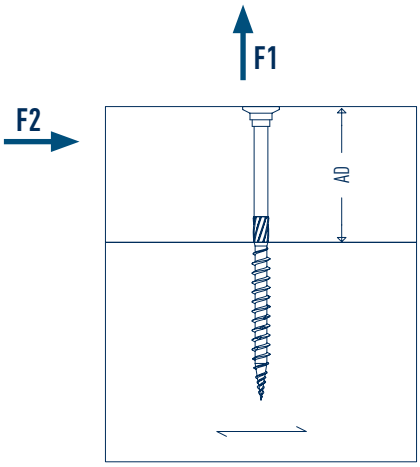


To match:

GoFix® MSZ decorative disc for GoFix® MS II 8,0 (Art. No.: 44696)

GOFIX® MS II

Static values

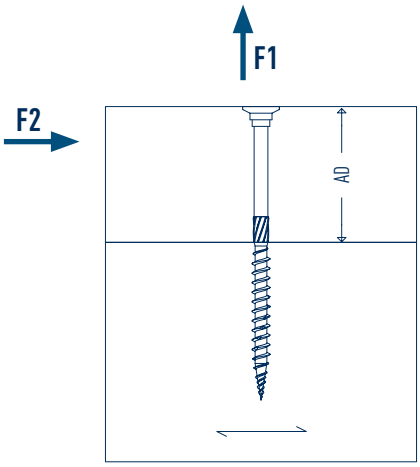


SIHGA®		Dimension	Attachment	Characteristic values*			
montagepack		GoFix® MS II	AD	Tensile force F1 [kN]		Transverse force F2 [kN]	
Art. No.	PU	d1 x L	[mm]	Head	Thread	Wood-wood	Steel-wood
44056	500	**4,0 x 30**	12	1,04	1,04	0,75	1,10
44066	500	**4,0 x 35**	14	1,13	1,22	0,79	1,23
44076	500	**4,0 x 40**	16	1,13	1,39	0,82	1,29
44086	500	**4,0 x 45**	18	1,13	1,57	0,84	1,29
44096	500	**4,0 x 50**	20	1,13	1,74	0,87	1,29
44106	500	**4,0 x 60**	24	1,13	2,09	0,94	1,29
44226	400	**4,5 x 50**	20	1,39	1,89	1,01	1,52
44236	400	**4,5 x 60**	24	1,39	2,27	1,09	1,52
44246	300	**4,5 x 70**	28	1,39	2,65	1,16	1,52
44316	200	**5,0 x 50**	20	1,67	2,07	1,20	1,92
44326	200	**5,0 x 60**	24	1,67	2,48	1,27	1,92
44336	200	**5,0 x 70**	28	1,67	2,90	1,34	1,92
44346	200	**5,0 x 80**	32	1,67	3,31	1,42	1,92
44356	200	**5,0 x 90**	36	1,67	3,73	1,48	1,92
44366	200	**5,0 x 100**	40	1,67	4,14	1,48	1,92
44376	200	**5,0 x 120**	50	1,67	4,83	1,48	1,92
44406	100	**6,0 x 70**	28	2,97	3,38	1,90	2,87
44416	100	**6,0 x 80**	32	2,97	3,86	1,98	2,87
44426	100	**6,0 x 90**	36	2,97	4,43	2,06	2,87
44436	100	**6,0 x 100**	40	2,97	4,82	2,15	2,87
44446	100	**6,0 x 120**	50	2,97	5,63	2,25	2,87
44456	100	**6,0 x 140**	70	2,97	5,63	2,25	2,87
44466	100	**6,0 x 160**	90	2,97	5,63	2,25	2,87
44476	100	**6,0 x 180**	110	2,97	5,63	2,25	2,87
44486	100	**6,0 x 200**	130	2,97	5,63	2,25	2,87

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® MS II

Static values

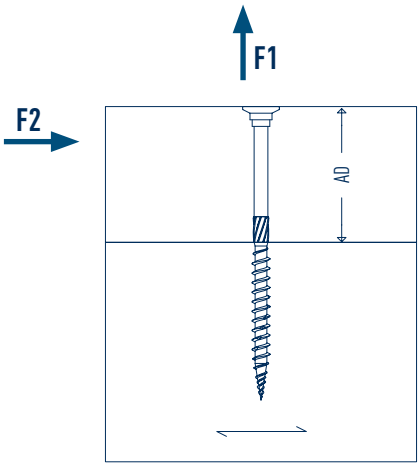


SIHGA®		Dimension	Attachment	Characteristic values*			
montagepack		GoFix® MS II	AD	Tensile force F1 [kN]		Transverse force F2 [kN]	
Art. No.	PU	d1 x L	[mm]	Head	Thread	Wood-wood	Steel-wood
44506	75	**8,0 x 80**	30	4,96	4,96	2,96	4,66
44516	75	**8,0 x 100**	40	5,05	5,95	3,19	4,72
44526	75	**8,0 x 120**	50	5,05	6,94	3,44	4,72
44536	75	**8,0 x 140**	60	5,05	7,94	3,71	4,72
44546	75	**8,0 x 160**	70	5,05	8,93	3,71	4,72
44556	75	**8,0 x 180**	80	5,05	9,92	3,71	4,72
44566	75	**8,0 x 200**	100	5,05	9,92	3,71	4,72
44576	75	**8,0 x 220**	120	5,05	9,92	3,71	4,72
44586	75	**8,0 x 240**	140	5,05	9,92	3,71	4,72
44596	75	**8,0 x 260**	160	5,05	9,92	3,71	4,72
44606	75	**8,0 x 280**	180	5,05	9,92	3,71	4,72
44616	75	**8,0 x 300**	200	5,05	9,92	3,71	4,72
44626	75	**8,0 x 320**	220	5,05	9,92	3,71	4,72
44636	75	**8,0 x 340**	240	5,05	9,92	3,71	4,72
44646	75	**8,0 x 360**	260	5,05	9,92	3,71	4,72
44656	75	**8,0 x 380**	280	5,05	9,92	3,71	4,72
44666	75	**8,0 x 400**	300	5,05	9,92	3,71	4,72
44676	75	**8,0 x 450**	350	5,05	9,92	3,71	4,72
44686	75	**8,0 x 500**	400	5,05	9,92	3,71	4,72

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® MS II

Static values



SIHGA®		Dimension	Attachment	Characteristic values*			
montagepack		GoFix® MS II	AD	Tensile force F1 [kN]		Transverse force F2 [kN]	
Art. No.	PU	d1 x L	[mm]	Head	Thread	Wood-wood	Steel-wood
44706	50	**10,0 x 80**	30	5,75	5,75	3,49	5,57
44716	50	**10,0 x 100**	40	6,90	6,90	4,16	6,34
44726	50	**10,0 x 120**	50	7,09	8,05	4,48	6,39
44736	50	**10,0 x 140**	60	7,09	9,20	4,79	6,39
44746	50	**10,0 x 160**	70	7,09	10,35	5,04	6,39
44756	50	**10,0 x 180**	80	7,09	11,50	5,04	6,39
44766	50	**10,0 x 200**	100	7,09	11,50	5,04	6,39
44776	50	**10,0 x 220**	120	7,09	11,50	5,04	6,39
44786	50	**10,0 x 240**	140	7,09	11,50	5,04	6,39
44796	50	**10,0 x 260**	160	7,09	11,50	5,04	6,39
44806	50	**10,0 x 280**	180	7,09	11,50	5,04	6,39
44816	50	**10,0 x 300**	200	7,09	11,50	5,04	6,39
44826	50	**10,0 x 320**	220	7,09	11,50	5,04	6,39
44836	50	**10,0 x 340**	240	7,09	11,50	5,04	6,39
44846	50	**10,0 x 360**	260	7,09	11,50	5,04	6,39
44856	50	**10,0 x 400**	300	7,09	11,50	5,04	6,39
44866	50	**10,0 x 450**	350	7,09	11,50	5,04	6,39
44876	50	**10,0 x 500**	400	7,09	11,50	5,04	6,39
44886	50	**10,0 x 550**	450	7,09	11,50	5,04	6,39
44896	50	**10,0 x 600**	500	7,09	11,50	5,04	6,39

Subject to technical modifications and errors. Status of approval 05.2023
* Characteristic values for measurement according to EC 5, bulk density ρk = 350 kg/m³ (C24)

GOFIX® ZSS

The screw for Mass-X® Pull Angle / Mass-X® Angle Q HH/HB and Mass-X® Pull HH / HB

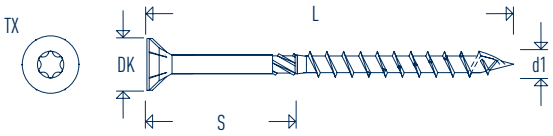
The GoFix® ZSS can always be inserted into CLT without pre-drilling. The GoFix® ZSS is a wood construction screw with a special screw tip and milling ribs above the thread.
The cutting notch on the screw tip ensures quick gripping and less of a splitting effect when screwing in. The GoFix® ZSS also has a folded thread, which reduces the resistance to screwing in.

Advantages

- Faster and easier screwing in
- Less splitting effect
- National and international approvals
- Free from chromium (VI) oxide
- No hammering of the screws when screwing in

ETA-11/0425

SIHGA® montagepack		Dimension GoFix®ZSS			
Art. No.	PU	d1 x L	TX	DK	S
60816	200	5,0 x 120	25	10,0	50,0

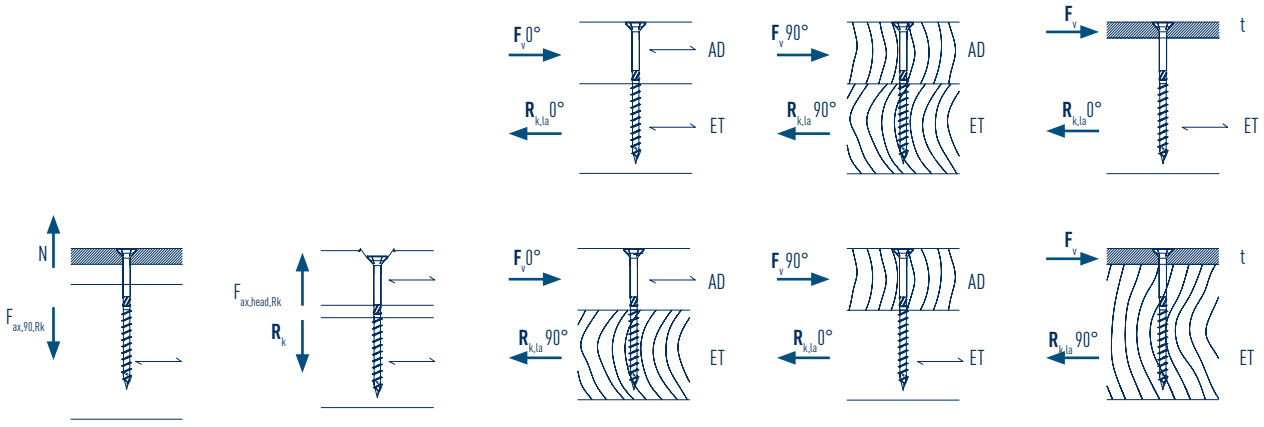


GoFix® ZSS

GOFIX® ZSS

Technical information

Extract resistance | **Head pull-through resistance** | **Wood-wood shear-off** | **Steel-wood shear-off**



Dimension	Extract resistance	Head pull-through resistance	Wood-wood shear-off				Steel-wood shear-off		
GoFix® ZSS	$F_{ax,90,Rk}$ [kN]	$F_{ax,head,Rk}$ [kN]	$R_{k,la}$ [kN]				t [mm]	$R_{k,la}$ [kN]	
d1 x L			$\alpha_{AD} = 0°$ $\alpha_{ET} = 0°$	$\alpha_{AD} = 90°$ $\alpha_{ET} = 90°$	$\alpha_{AD} = 0°$ $\alpha_{ET} = 90°$	$\alpha_{AD} = 90°$ $\alpha_{ET} = 0°$		$\alpha_{ET} = 0°$	$\alpha_{ET} = 90°$
5,0 x 120	4,24	1,20	1,48	1,04	1,19	1,14	2	2,73	2,11

Measurement according to ETA-11/0425. Bulk density ρ_k= 350 kg/m³. All mechanical values given are to be considered depending on the assumptions made and represent design examples. All values are calculated minimum values and are subject to typesetting and printing errors.

a) The characteristic values of the load-bearing capacity R_k are not to be equated with the max. possible action (the max. force). Characteristic values of the load-bearing capacity R_k are to be reduced to design values R_d in relation to service class and class of load duration: $R_d = R_k \cdot k_{mod} / \gamma_M$. The design values of the load-bearing capacity Rd are to be compared with the design values of the actions E_d ($R_d \geq E_d$).

Beispiel:
Characteristic value for permanent action (dead load) G_k= 2,00 kN and variable action (e.g. snow load) Q_k= 3,00 kN. k_{mod}= 0,9. γ_M= 1,3.
⟶ Design value of the action E_d= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
Load-bearing capacity of the connection is considered to be verified if $R_d \geq E_d$. → min $R_k = R_d \cdot \gamma_M / k_{mod}$
In other words, the characteristic minimum value of the load-bearing capacity is calculated as: min $R_k = R_d \cdot \gamma_M / k_{mod}$ → R_k= 7,20 kN · 1,3/0,9= 10,40 kN ⟶ Comparison with table values.
Caution: These are planning tools. Projects must be dimensioned exclusively by authorised persons.

Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

ANKERNAGEL

with flat head

SIHGA® montagepack	Dimension Anchor nail	Material
Art. No.	PU	d1 x L	
60856	250	4,0 x 40	galvanised
60866	250	4,0 x 50	galvanised
60876	250	4,0 x 60	galvanised

To match:
Mass-X® Angle Q, Mass-X® Shear, Mass-X® Angle Q HB, Mass-X® Angle Q HH, Mass-X® Pull HB / HH

OTHER PRODUCTS

TAKE THE BEST

PICK

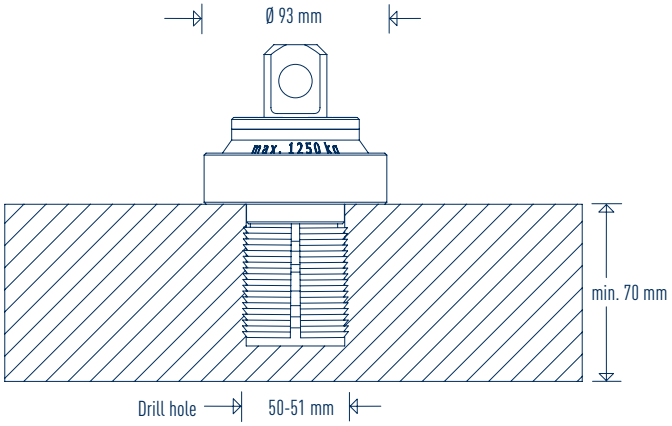
Load handling attachment for lifting cross-laminated timber, glulam and solid timber

Advantages

- Payload up to 1250 kg per lashing
- Versatile use: on the face side, panel side or cross-laminated side for beams of all types
- The visual quality of the surfaces is not damaged, no fastening screws required
- Easy and secure attachment, no alignment required
- Tested safety - accompanied by the TÜV

Instructions for use

The Pick wedges itself so solidly into the borehole that 1,250 kg of payload can be lifted per attachment point. The Pick Deck closes the borehole E.g. for sound insulation and fire protection requirements.



Pick when lifting CLT.

MADE IN AUSTRIA

SIHGA® Pick
montagepack

Art. No.	PU
29086	1

To match:
Pick System case
(Art. No.: 49222)

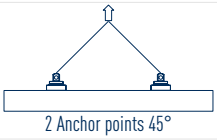
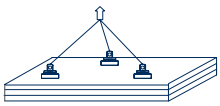
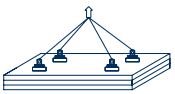
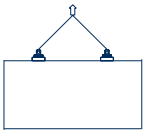
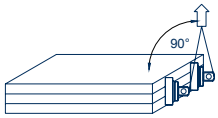
To match:
Pick HMB System case
(Art. No.: 49223)

To match:
Pick Deck
(Art. No.: 30439)

To match:
Pick HMB drill
(Art. No.: 30426)

PICK

Load table

Pick Load table				
	Bar dimension			
Bars	min. height	min. width	 2 Anchor points 0°*	 2 Anchor points 45°
	[mm]	[mm]	[kg]	[kg]
GLT	200	140	2500	1370
Solid structural timber, e.g. Transom wall	60	140	1800	1370
	Plate dimension			
Glued ceiling panels BSP/CLT	min.thickness	min. length and width	 3 Anchor points 45°	 4 Anchor points 45° (only with rocker)
	[mm]	[mm]	[kg]	[kg]
	90	1000	2.430	3240
	Plate dimension			
Glued wall panels BSP/CLT	min. thickness	min. length and width	 2 Anchor points 45°	 2 Anchor points 90°
	[mm]	[mm]	[kg]	[kg]
	90	1000	1160	1040

* Wood with a very high resin content, such as pine and larch or CLT walls that have been struck on the face side may only be lifted at an angle of ≥ 5° to the drill hole axis.
The minimum distance to the outer surface of the cover layer when mounting on the face of the CLT panel is min. 2 cm.
The minimum distance between the fastening points is at least 50 cm.
The minimum distance between the fastening points and the edge of the beam or panel is at least 25 cm

Caution: The axis distance of the mullions in transom walls must not exceed 62.5 cm.
The operator is responsible for the sufficient transmission of force from the head sill (frame) to the mullion. SIHGA® assumes no liability for this.

Notice

Detailed load tables for different timber dimensions and load cases can be found in the Pick operating instructions.

PICK MAX®

High-quality and durable load handling device

Advantages

- Payload up to 2400 kg per lashing
- Versatile use: on the face side, panel side or cross-laminated side for beams of all types
- The visual quality of the surfaces is not damaged, no fastening screws required
- Easy and secure attachment, no alignment required
- Tested safety - accompanied by the TÜV

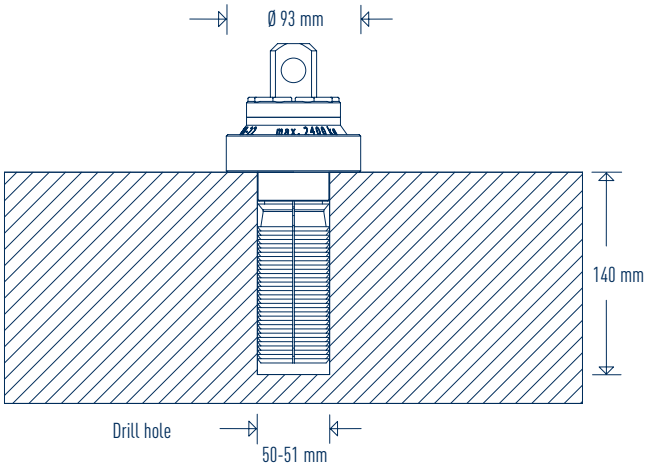
Instructions for use

The Pick Max® wedges itself so solidly into the borehole that 2,400 kg of payload can be lifted per attachment point.

MADE IN AUSTRIA

SIHGA® Pick Max®
montagepack

Art. No.	PU
29006	1



Pick Max® when lifting CLT.

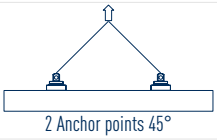
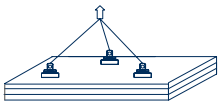
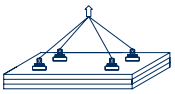
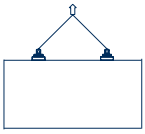
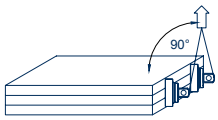
To match:
Pick Max® System case
(Art. No.: 49290)

To match:
Pick Max® HMB System case
(Art. No.: 49293)

To match:
Pick Max® HMB drill
(Art. No.: 30466)

PICK MAX®

Load table

Pick Max® Load table				
	Bar dimension			
Bars	min. height	min. width	 2 Anchor points 0°*	 2 Anchor points 45°
	[mm]	[mm]	[kg]	[kg]
Solid structural timber, e.g. Transom wall	160	160	4800	2696
	Plate dimension			
Glued ceiling panels BSP/CLT	min. thickness	min. length and width	 3 Anchor points 30°	 4 Anchor points 30° (only with rocker)
	[mm]	[mm]	[kg]	[kg]
	160	2000	4054	5405
	Plate dimension			
Glued wall panels BSP/CLT	min. thickness 5-layer	min. length x min. height	 2 Anchor points 30°	 2 Anchor points 90°
	[mm]	[mm]	[kg]	[kg]
	120	2000 x 1.000	2618	1765

* Wood with a very high resin content, such as pine and larch or CLT walls that have been struck on the face side may only be lifted at an angle of ≥ 5° to the drill hole axis.
The minimum distance to the outer surface of the cover layer when mounting on the face of the CLT panel is min. 2.5 cm.
The minimum distance between the fastening points is at least 100 cm.
The minimum distance between the fastening points and the edge of the beam or panel is at least 50 cm

Caution: The axis distance of the mullions in transom walls must not exceed 62.5 cm.
The operator is responsible for the sufficient transmission of force from the head sill (frame) to the mullion. SIHGA® assumes no liability for this.

Notice

Detailed load tables for different timber dimensions and load cases can be found in the Pick Max® operating instructions.

PICK PSA

Protecting life without much effort.
SIHGA® Pick PSA – Tool for fall protection

Advantages

- No time-consuming assembly and dismantling required
- If the wooden elements have already been lifted with the SIHGA® Pick, there are already sufficient drill holes available
- Enables safe movement without restricting freedom of movement
- Can be used in many different ways: Beam ceilings and CLT
- TÜV Austria-tested

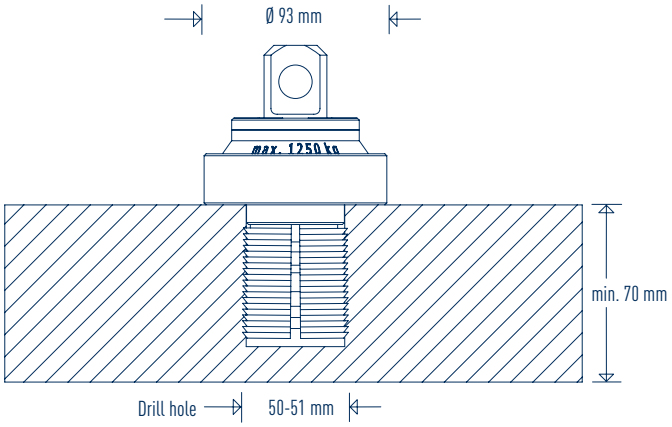
MADE IN AUSTRIA

Instructions for use

For lifting wooden components, use the SIHGA® Pick to create the best conditions for the Pick PSA.

SIHGA®

Art. No.	Designation	PU
49231	**System case Pick PSA** (2 x Pick PSA)	1
49232	**System case Pick PSA** (1 x Pick PSA)	1



Pick PSA application for cross-laminated timber.

PICK ENGEL® SYSTEM

Reduce the risk of injury at low working heights: Pick Engel® System

Advantages

- A reliable fall protection device that is ready for immediate use
- High load capacity - tested up to 100 kg body weight
- Simple, safe attachment - the person working is secured in just a few steps
- Especially for low heights from two metres
- Tested safety - accompanied by the TÜV

MADE IN AUSTRIA

Instructions for use

For your safety, use only the combination with Pick PSA.

SIHGA® montagepack		Höhensicherungsgerät Helixon-S	Strap Width	max. Body weight	Weight Helixson-S
Art. No.	PU	[m]	[mm]	[kg]	[kg]
43596	1	**3,5**	25	100	1,74

Table

h	h1	b
200	65	**155**
210	75	**179**
220	85	**203**
230	95	**226**
240	105	**250**
250	115	**274**
260	125	**298**
270	135	**322**
280	145	**346**
290	155	**369**
300	165	**393**

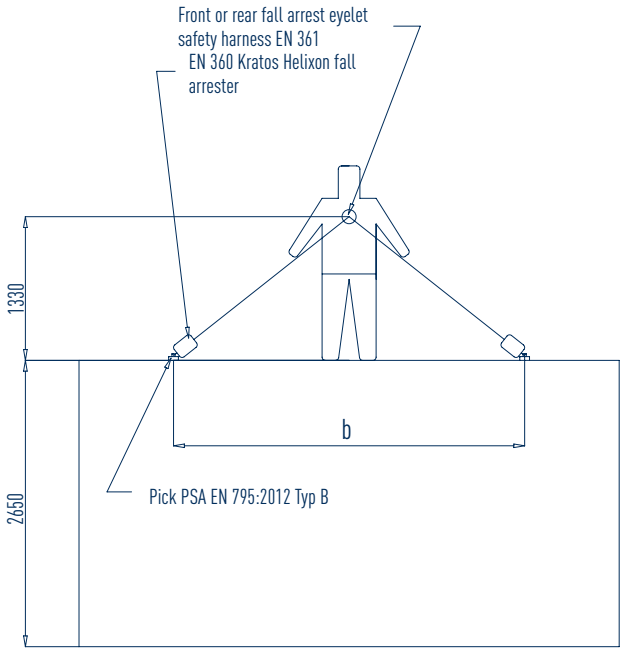
$h1 = h - 135cm$

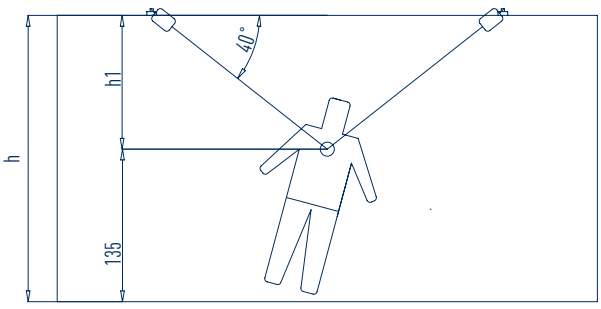
$b = \frac{2 \times h1}{\tan(40°)}$

Example:

$h1 = 265 - 135 = 130cm$

$b = \frac{2 \times 130}{\tan(40°)} = 310\ cm$





Pick PSA and **Helixon-S fall arrester.**

PICK OUT

Unhook safely - at all heights

Advantages

- Enables loads to be unhooked quickly and safely at dizzying heights
- Extension of the Pick load handling device
- Thanks to the semi-automated release process, the risk of injury to workers when removing the load handling attachment is significantly reduced
- Shortened removal time by suspending the load without manual assistance
- More safety for your employees
- Tested safety - Development was supported by the TÜV

MADE IN AUSTRIA

Instructions for use

In order to protect visible surfaces and built-in window elements on the Pick Out we recommend the use of guide cords, which are manually guided from below, thus avoiding uncontrolled swaying of the crane chains.

SIHGA®

Art. No.	Designation	PU
49270	**Pick Out System case** (without Pick)	1
49280	**Pick Out + Pick Combo System case** (Combination of 2 x Pick Out + 2 xPick)	1

Pick Out when lifting CLT walls.

POCKET TRAVERSE

Facilitates the lifting of large-format components

Advantages

- A truss in a small format - easily transportable and readily available
- By coupling two load handling attachments, double the load can be lifted
- The Pocket Traverse can also be used as a balancing rocker
- CE mark
- Load capacity of 2,400 kg; when using 2 x Pocket Traverses, elements can be lifted up to 5,000 kg

MADE IN AUSTRIA

SIHGA®
Pocket Traverse

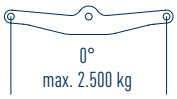
Art. No.	PU
50036	1

Instructions for use

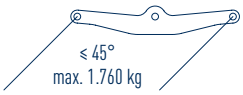
In combination with the SIHGA® Pick, the system offers maximum safety, enabling elements to be lifted with twice the weight as before.

Load cases:

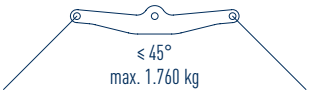
1

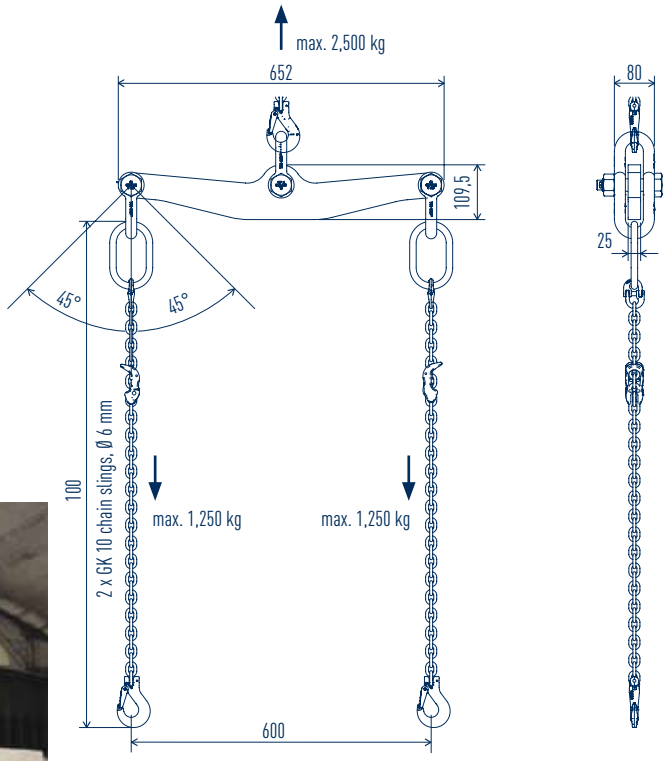


2



3





Pocket Traverse lifting in a hall.

WE ARE VISIONARY, PROFESSIONAL AND CUSTOMER CENTRIC

TAKE THE BEST

Wir sind visionär,
professionell und kundenzentriert

IDEFIX® IF/IFD

The ideal problem solver - even for end-grain connections

Advantages

- The heavy-duty connection with low space requirements and small axis and edge distances
- For horizontal connections, vertical connections, inclined connections, multiple connections on single and multiple rows
- IdeFix® IF can be retightened when installed
- The geometry prevents twisting of the timbers (e.g. in the case of columns)
- Can also be mounted as a spigot connection, is not visible when installed

Instructions for use

IdeFix® IFD for even higher tensile loads due to double the number of screws.
For manual drill holes, we recommend the IdeFix® IBG drill bell with drill.
Through holes for the threaded screws are always drilled from the IdeFix® side.

SIHGA®		Dimension		System screw		Secondary beam/column	
montagepack		IdeFix® IF/IFD		GoFix® HK	Number	Edge/axis distance	Height/Width
Art. No.	PU		Type	[mm]	Unit	[mm]	[mm]
28806	24	**IF**	**304**	5,0 x 40	8	50	100
28866	24	**IF**	**306**	5,0 x 60	8	60	120
28816	24	**IF**	**308**	5,0 x 80	8	70	140
28826	12	**IF**	**406**	6,0 x 60	8	60	120
28886	12	**IF**	**408**	6,0 x 80	8	80	160
28836	12	**IF**	**410**	6,0 x 100	8	90	180
28846	6	**IF**	**509**	8,0 x 90	8	80	160
28856	6	**IFD**	**508**	6,0 x 80	16	80 / 160	160
28876	6	**IFD**	**510**	6,0 x 100	16	100 / 200	200

ETA-14/0160

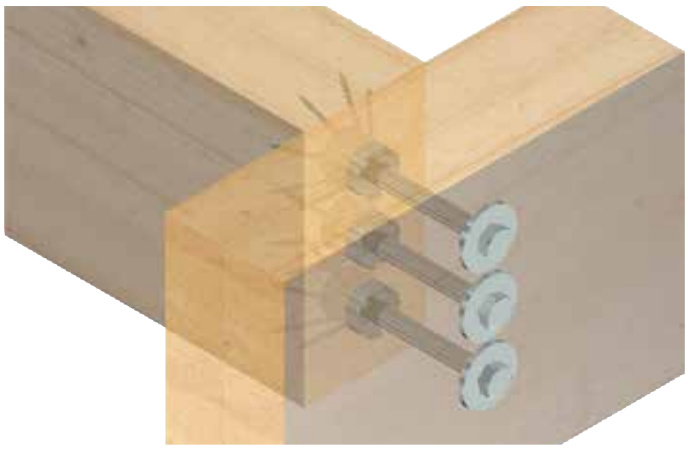
To match:
IdeFix® IF 30/50 HMB System case (Art. No.: 49311, 49411)

System case IdeFix® IF Bohrer 30/50 HMB (Art. No.: 49312, 49412)

To match:
IdeFix® IBG drill bell (Art. No.: 33666)

To match:
IdeFix® IBS 30/40/50 drilling template (Art. No.: 29906, 29916, 29926)

To match:
IdeFix® IB 30/40/50 HMB drill (Art. No.: 33716, 33726, 33736)



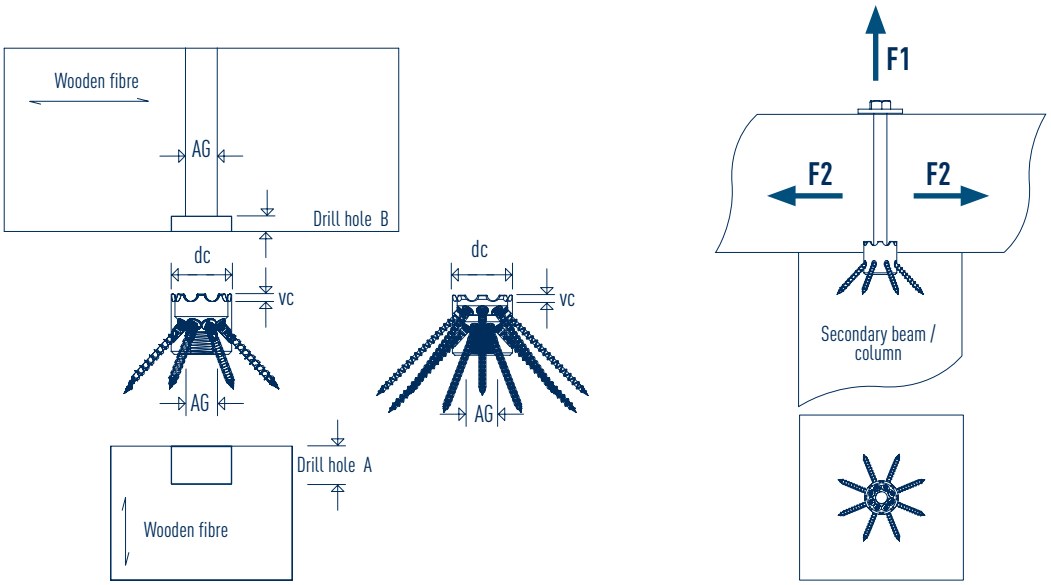
IdeFix® IF/IFD Multiple connections single row.

IDEFIX® IF/IFD

Static values

Dimension	Dimension	Connection	Tensile force connection		Transverse force connection*		Twist protection
IdeFix® IF/IFD	dc	Thread	Drill hole [mm]		Drill hole [mm]		vc
Type	[mm]	AG	A	B	A	B	[mm]
304/306 /308	30	M 12	27	0	20	7	3
406/408/410	40	M 16	35	0	25	10	5
509	50	M 20	45	0	30	15	5
508/510	50	M 20	45	0	35	10	5

*In the case of multiple connections, drill hole B is increased by twist protection vc

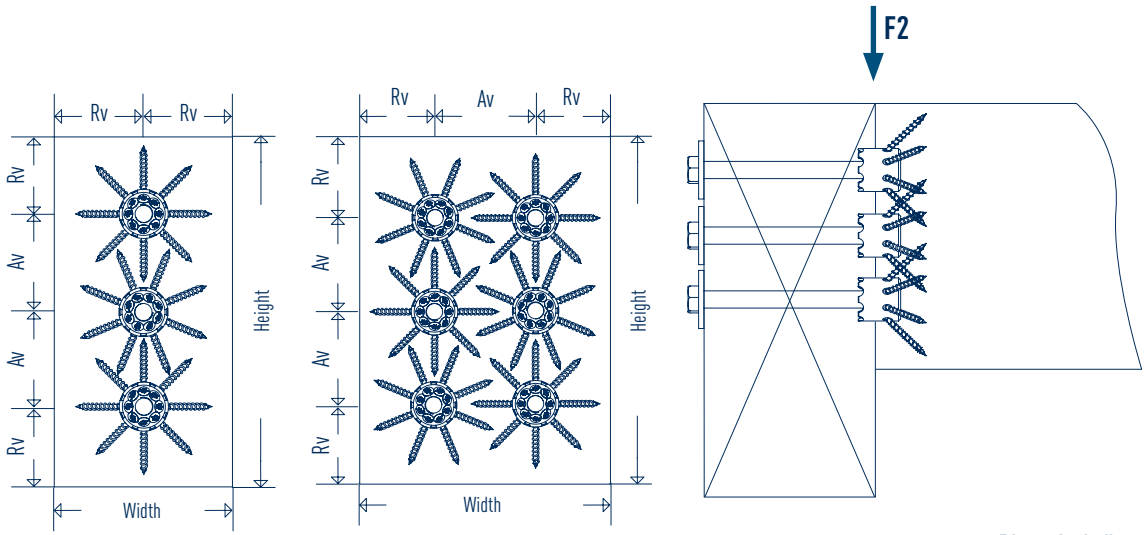


SIHGA®		Dimension		System screw		Secondary beam/ column		Characteristic values**	
montagepack		IdeFix® IF/IFD		GoFix® HK	Number	Edge/axis distance	Height/width	Tensile F1	Transverse F2
Art. No.	PU		Type	[mm]	Unit	[mm]	[mm]	[kN]	[kN]
28806	24	IF	304	5,0 x 40	8	50	100	17,0	10,1
28866	24	IF	306	5,0 x 60	8	60	120	25,6	12,3
28816	24	IF	308	5,0 x 80	8	70	140	32,4	13,8
28826	12	IF	406	6,0 x 60	8	60	120	29,0	13,0
28886	12	IF	408	6,0 x 80	8	80	160	37,9	18,8
28836	12	IF	410	6,0 x 100	8	90	180	45,6	20,5
28846	6	IF	509	8,0 x 90	8	80	160	56,0	20,5
28856	6	IFD	508	6,0 x 80	16	80 / 160	160	71,9	20,5
28876	6	IFD	510	6,0 x 100	16	100 / 200	200	87,3	30,7

** Characteristic values for measurement according to EC 5 and strength class C 24 (rk 350 kg/m³)
The values refer exclusively to the IdeFix connection to wood. Screw bolts and washers must be verified separately.

IDEFIX® IF/IFD

Static values



Edge and axis distances

IdeFix® IF

Type	Rv	Av
304	50	50
406	60	60
509	80	80

SIHGA®		Type	Secondary beam		Number	Characteristic values*	Secondary beam		Number	Characteristic values*
montagepack		IdeFix®	Width	Height	Connector	Transverse force F2	Width	Height	Connector	Transverse force F2
Art. No.	PU	IF	[mm]	[mm]	Unit	[kN]	[mm]	[mm]	Unit	[kN]
28806	24	**304**	100	150	2	20,20	150	150	4	40,40
28826	12	**406**	120	180	2	26,00	180	180	4	52,00
28846	6	**509**	160	240	2	41,00	240	240	4	82,00
28806	24	**304**	100	200	3	30,30	150	200	6	60,60
28826	12	**406**	120	240	3	39,00	180	240	6	78,00
28846	6	**509**	160	320	3	61,50	240	320	6	123,00
28806	24	**304**	100	250	4	40,40	150	250	8	80,80
28826	12	**406**	120	300	4	52,00	180	300	8	104,00
28846	6	**509**	160	400	4	82,00	240	400	8	164,00
28806	24	**304**	100	300	5	50,50	150	300	10	101,00
28826	12	**406**	120	360	5	65,00	180	360	10	130,00
28846	6	**509**	160	480	5	102,50	240	480	10	205,00

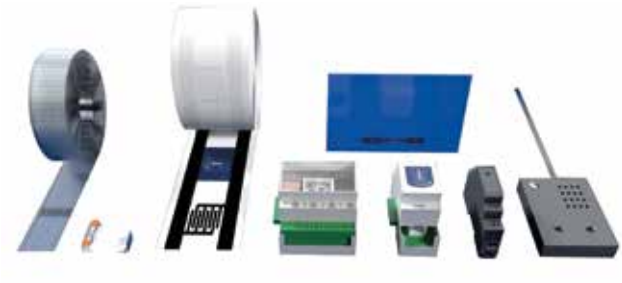
* Characteristic values for measurement according to EC 5 and strength class C 24 (rk 350 kg/m³)
The values refer exclusively to the IdeFix connection to wood. Screw bolts and washers must be verified separately

MONITORIX®

Digital wood protection - the early warning system for moisture ingress

Advantages

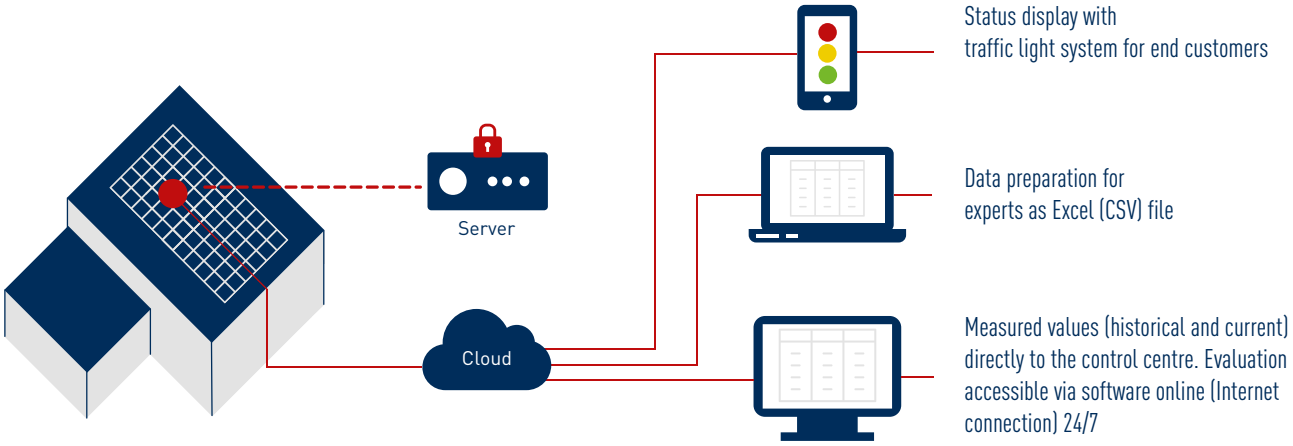
- Innovative early warning system for the ingress of moisture and water in wooden components
- The inconspicuous measuring system can be integrated both into new buildings and subsequently during renovation measures
- With Monitorix®, damage can be detected at an early stage, thus preventing cost-intensive renovation measures
- Flexible use in roofs, walls, façades and wet rooms



MADE IN AUSTRIA

How it works

In the desired area of the building, the sensors are installed by our technicians on tour. These send their measured values continuously to a terminal that is protected in a technical room. This is where the data is evaluated. The owner can immediately see the current status via a traffic light system - in the event of damage, the exact location and time of occurrence of the damage is reported. Detailed, even historical data can be accessed via a cloud server.



1 Permanent, area-wide data collection

2 Real-time data transmission to the server

3 Automatic data preparation

The **Monitorix®** early warning system is used on the „New TEAM 7 World" project in Ried im Innkreis.

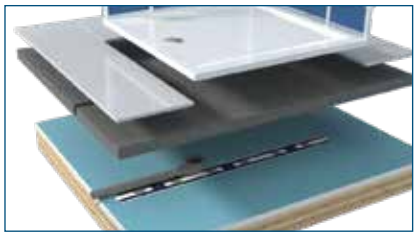
The first wooden traffic sign bridge is equipped with the **Monitorix®** moisture monitoring system.

MONITORIX®

The areas of application of Monitorix®

Monitorix® can be integrated into the intelligent planning of new buildings or retrofitted for renovations and special projects.




The way to your project

Simple processing - you send us your floor plan, we calculate your non-binding offer and our technicians on tour take care of the professional installation.

1. Send your layout

Send us the layout of your project, ideally as a DWG file, with your preferred installation location (flat roof, bathroom etc).

2. Intelligent planning

We will plan your project and determine the ideal way of installation.

3. Quote

You will receive an all-inclusive quote.

4. Assembly

Our ‚Technicians on Tour' will support you with professional installation and fitting.

5. Humidity monitoring

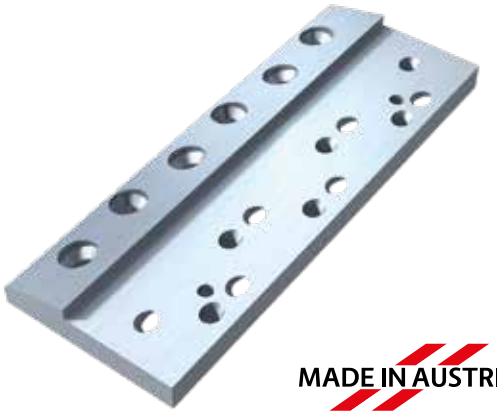
Your SIHGA Monitorix® is capable of real-time humidity monitoring.

WABAFIX® WF

Various wooden constructions simply fixed

Advantages

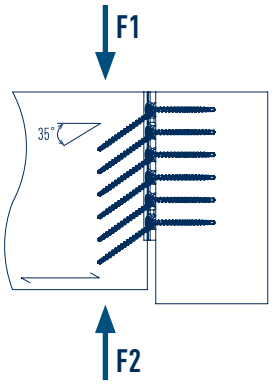
- Universal heavy-duty connection up to 94.72 kN per attachment point
- Load absorption without the risk of rubbing during assembly
- Can be detached again at a later date, a great advantage especially with modular construction methods
- Durable, dimensionally stable quality, rust-resistant

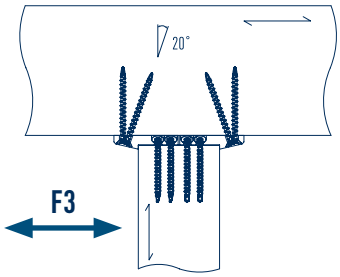


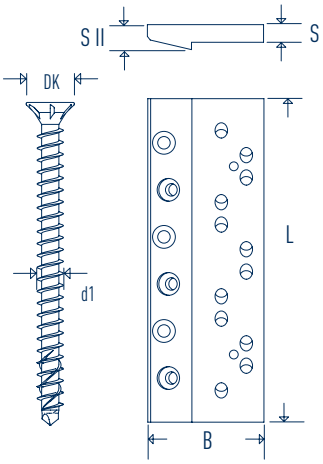
MADE IN AUSTRIA

Instructions for use

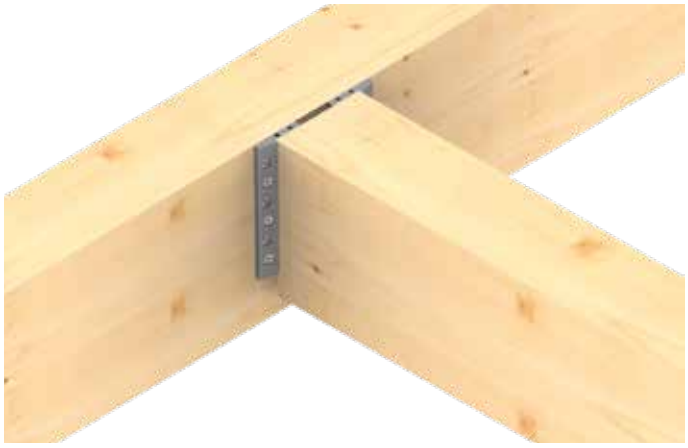
For mounting WabaFix® on concrete, we recommend the BeziFix® Anchor ZF.







SIHGA® objektpack®		WabaFix® WF	Secondary beam Width	Secondary beam Height	Screw GoFix® S+	Characteristic values* Load direction [kN]			Recommended values wood - concrete[2] Load direction [kN]		
Art. No.	PU	Type	[mm]	[mm]	d1 x L	F1	F2	F3	F1	F2	F3
43146	6[1]	**210**	100	250	8,0 x 95	54,72	32,28	32,28	18,96	18,96	18,96
43156	6[1]	**210**	100	270	8,0 x 125	71,04	35,52	35,52	18,96	18,96	18,96
43206	4[1]	**280**	100	320	8,0 x 95	72,96	43,04	43,04	25,28	25,28	25,28
43216	4[1]	**280**	100	340	8,0 x 125	94,72	47,36	47,36	25,28	25,28	25,28



WabaFix® WF wall-beam connection.

Dimension [mm]

WabaFix® WF

Type	L	B	S	S II
WF 210	210	79	12	17
WF 280	280	79	12	17

[1] corresponds to 3 or 2 connections

[2] recommended values for concrete min. C 20/25, without edge influence
Fastening by means of BeziFix® Anchor ZSS ZF 7.5 x 60 mm, screws, available separately

* Characteristic values for measurement according to EC 5, bulk density ρk = 380 kg/m³

HOBAFIX® HFM

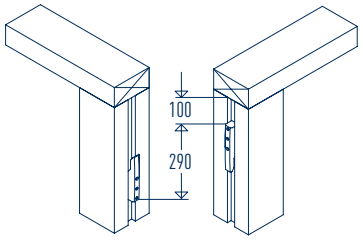
One connector for all applications in the assembly of wall elements

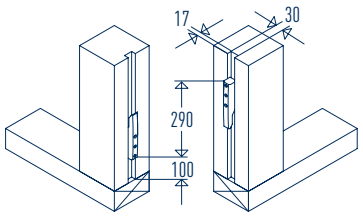
Advantages

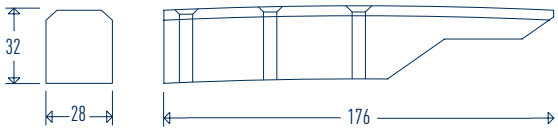
- Mounting connector for hanging - saves a lot of working time
- Mounting tolerance of 14 mm
- Is fixed to the wall element in a mounting groove 30 mm wide and 17 mm deep
- Elastic pretensioning, made of polyamide

Instructions for use

We recommend two pairs of HobaFix® HFM per wall joint.



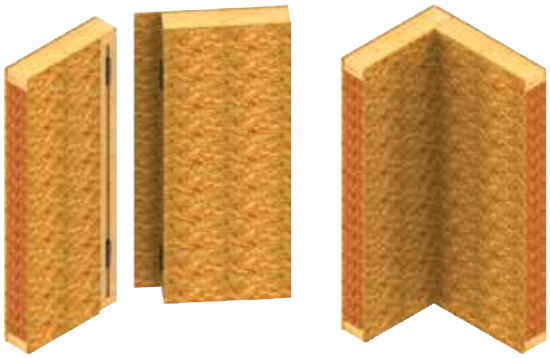




SIHGA® montagepack		Dimension HobaFix® HFM			Milling Depth	Milling Width	System screws GoFix® SK
Art. No.	PU	L	B	H	[mm]	[mm]	d1 x L
30306	12*	176	28	32	17	30	6,0 x 70

* Corresponds to 6 connections

HobaFix® HFM Example wall connection.



HobaFix® HFM Example corner joints.

MASS-X® CALM

The perfect solution for sound reduction

Advantages

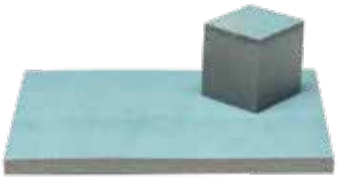
- Sustainable, natural materials: cork and natural rubber
- High load capacity (0.1 N/mm² - 3 N/mm²)
- Not visible when laid
- Easy to process
- Water and gas-permeable to a limited extent depending on the structure

Material

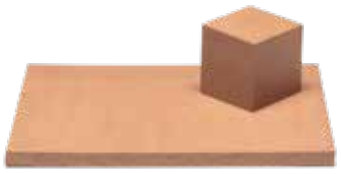
The Mass-X® Calm is a compound of the components cork and natural rubber. This product is suitable for vibration damping applications where very high insulation values are required and used as non-visible insulators (pads/strips) with low resonance frequency, as well as a medium-low load.

Sound reduction

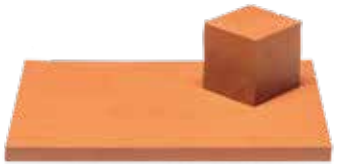
The Mass-X® Calm protective cork is able to achieve a sound reduction of up to 40 dB



Mass-X® Calm 1



Mass-X® Calm 2



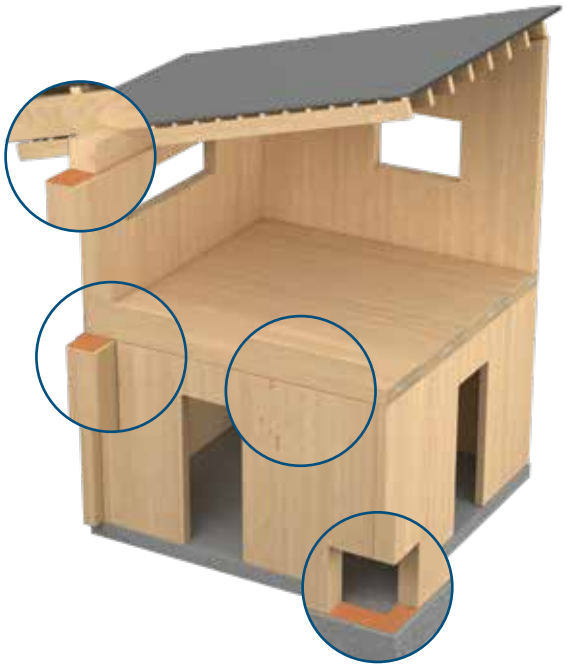
Mass-X® Calm 3

SIHGA® montagepack		Designation	Dimension Width x length	Material thickness
Art. No.	PU	Typ	[mm]	[mm]
60886	15	Mass-X® Calm 1	100 x 1100	6
60896	15	Mass-X® Calm 2	100 x 1100	6
60906	15	Mass-X® Calm 3	100 x 1100	6

Technical data

	Mass-X® Calm 1	Mass-X® Calm 2	Mass-X® Calm 3
	Load ranges [N/mm²]		
Temperature range [°C]	10/+100	-10/+100	-10/+100
Density [kg/m³]	700	1100	1125
Shore hardness [shore A]	35 - 50	45 - 60	60 - 80
Breaking strain [%]	> 200	> 300	> 100
Tensile strength [N/mm²]	> 2,0	> 5,0	> 6,0
Compression 23°C / 70 h [%]	< 15	< 15	< 15
Static permanent load [N/mm²]	0,1 - 0,39	0,4 - 1,4	1,5 - 3,1

Mass-X® Calm for separation and sound insulation of foundation and threshold timber



MASS-X® CALM

		6 mm			12 mm		
	Static permanent load	Natural frequency	Deflection	Modulus of elasticity at 10 Hz	Natural frequency	Deflection	Modulus of elasticity at 10 Hz
	[N/mm²]	[Hz]	[mm]	[N/mm²]	[Hz]	[mm]	[N/mm²]
Mass-X® Calm 1	0,1	**44**	0,2	4,0	**27**	0,5	3,7
	0,2	**33**	0,5	4,5	**19**	1,3	4,0
	0,3	**27**	0,8	5,6	**17**	1,9	5,1
	0,4	**27**	1,1	6,9	**17**	2,6	6,5
Mass-X® Calm 2	0,5	**50**	0,2	11,5	**31**	0,4	10,5
	0,8	**38**	0,4	15,75	**22**	1,0	14,0
	1,1	**31**	0,7	19,5	**20**	1,6	18,0
	1,5	**31**	0,9	28,5	**20**	2,2	27,0
Mass-X® Calm 3	1,6	**58**	0,3	18,5	**36**	0,6	17,0
	2,4	**44**	0,6	24,5	**25**	1,3	22,0
	3,2	**35**	1,0	30,5	**23**	2,0	28,0
	4,0	**35**	1,5	43,0	**23**	2,7	41,0

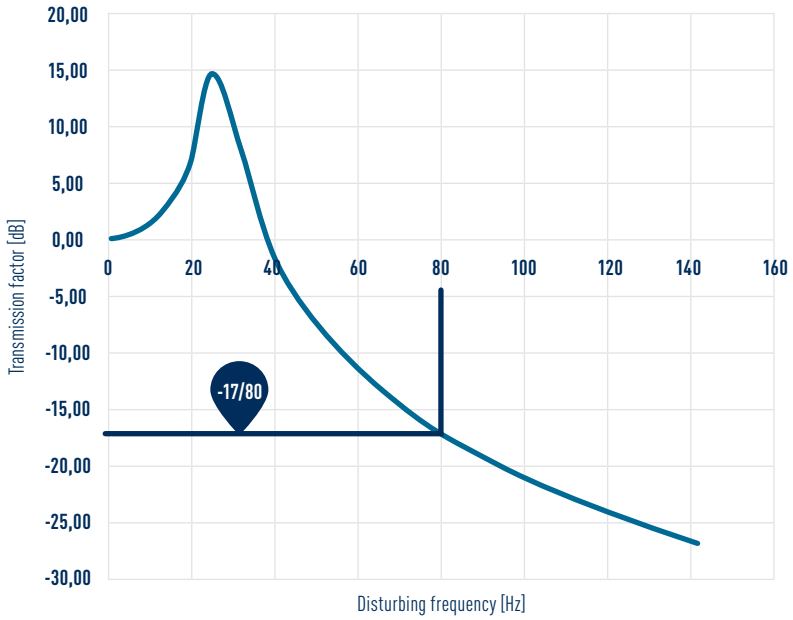
Linear interpolation is permitted for intermediate values.

In the next step, we take a closer look at the noise frequency. To do this, we look at the following graphs and can see that the sound reduction in the low frequency range has worsened. Low frequencies (bass) can only be isolated by mass. The frequencies to be isolated for building acoustics start in the 80 Hz range, so this is negligible. If no interference frequencies are specified, 80 Hz can be assumed.

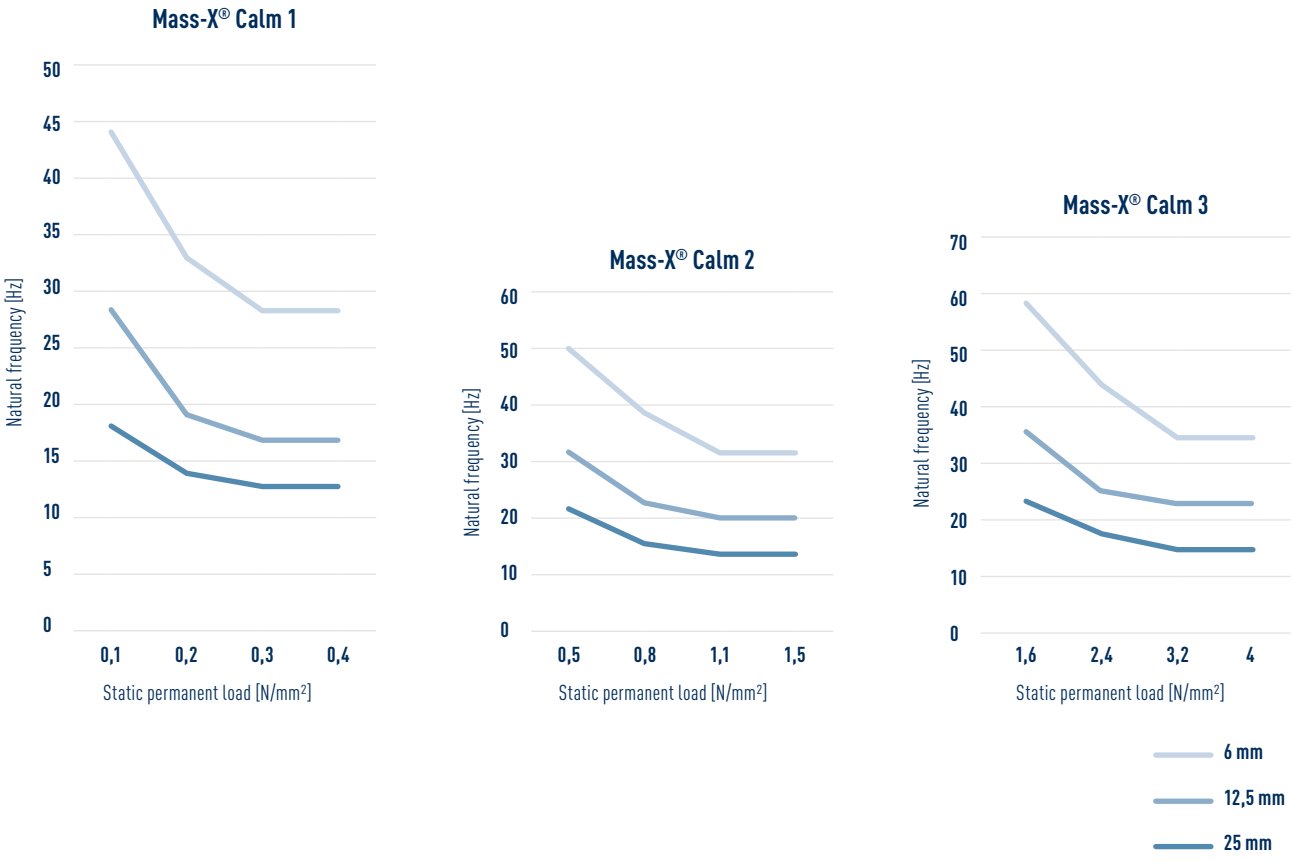
The sound reduction in dB can be determined in two ways:

Way 1:

Starting from an interference frequency of 80 Hz, a sound reduction of approx. 17 dB can be read from the following graph. These values are achieved under ideal conditions (optimum room temperature, room humidity, etc.).



MASS-X® CALM



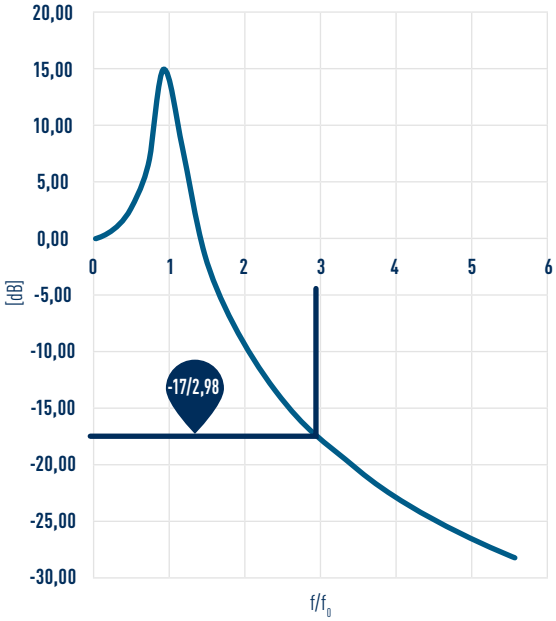
Way 2:

A sound attenuation factor can be calculated from the previously determined natural frequency (27 Hz) and the specified interference frequency (80 Hz).

Sound insulation factor $f/f_0 < \sqrt{2}$: Disturbing frequency / Natural frequency → 80 Hz / 27 Hz ≈ 2,96 < $\sqrt{2}$

*An essential criterion for efficient elastic mounting is the natural frequency f_0 of the vibration system. The lowest frequency f to be damped must be assumed and a tuning ratio f/f_0 of at least $\sqrt{2}$ (1,41 must be maintained. Only from this ratio onwards does structure-borne sound insulation increase with increasing excitation frequency.

Using the previously calculated factor, the sound reduction can then be read off. Under ideal conditions, this is 17 dB.



***Source:** Deckenkonstruktion für den mehrgeschoßigen Holzbau – Schall- and Brandschutz | Detailkatalog | Band 20 der HFA-Schriftreihe, 5th improved edition, September 2016. Page 25 / 4.2.2 Selection of the appropriate construction bearing / Para. 1

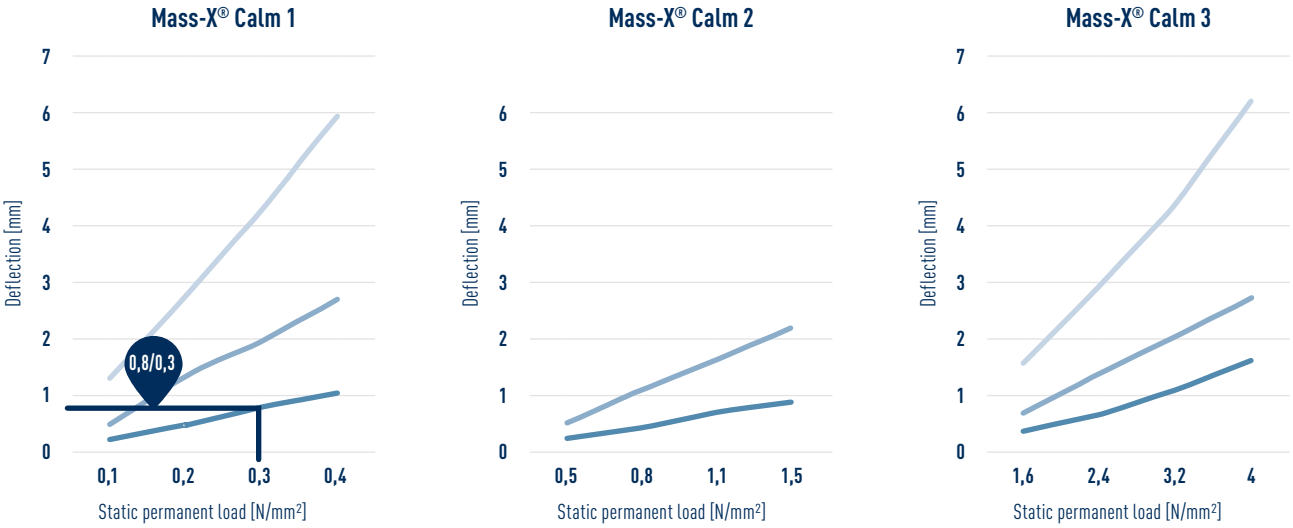
MASS-X® CALM

Last step

In the last step, the deflection of the Mass-X® Calm is determined. This step is especially important for the designers of the building. The deflection is also determined by the permanent load and there is a separate graph for each Mass-X® Calm. For the example calculation with Mass-X® Calm 1 and 0.3 N/mm², the following graph shows a deflection of 0.8 mm.

The graphs shown here will of course adjust according to the previously determined factors

For Mass-X® Calm 2 and Mass-X® Calm 3, the following graphs apply to the deflection:



Caution: Check the assumptions made. The specified values, type and number of connecting materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

6 mm
12,5 mm
25 mm

		6 mm			12 mm		
	Static permanent load	**Natural frequency**	**Deflection**	**Modulus of elasticity at 10 Hz**	**Natural frequency**	**Deflection**	**Modulus of elasticity at 10 Hz**
	[N/mm²]	[Hz]	[mm]	[N/mm²]	[Hz]	[mm]	[N/mm²]
Mass-X® Calm 1	0,1	**44**	0,2	4,0	**27**	0,5	3,7
	0,2	**33**	0,5	4,5	**19**	1,3	4,0
	0,3	**27**	0,8	5,6	**17**	1,9	5,1
	0,4	**27**	1,1	6,9	**17**	2,6	6,5
Mass-X® Calm 2	0,5	**50**	0,2	11,5	**31**	0,4	10,5
	0,8	**38**	0,4	15,75	**22**	1,0	14,0
	1,1	**31**	0,7	19,5	**20**	1,6	18,0
	1,5	**31**	0,9	28,5	**20**	2,2	27,0
Mass-X® Calm 3	1,6	**58**	0,3	18,5	**36**	0,6	17,0
	2,4	**44**	0,6	24,5	**25**	1,3	22,0
	3,2	**35**	1,0	30,5	**23**	2,0	28,0
	4,0	**35**	1,5	43,0	**23**	2,7	41,0

MASS-X® DECOUPLING PROFILE

For sound insulation and material separation

Advantages

- Flexible in use
- Can be cut to size individually (roll material)
- Ageing resistant
- UV-stable, ozone-resistant
- Free from conflict materials

Properties

- Density approx. 1.4 g/cm³
- Operating temperature -30 °C to +90 °C
- Shore hardness 48 = 0.500 N/mm² = 0.05 kN/m²

Instructions for use

Cut the Mass-X® Decoupling profile to the desired length and place it in the desired position. Then mechanically fasten approx. every 40 - 60 cm, e.g. with a hammer tacker.

SIHGA®		Dimension		Material thickness	Material
montagepack		Width	Length		
Art. No.	PU	[mm]	[m]	[mm]	
60916	1	95	20	5	EPDM

Material properties

Property	Measuring method	Unit	Value
Hardness	DIN ISO 7619-1	Shore A	48
Density	DIN 53479	g/cm³	1,23
Tear resistance	DIN 53504	MPa	8,5
Elongation at break	DIN 53504	%	510
Compression set	DIN ISO 815-1	%	≤ 40
Temperature resistance		°C	-30/100°C

Caution: Check the assumptions made. The specified values, type and number of connection materials represent a pre-dimensioning. Projects must be dimensioned exclusively by authorised persons in accordance with the State Building Code. For definitive proof of stability, please contact a structural engineer qualified according to the State Building Code (LBauO).

Mass-X® Decoupling profile for material separation and sound insulation

Mass-X® Decoupling profile under beams for sound insulation.

MASS-X® ANGLE DECOUPLING

Perfect complement to Mass-X® Angle Q HH/HB and Mass-X® Angle Z

The underlays are made from a combination of the components cork and natural rubber.
The product is suitable for vibration damping applications where very high insulation values are required. The Mass-X® Angle decouplers are used as non-visible isolators (pads/strips) with low resonance frequency, as well as a medium-low load.

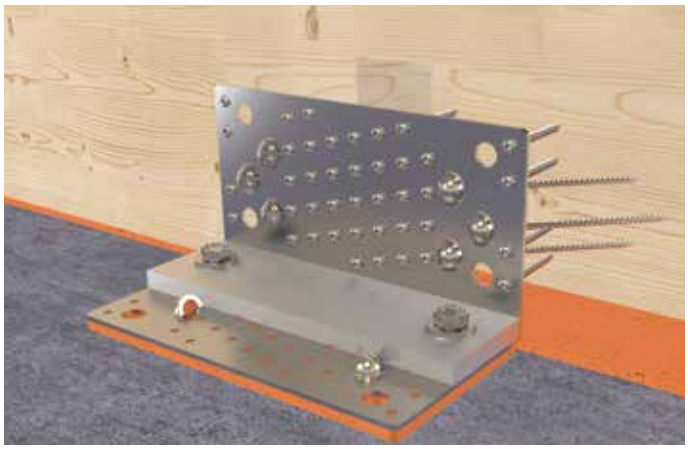
Advantages

- Easy assembly thanks to underlays
- Sustainable material
- Not visible
- High load capacity
- REACH-compliant

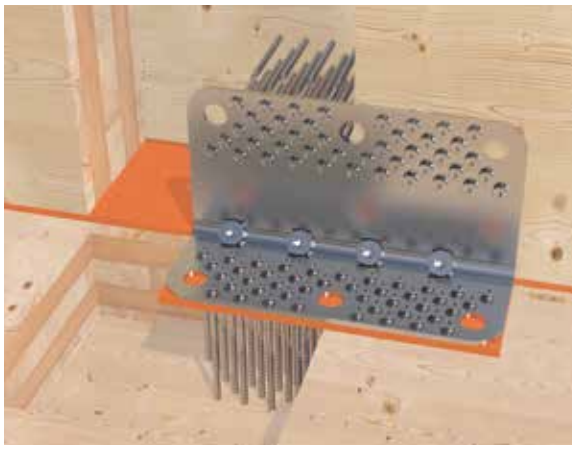
Instructions for use

The Mass-X® Angle decouplers have cut-outs for the concrete screws for use in concrete. An increase of the separation layer to 12 mm is possible by double layering. When used in wood, the material can be screwed through. The application must be determined in advance by a structural engineer. No statement can be made about sound reduction, as this depends on the design.

SIHGA® montagepack		Dimension	Suitable for	
Art. No.	PU	[mm]	Art-No.	Designation
60936	5	230 x 70 x 6	60746	Mass-X® Angle Q HH
60946	5	230 x 80 x 6	60736	Mass-X® Angle Z
60956	5	230 x 100 x 6	60756	Mass-X® Angle Q HB
60726	5	230 x 120 x 6	60706	Mass-X® Angle Q



Mass-X® Angle Q for fixing a wall to the concrete foundation.



Mass-X® Angle Z for fixing a wall to the wooden floor of the upper storey.

THE **WEBSITE WITH NEW STRENGTHS**

For partners and builders

Welcome to the world of SIHGA® fastening technology!
On our website you will find all the information you need, along with convenient enquiry, ordering and many download options.

SIHGA® Online-Shop
SIHGA Jointplan®
SIHGA Terrassenplaner®
Online measurements
Product information
Approvals
News
Texts for invitation to tender

Product and assembly videos
Anchor dimensioning software
Terrace planning software
Recommendations
Detailed technical information
Design recommendations
Assembly instructions
SIHGA® reference projects

#WEBSITE
#SIHGA.COM

SIHGA® PROVIDES INNOVATIVE **CONSTRUCTION TECHNOLOGY** AND **SUPPORT** FOR THE **FUTURE**

Strong products – made in Austria

SIHGA® is a family business based in Gmunden, Upper Austria.
Fasteners made by SIHGA® are now the preferred choice of many commercial and increasingly also private users in German-speaking Europe.

Strong for our customers

SIHGA® sees every customer as a partner. We supply the trade, the specialist trade and the industry. The SIHGA® timber engineers prepare design proposals, advise on implementation, train users on site and organise specialist seminars for special areas in timber construction. Our innovations are exclusively packaged in customised system packaging. These always include the assembly instructions and high-quality accessories.

Strong innovations

Our products are developed in Austria, carefully packaged and tested many times.

SIHGA® is the inventor of Alu-TeFix®, Betsi®, BeziFee®, BeziFix®, BohrFix®, DielenFix®, FassadenClip®, FugiFix®, GleitFix®, GoFix®, Herakulix®, HobaFix®, Hobet®, Hozibo®, IdeFix®, JustiFix®, Klebsan®, KompeFix®, L-GoFix®, Monitorix®, Pfalu®, Pfalu Aquastop®, Pick, Pick PSA, Pick Engel®, Pick Out, ProziFix®, Rest-X®, RomboFix®, SIHGAFIX®, Stabilix, Stegsan®, SystemFix®, TefaBind®, TefaFix®, TefaFlex®, TeFix®, TerrassenFix®, WabaFix® and ZaFix®.

KLIMANEUTRALES UNTERNEHMEN
certified by Fokus Zukunft
Klimaneutral durch Kompensation mit Klimaschutzzertifikaten

Leitbetrieb Österreich
Leitbetrieb Deutschland

#TAKETHEBEST
#TAKESIHGA

SIHGA® – STRONG AND SAFE TOGETHER

We focus on service - use the all-inclusive services to your benefit.

SIHGA® Academy

- Your advantage through knowledge:
  take advantage of the free seminars and workshops for qualified further training.

  New: Also available to watch on f **YouTube**!

Become a development partner

- Use bundled knowledge from theory and practice
- Test new products even in the beta phase

Technology on tour

- Book our **SIHGA® Application engineers** completely free of charge - we will be happy to support your team with advice and action directly on the construction site.

Technical support

- The **„Technical Support“** department is always available to help you with questions and for tips on tricky applications.
  Simply e-mail **support@sihga.com** or call **+43 7612 74370 0**.
  We're happy to help!

Dimensioning service

- We work with you to find the safest and simplest solution. Simply e-mail **bemessung@sihga.com**!

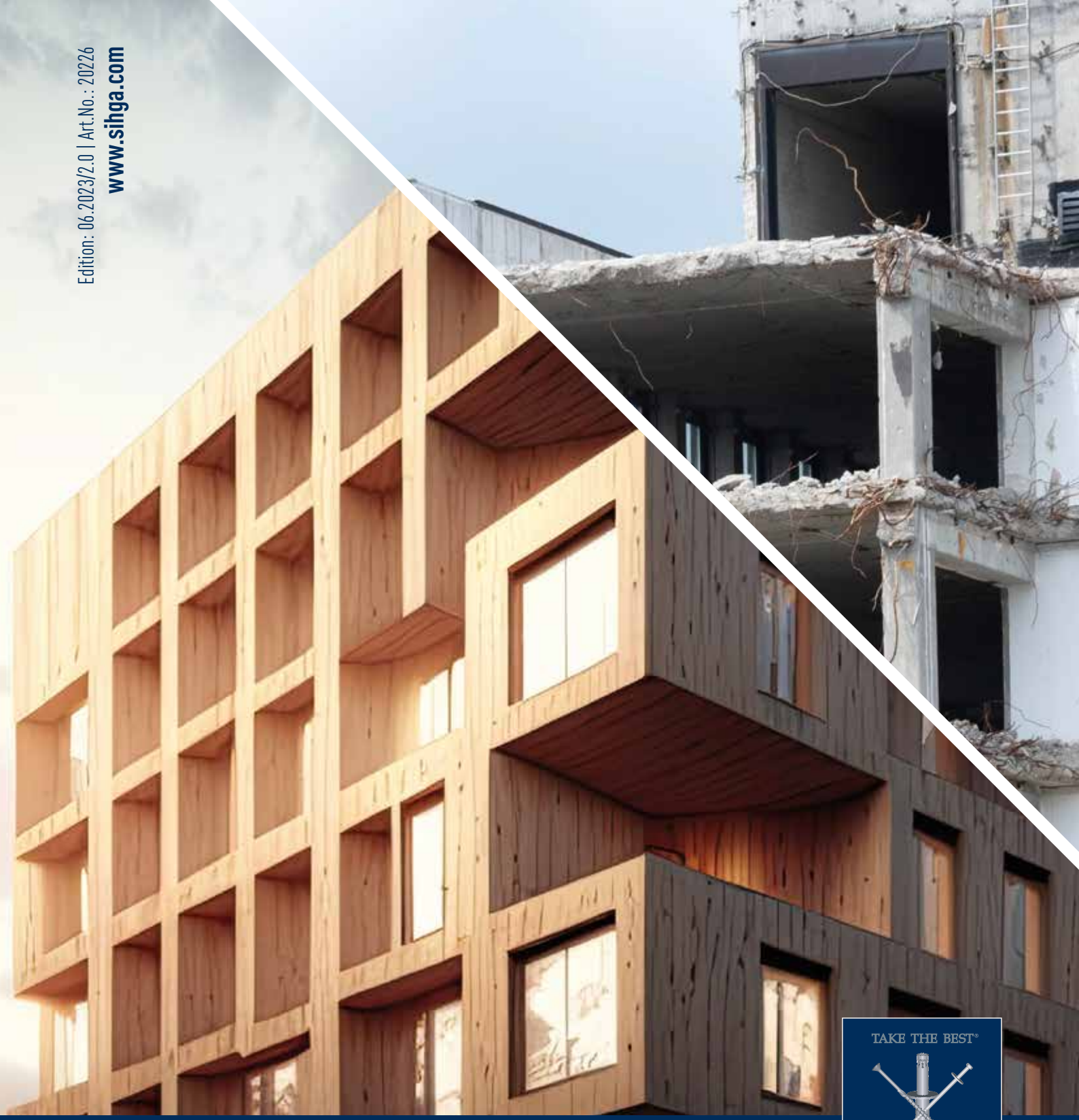
Pick check

- We think of security in completely new dimensions: have your SIHGA® Pick tested by an official institution with ultrasound.

BIM data

- Use 3D data from all SIHGA® products for your straightforward planning.

Edition: 06.2023/2.0 | Art.No.: 20226
www.sihga.com



TAKE THE BEST

Leitbetrieb Österreich Leitbetrieb Deutschland

TAKE THE BEST®
SIHGA®

SIHGA® GmbH | Austria
Gewerbepark Kleinreith 4 | 4694 Ohlsdorf bei Gmunden | Austria | Tel +43 7612 74370 0 | info@sihga.com
Opening hours: Mon - Thu 07:30 to 12:00 and 12:30 to 17:00 Uhr | FR 07:30 to 12:00 and 12:30 to 15:00 Uhr