PRODUCT DATA SHEET

SHEARING ANGLE

PRODUCT DESCRIPTION

The shearing angle is an angle bracket for **absorbing shearing forces** that was specifically developed for modern timber construction. Various holes for anchoring in **wood** and **concrete** mean that our shearing angle is used in **timber frame and solid timber construction**.

Shearing angle

Shearing angle pressure plate

ADVANTAGES

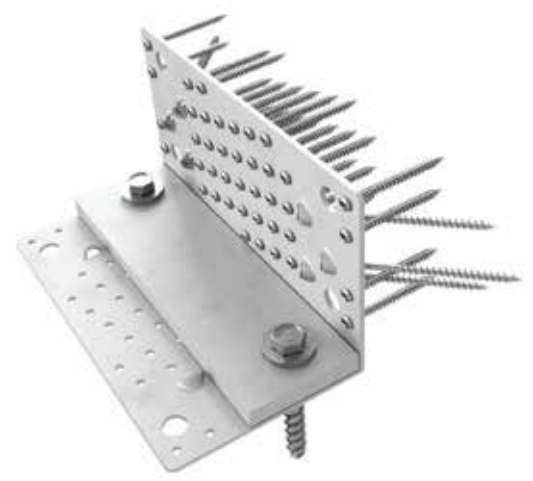
- Many different areas of use
- For installation in wood and concrete
- Very high shear load-bearing capacity thanks to a innovative fixing concept
- Fewer connectors required
- In combination with the pressure plate, tensile forces can also be absorbed when fixing in concret.

CERTIFICATION

ETA CE
Europ. Techn. Bewertung
European Technical Assessment
ETA-19/0020

IMAGES OF APPLICATIONS

Shear bracket to secure a wall to the concrete foundation.



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INSTRUCTIONS FOR USE

6 slanted screw connection holes and 41 holes, which are optionally intended for angle-bracket screws or Anchor nails, are included per side for anchoring in wood. Depending on the application, we have provided two additional partial utilisations of the fixing holes which are also available as static-type calculations. Anchoring in concrete is carried out using the holes (ø 14 mm) provided for this purpose with our rock concrete screw ø 12,5 mm or bolt anchors ø 12 mm.

MATERIAL

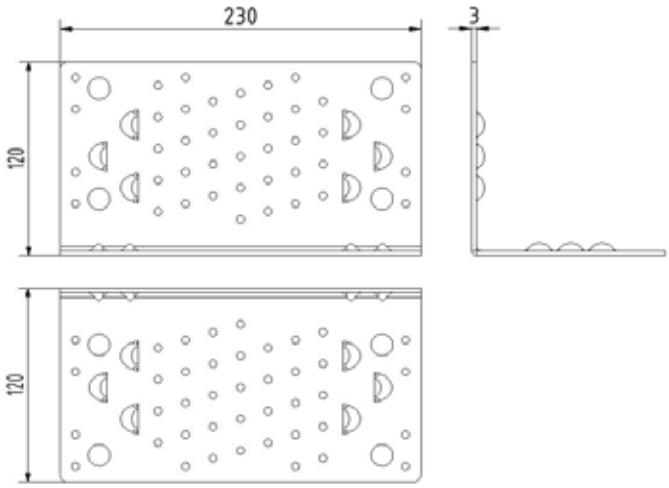
· S250 construction steel

PRODUCT TABLE

Art. no.	Product name	Dimensions [mm]	Material	PU
954112	Shearing angle	230 x 120 x 3	S250 construction steel	1
954111	Shearing angle pressure plate	230 x 68 x 12	S250 construction steel	1

DRAWINGS

· Shearing angle



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PRODUCT DATA SHEET SHEARING ANGLE

STATIC FULL UTILISATION VALUES

Load direction F2/F3						
Connection Timber-Timber						
Vertical leg connection	Anchor nails Ø 4 x 40 n=41	Anchor nails Ø 4 x 50 n=41	Anchor nails Ø 4 x 60 n=41	Angle-bracket screw Ø 5 x 40 n=41	Angle-bracket screw Ø 5 x 50 n=41	Angle-bracket screw Ø 5 x 60 n=41
	Paneltwistec CH Ø 5 x 120 n=6					
Horizontal leg connection	Anchor nails Ø 4 x 40 n=41	Anchor nails Ø 4 x 50 n=41	Anchor nails Ø 4 x 60 n=41	Angle-bracket screw Ø 5 x 40 n=41	Angle-bracket screw Ø 5 x 50 n=41	Angle-bracket screw Ø 5 x 60 n=41
	Paneltwistec CH Ø 5 x 120 n=6					
Char. shear carrying capacity [kN]	30,5	36	37,2	41,9	44,6	47,6
Char. shear carrying capacity [kN] (Use of Sonotec SK04)	22,6	26,6	27,5	32,7	34,8	37,1

Load direction F2/F3												
Connection Timber-Concrete												
Vertical leg connection	Ankernägel Ø 4 x 40 n=41	Anchor nails Ø 4 x 40 n=41	Anchor nails Ø 4 x 50 n=41	Anchor nails Ø 4 x 50 n=41	Anchor nails Ø 4 x 60 n=41	Anchor nails Ø 4 x 60 n=41	Angle-bracket screw Ø 5 x 40 n=41	Angle-bracket screw Ø 5 x 40 n=41	Angle-bracket screw Ø 5 x 50 n=41	Angle-bracket screw Ø 5 x 50 n=41	Angle-bracket screw Ø 5 x 60 n=41	Angle-bracket screw Ø 5 x 60 n=41
	Paneltwistec CH Ø 5 x 120 n=6											
Horizontal leg connection	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2
	incl. pressure plate 230 x 70											
Char. shear carrying capacity [kN]	30,5	23,4	36,0	23,4	37,2	23,4	41,9	23,4	44,6	23,4	47,6	23,4

The load-bearing capacities were determined based on ETA-19/0020 Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. Gross density.
The minimum distances between the connectors and the edges according to EC5 must be complied with.

Please note: Verify the assumptions made. The stated values, and type and number of joining devices are based on preliminary measurements. Projects are to be dimensioned exclusively by authorised persons in accordance with the State Building Code.
As per LBauO, please contact a qualified structural engineer for a paid proof of stability. We will be happy to refer you to someone.

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PRODUCT DATA SHEET SHEARING ANGLE

STATIC FULL UTILISATION VALUES 1

Load direction F2/F3						
Connection Timber-Timber						
Vertical leg connection	Anchor nails Ø 4 x 40 n=34	Anchor nails Ø 4 x 50 n=34	Anchor nails Ø 4 x 60 n=34	Angle-bracket screw Ø 5 x 40 n=34	Angle-bracket screw Ø 5 x 50 n=34	Angle-bracket screw Ø 5 x 60 n=34
	Paneltwistec CH Ø 5 x 120 n=6					
Horizontal leg connection	Anchor nails Ø 4 x 40 n=34	Anchor nails Ø 4 x 50 n=34	Anchor nails Ø 4 x 60 n=34	Angle-bracket screw Ø 5 x 40 n=34	Angle-bracket screw Ø 5 x 50 n=34	Angle-bracket screw Ø 5 x 60 n=34
	Paneltwistec CH Ø 5 x 120 n=6					
Char. shear carrying capacity [kN]	23,9	28,1	29,1	32,7	34,9	37,2
Char. shear carrying capacity [kN] (Use of Sonotec SK04)	17,7	20,8	21,5	25,5	27,2	29

Load direction F2/F3												
Connection Timber-Concrete												
Vertical leg connection	Anchor nails Ø 4 x 40 n=34	Anchor nails Ø 4 x 40 n=34	Anchor nails Ø 4 x 50 n=34	Anchor nails Ø 4 x 50 n=34	Anchor nails Ø 4 x 60 n=34	Anchor nails Ø 4 x 60 n=34	Angle-bracket screw Ø 5 x 40 n=34	Angle-bracket screw Ø 5 x 40 n=34	Angle-bracket screw Ø 5 x 50 n=34	Angle-bracket screw Ø 5 x 50 n=34	Angle-bracket screw Ø 5 x 60 n=34	Angle-bracket screw Ø 5 x 60 n=34
	Paneltwistec CH Ø 5 x 120 n=6											
Horizontal leg connection	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws e Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2
	incl. pressure plate 230 x 70											
Char. shear carrying capacity [kN]	23,9	23,4	28,1	23,4	29,1	23,4	32,7	23,4	34,9	23,4	37,2	23,4

The load-bearing capacities were determined based on ETA-19/0020 Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. Gross density.
The minimum distances between the connectors and the edges according to EC5 must be complied with.

Please note: Verify the assumptions made. The stated values, and type and number of joining devices are based on preliminary measurements. Projects are to be dimensioned exclusively by authorised persons in accordance with the State Building Code.
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PRODUCT DATA SHEET SHEARING ANGLE

STATIC FULL UTILISATION VALUES 2

Load direction F2/F3						
Connection Timber-Timbe						
Vertical leg connection	Anchor nails Ø 4 x 40 n=29	Anchor nails Ø 4 x 50 n=29	Anchor nails Ø 4 x 60 n=29	Angle-bracket screw Ø 5 x 40 n=29	Angle-bracket screw Ø 5 x 50 n=29	Angle-bracket screw Ø 5 x 60 n=29
	Paneltwistec CH Ø 5 x 120 n=4					
Horizontal leg connection	Anchor nails Ø 4 x 40 n=29	Anchor nails Ø 4 x 50 n=29	Anchor nails Ø 4 x 60 n=29	Angle-bracket screw Ø 5 x 40 n=29	Angle-bracket screw Ø 5 x 50 n=29	Angle-bracket screw Ø 5 x 60 n=29
	Paneltwistec CH Ø 5 x 120 n=4					
Char. shear carrying capacity [kN]	19,3	22,8	23,6	26,5	28,3	30,1
Char. shear carrying capacity [kN] (Use of Sonotec SK04)	14,3	16,9	17,5	20,7	22,1	23,5

Load direction F2/F3												
Connection Timber-Concrete												
Vertical leg connection	Anchor nails Ø 4 x 40 n=29	Anchor nails Ø 4 x 40 n=29	Anchor nails Ø 4 x 50 n=29	Anchor nails Ø 4 x 50 n=29	Anchor nails Ø 4 x 60 n=29	Anchor nails Ø 4 x 60 n=29	Angle-bracket screw Ø 5 x 40 n=29	Angle-bracket screw Ø 5 x 40 n=29	Angle-bracket screw Ø 5 x 50 n=29	Angle-bracket screw Ø 5 x 50 n=29	Angle-bracket screw Ø 5 x 60 n=29	Angle-bracket screw Ø 5 x 60 n=29
	Paneltwistec CH Ø 5 x 120 n=4											
Horizontal leg connection	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2	Rock concrete screws Ø 12,5 x 120 n=2	Bolt anchor Ø 12 x 110 n=2
	incl. pressure plate 230 x 70											
Char. shear carrying capacity [kN]	19,3	19,3	22,8	22,8	23,6	23,4	26,5	23,4	28,3	23,4	30,1	23,4

The load-bearing capacities were determined based on ETA-19/0020 Characteristic load-bearing capacity in kN, wood strength class 350 kg/m³ char. Gross density.
The minimum distances between the connectors and the edges according to EC5 must be complied with.

Please note: Verify the assumptions made. The stated values, and type and number of joining devices are based on preliminary measurements. Projects are to be dimensioned exclusively by authorised persons in accordance with the State Building Code. As per LBauO, please contact a qualified structural engineer for a paid proof of stability. We will be happy to refer you to someone.

If you are not familiar with how this product is used, and particularly with the product's intended use, please contact our Application Technology department (technik@eurotec.team).

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