

VGU PLATE T TIMBER

PLATE FOR TENSILE LOADS

TENSILE CONNECTION

Thanks to the use of VGS screws arranged at 45°, the high tensile forces can be transferred in a small space. Strength over 90 kN.

EASY INSTALLATION

The plate is equipped with slots for housing the VGU washers that allow the VGS screws to be inserted at 45°.

AUXILIARY HOLES

The 5 mm holes allow the insertion of temporary positioning screws to hold the plate in place during the insertion of the inclined screws.



USA, Canada and more design values available online.



SERVICE CLASS



MATERIAL

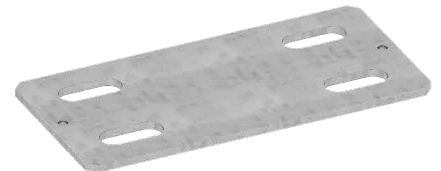
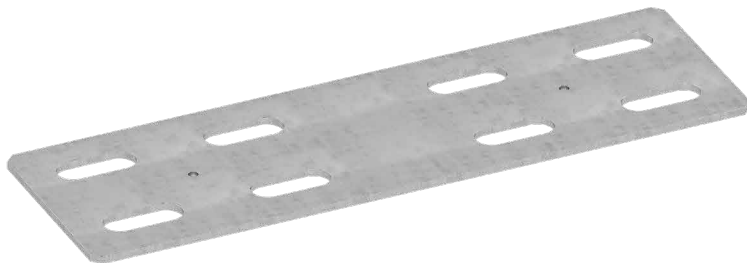
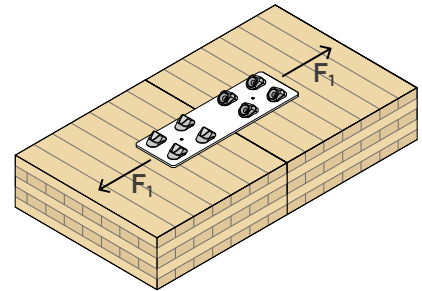
S350
Z275

VGUPLATET185: S350GD+Z275

S235
Fe/Zn12c

VGUPLATET350: S235 + Fe/Zn12c carbon steel

EXTERNAL LOADS

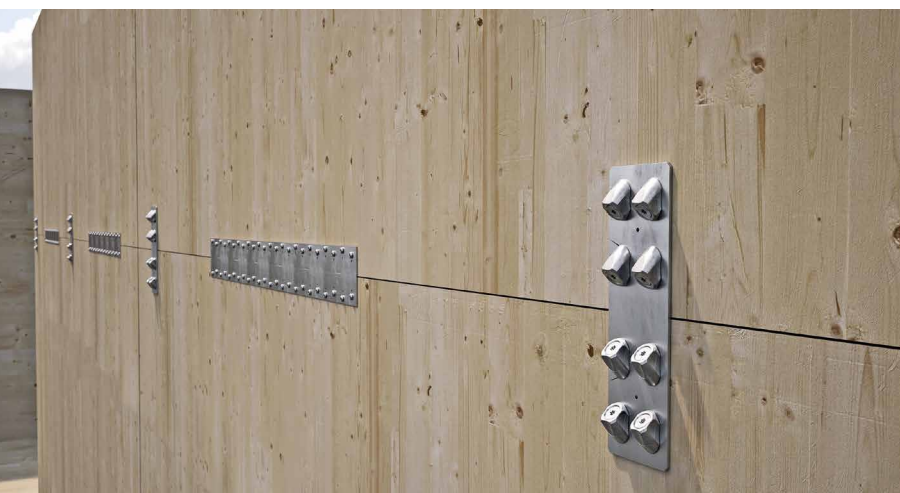


FIELDS OF USE

High-stiffness tensile joints.
Timber-to-timber configuration.

Can be applied to:

- solid timber and glulam
- CLT and LVL panels





STIFFNESS

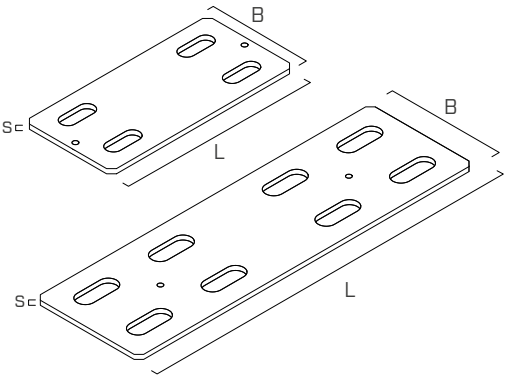
It allows the creation of rigid tensile connections in panel floors with diaphragm behaviour.

MOMENT RESISTING JOINT

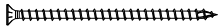
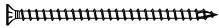
Small moment joints can be made by breaking it down into a tensile action absorbed by the VGU PLATE T plate and a compressive action absorbed by the timber, as in this case, by the DISC FLAT concealed connector.

CODES AND DIMENSIONS

CODE	B [mm] [in]	L [mm] [in]	s [mm] [in]		pcs
VGUPLATET185	88 3 7/16	185 7 1/4	3 0.12	●	1
VGUPLATET350	108 4 1/4	350 13 3/4	4 0.16	●	1

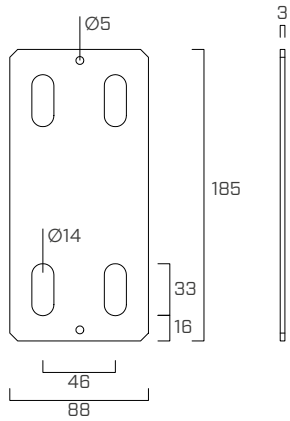


FASTENERS

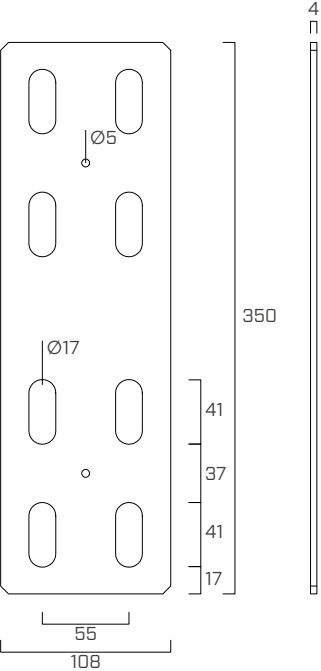
type	description		d [mm]	support 	page
VGS	fully threaded countersunk screw		9-11		575
VGU	45° washer		9-11		569

GEOMETRY

VGUPLATET185



VGUPLATET350

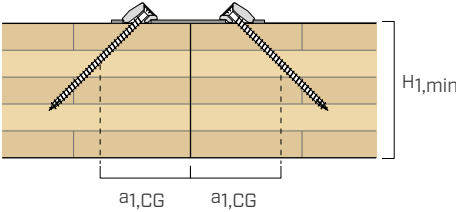
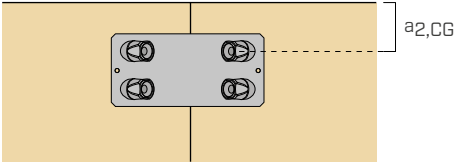


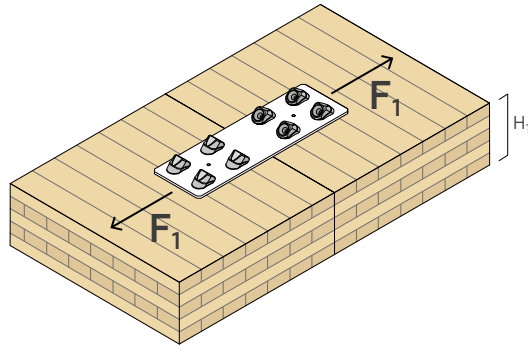
INSTALLATION

MINIMUM DISTANCES

	Ø _{screw} [mm]	L _{screw,min} ⁽¹⁾ [mm]	a _{1,CG} [mm]	a _{2,CG} [mm]	H _{1,min} ⁽¹⁾ [mm]
VGUPLATET185	9	120	90	36	90
VGUPLATET350	11	175	110	44	125

⁽¹⁾ Valid limit value considering the centerline of the plate centred at the interface of the wooden elements, using all connectors.





CODE	H ₁ [mm]	R _{1,k} screw					R _{1,k} steel plate
		VGU	fasteners VGS - Ø x L [mm]	n _V [pcs]	R _{1,k} ax [kN]	R _{1,k} tens [kN]	R _{1,k} plate [kN]
VGUPLATET185	90	VGU945	9 x 120	2+2	14,1	35,9	39,3
	100		9 x 140	2+2	17,1		
	115		9 x 160	2+2	20,1		
	130		9 x 180	2+2	23,1		
	145		9 x 200	2+2	26,1		
	160		9 x 220	2+2	29,0		
	170		9 x 240	2+2	32,0		
VGUPLATET350	125	VGU1145	11 x 175	4+4	49,2	100,3	95,9
	140		11 x 200	4+4	57,7		
	160		11 x 225	4+4	66,2		
	175		11 x 250	4+4	74,7		
	195		11 x 275	4+4	83,2		
	210		11 x 300	4+4	91,7		

GENERAL PRINCIPLES

- Characteristic values comply with the EN 1995:2014 standard in accordance with ETA-11/0030.
- Design values can be obtained from characteristic values as follows:

$$R_d = \min \left\{ \begin{array}{l} \frac{R_{1,k \text{ ax}} \cdot k_{\text{mod}}}{\gamma_M} \\ \frac{R_{1,k \text{ tens}}}{\gamma_{M2}} \\ \frac{R_{1,k \text{ steel}}}{\gamma_{M2}} \end{array} \right.$$

The coefficients k_{mod} , γ_M and γ_{M2} should be taken according to the current regulations used for the calculation.

- A timber density of $\rho_k = 350 \text{ kg/m}^3$ was considered for the calculation process.
- Dimensioning and verification of the timber elements must be carried out separately.
- The strength values of the connection system are valid under the calculation hypothesis listed in the table; for different boundary conditions shall be verified.

INTELLECTUAL PROPERTY

- VGU PLATE T plates are protected by the following Registered Community Designs:
 - RCD 008254353-0017;
 - RCD 008254353-0018.