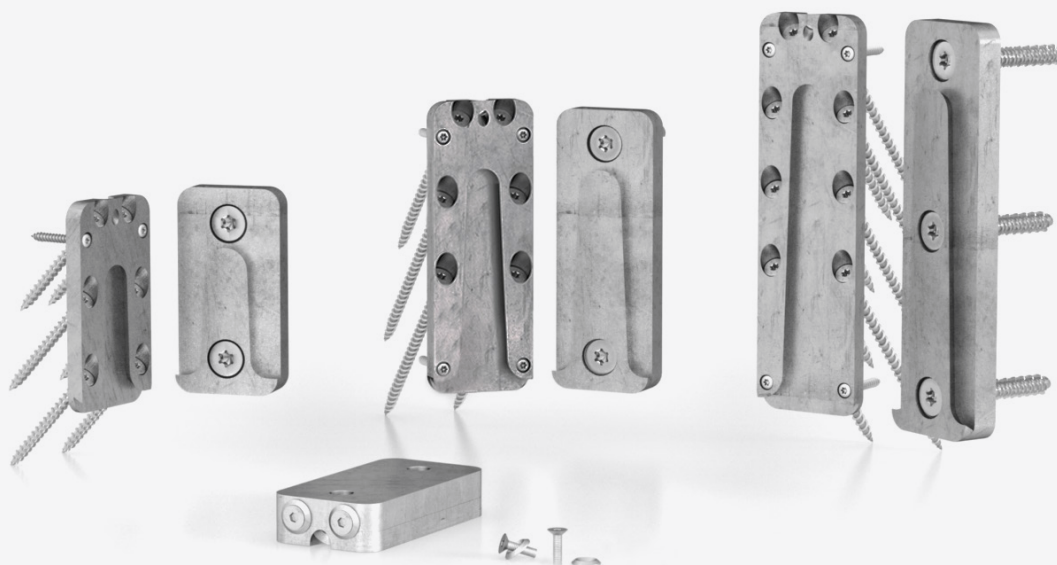


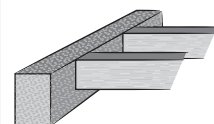
Concealed hook connector TIMBER - CONCRETE

Aluminum three dimensional perforated plate



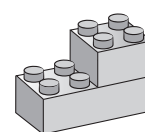
TIMBER AND CONCRETE

Joint calculated and certified for fixing of secondary support beams in concrete (beams or columns). Also certified for steel supports



CAN BE DISASSEMBLED

The hook system makes for fast installation and can easily be removed. Ideal for use in temporary structures



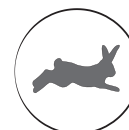
FIELD OF USE

Timber to concrete shear joints

- solid timber
- glulam (Glued Laminated Timber)
- XLAM (Cross Laminated Timber)
- LVL (Laminated Veneer Lumber)

FAST

Fast assembly even on cement, thanks to the possibility of pre-assembling the secondary beam element in the workshop



LOCKING

Supplementary locking screws included in the package guarantee resistance to forces moving from bottom to top





CALCULATION AND CERTIFICATION

Values are calculated and certified for use on reinforced concrete beams or columns. Installed without cutting, it creates a vent that is also an attractive architectural detail



RAPID FASTENING

Installation on concrete is made easier through the use of screw-in SKS anchors, to be quickly and easily dry installed. Application values for cement have been calculated and are available

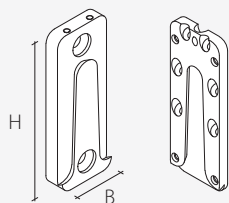


CEMENT AND STEEL

Also certified for applications on steel. In this case, verification of fixing with countersunk bolts should be done separately, based on design choices

CODES AND DIMENSIONS

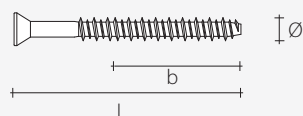
UV-C



code	B [mm]	H [mm]	s [mm]	Ø _{ds} [mm]	Ø _{90°} [mm]	Ø _{45°} [mm]	pcs/box
UVC60115	60	115	24	12	5	6	10
UVC60160	60	160	24	12	5	6	10
UVC60215	60	215	24	12	5	6	10

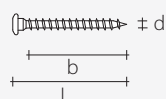
Fasteners not included in the package

SKS CE: SCREW ANCHORS COUNTERSUNK



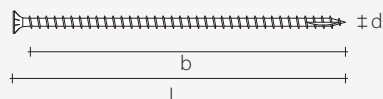
code	Ø [mm]	L [mm]	b [mm]	d _o cl _s [mm]	T _{inst} [Nm]	TX	pcs/box
SKS10100CE	10	100	70	8	50	TX40	50

LBS: 90° SCREWS



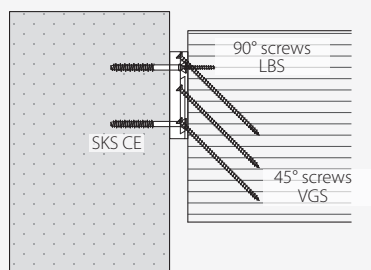
code	d [mm]	L [mm]	b [mm]	TX	pcs/box
PF603550	5	50	46	TX20	200
PF603560	5	60	56	TX20	200
PF603570	5	70	66	TX20	200

VGS: 45° SCREWS

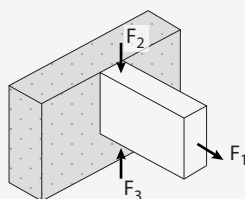


code	d [mm]	L [mm]	b [mm]	TX	pz/conf
VGS6100	6	100	88	TX30	100
VGS6160	6	160	148	TX30	100

FASTENERS



EXTERNAL LOADS



MATERIAL AND DURABILITY

UV: aluminum alloy.

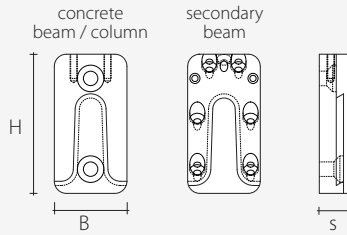
To be used in Service class 1 and 2 (EN 1995:2008)

FIELD OF USE

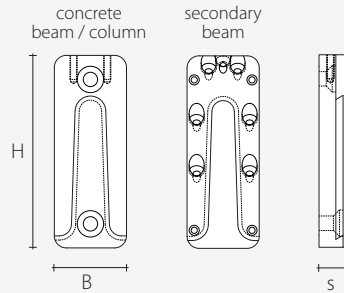
Timber to concrete joint

STATIC VALUES - TIMBER TO CONCRETE JOINT

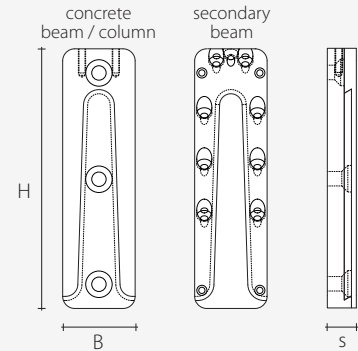
UVC60115



UVC60160



UVC60215

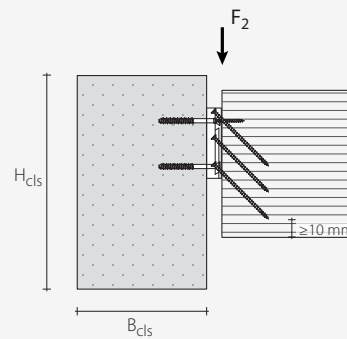
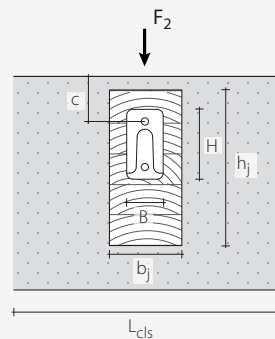


FASTENERS

UV-C CONNECTOR			CONCRETE BEAM / COLUMN	WOODEN SECONDARY BEAM	
type	B x H x s [mm]	nailing / dowelling	$n_{H,90^\circ}$ [pcs - Ø]	$n_{J,90^\circ}$ [pcs - Ø]	$n_{J,45^\circ}$ [pcs - Ø]
UVC60115	60 x 115 x 24	total	2 - SKS CE Ø10	2 - LBS Ø5	6 - VGS Ø6
UVC60160	60 x 160 x 24		2 - SKS CE Ø10	4 - LBS Ø5	6 - VGS Ø6
UVC60215	60 x 215 x 24		3 - SKS CE Ø10	4 - LBS Ø5	8 - VGS Ø6

If it is necessary to impede upward slippage of the connector (e.g. F_3 force), two supplemental M6 x 20 screws should be used. The screws and washers are included in the package.

TIMBER TO CONCRETE JOINT - FASTENING TO BEAM



CHARACTERISTIC RESISTANCE

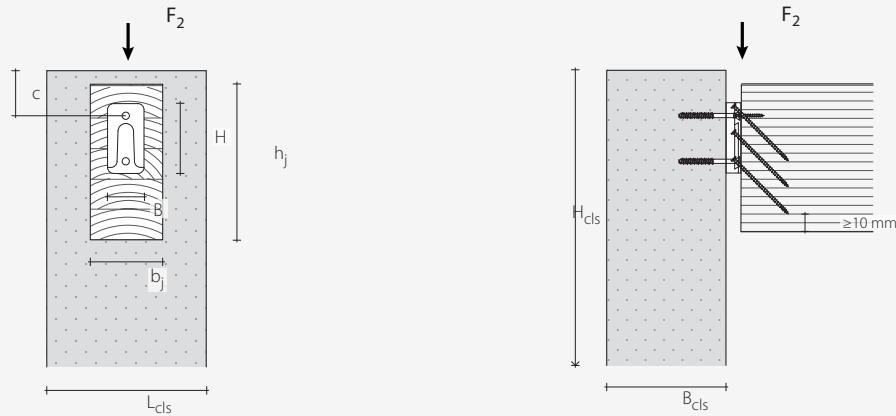
type	$R_{2,k}$ TIMBER			$R_{2,k}$ UNCRACKED CONCRETE		
	fasteners holes Ø5 ⁽¹⁾ Ø x L [mm]	fasteners holes Ø6 ⁽¹⁾ Ø x L [mm]	$R_{2,k}$ timber [kN]	fasteners holes Ø12 Ø x L [mm]	$R_{2,k}$ cs [kN]	γ_{clS}
UVC60115	LBS Ø5 x 50	VGS Ø6 x 100	28,00	SKS CE Ø10 x 100	9,78	1,5
UVC60160	LBS Ø5 x 50	VGS Ø6 x 100	28,00	SKS CE Ø10 x 100	12,23	1,5
UVC60215	LBS Ø5 x 50	VGS Ø6 x 100	37,34	SKS CE Ø10 x 100	16,10	1,5

INSTALLATION

UV-C CONNECTOR		CONCRETE MAIN BEAM			WOODEN SECONDARY BEAM ⁽²⁾	
type	B x H x s [mm]	$B_{clS,MIN}$ [mm]	$H_{clS,MIN}$ [mm]	$C = C_{min}$ [mm]	$b_{j,MIN}$ [mm]	$h_{j,MIN}$ [mm]
UVC60115	60 x 115 x 24	130	200	50	80	180
UVC60160	60 x 160 x 24	140	250	50	100	180
UVC60215	60 x 215 x 24	160	320	50	100	220

The length of the L_{clS} beam in this calculation configuration, when respecting the distances shown in the table, does not influence the resistance value provided $L_{clS} > 500$ mm

TIMBER TO CONCRETE JOINT - FASTENING TO COLUMN



CHARACTERISTIC RESISTANCE

type	R _{2,k} TIMBER			R _{2,k} UNCRACKED CONCRETE		
	fasteners holes Ø5 ⁽¹⁾ Ø x L [mm]	fasteners holes Ø6 ⁽¹⁾ Ø x L [mm]	R _{2,k} timber [kN]	fasteners holes Ø12 Ø x L [mm]	R _{2,k} ds [kN]	γ _{cls}
UVC60115	LBS Ø5 x 50	VGS Ø6 x 100	28,00	SKS CE Ø10 x 100	17,34	1,5
UVC60160	LBS Ø5 x 50	VGS Ø6 x 100	28,00	SKS CE Ø10 x 100	23,52	1,5
UVC60215	LBS Ø5 x 50	VGS Ø6 x 100	37,34	SKS CE Ø10 x 100	29,07	1,5

INSTALLATION

UV-C CONNECTOR		CONCRETE COLUMN			WOODEN SECONDARY BEAM ⁽²⁾	
type	B x H x s [mm]	B _{cls,MIN} [mm]	L _{cls,MIN} [mm]	C > C _{cr} [mm]	b _{J,MIN} [mm]	h _{J,MIN} [mm]
UVC60115	60 x 115 x 24	130	200	> 85	80	180
UVC60160	60 x 160 x 24	140	200	> 85	100	180
UVC60215	60 x 215 x 24	160	200	> 85	100	220

The length of the H_{cls} column in this calculation configuration, when respecting the distances shown in the table, does not influence the resistance value provided H_{cls} > 1000 mm

GENERAL PRINCIPLES

- Characteristic values comply with the EN 1995:2008 standard in accordance with product ETA.
- Design values can be obtained from characteristic values as follows:

$$R_d = \min \left\{ \frac{R_{2,k \text{ legno}} \cdot k_{mod}}{\gamma_m}, \frac{R_{2,k \text{ cls}}}{\gamma_{cls}} \right\}$$

The coefficients γ_m and k_{mod} should be taken according to the current regulations used for the calculation.

The coefficients γ_{cls} are provided in the table.

- During the calculation phase a timber density ρ_k = 350 kg/m³ and a concrete grade C 25/30 have been considered.
- Dimensioning and verification of timber elements must be carried out separately.
- Resistance values are valid for the calculation examples defined in the table. When edge conditions are different (e.g. minimum distances from the edges), they must be verified by the designer.

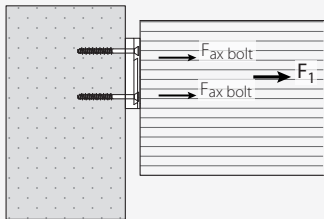
NOTES

- (1) Use of LBS and VGS screws longer than those in the table is allowed, without it influencing the overall resistance of the connection (failure on concrete side). In this case, installation parameters must be reviewed (wooden secondary beam).
- (2) The minimum dimensions of the wood elements vary based on changes in the direction of the load and must be verified on a case by case basis. The table shows minimum dimensions to guide the designer when selecting the connector.

DIMENSIONING OF ALTERNATIVE ANCHORS

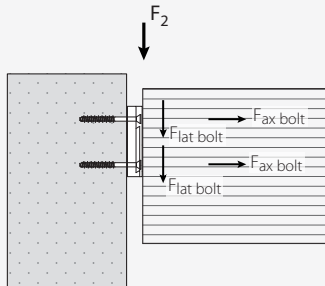
Fixing to concrete using anchors other than those in the table must be verified on the basis of the F_{bolt} forces that affect the anchors in question. This can be determined using the k_t coefficients.

TRACTION STRESS F1



$$F_{ax\ bolt,d} = \frac{F_{1,d}}{n_{bolt}}$$

VERTICAL SHEAR STRESS F2



$$F_{lat\ bolt,d} = K_{t\perp} \cdot F_{2,d}$$

$$F_{ax\ bolt,d} = K_{t//} \cdot F_{2,d}$$

	n_{bolt}	$k_{t\perp}$	$k_{t//}$
UVC60115	2	0,50	0,299
UVC60160	2	0,50	0,192
UVC60215	3	0,33	0,106

The anchor is satisfactorily verified if project resistance, calculated considering the effects of the group and the geometry of the UV-C connector, is greater than project stress:

$$R_{bolt,d} \geq F_{bolt,d}$$