ALUMINI HT

CE ETA-09/0361

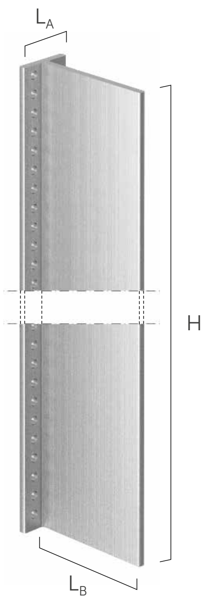
CONCEALED BRACKET WITHOUT HOLES

- It allows to connect secondary beams with limited width (starting from 55 mm)
- Strengths in all directions: vertical, horizontal and axial. They can be used in inclined joints, for timber-to-timber and timber-to-concrete connections
- The use of KGL EVO screws and SBD-HT self-drilling dowels allows excellent installation tolerance

alu

VIDEO

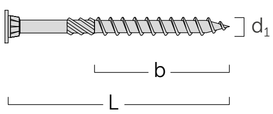
CODE	H [mm]	L_A [mm]	L_B [mm]	pcs
ALUMINIHT65	65	45	110	25
ALUMINIHT95	95	45	110	25
ALUMINIHT125	125	45	110	25
ALUMINIHT155	155	45	110	15



CODE	H [mm]	L_A [mm]	L_B [mm]	pcs
ALUMINIHT2165	2165	45	110	1

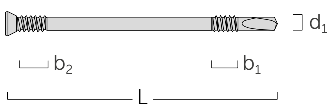
FASTENERS

KGL EVO | PAN HEAD SCREW WITH EVO COATING



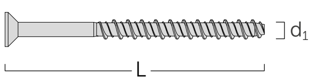
d_1 [mm]	CODE	L [mm]	b [mm]	pcs
5 TX 25	KGLEVO560	60	35	200

SBD-HT | SELF-DRILLING DOWEL



d_1 [mm]	CODE	L [mm]	b_2 [mm]	b_1 [mm]	pcs
7,5 TX 40	SBD7555	55	10	-	50
	SBD7575H	75	10	8	50
	SBD7595H	95	10	15	50

SKS ALUMINI | SCREW ANCHOR WITH COUNTERSUNK HEAD



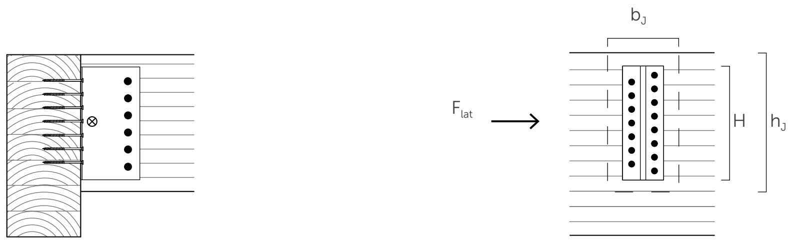
d_1 [mm]	CODE	L [mm]	pcs
6,5 TX 30	SKSALUMINI660	60	100

STRUCTURAL VALUES

TIMBER-TO-TIMBER JOINT | F_v

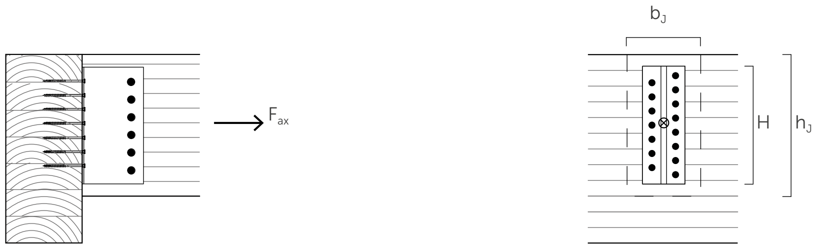
ALUMINI HT	SECONDARY BEAM			MAIN BEAM	
H [mm]	b_J [mm]	h_J [mm]	SBD-HT dowels Ø7,5 [pcs Ø x L]	KGL EVO screw Ø5 x 60 [pcs]	$R_{V,k}$ [kN]
65	60	90	2 - Ø7,5 x 55	7	**2,9**
95	60	120	3 - Ø7,5 x 55	11	**7,1**
125	60	150	4 - Ø7,5 x 55	15	**12,9**
155	60	180	5 - Ø7,5 x 55	19	**19,9**

TIMBER-TO-TIMBER JOINT | F_{lat}



ALUMINI HT	SECONDARY BEAM			MAIN BEAM		
H [mm]	b_J [mm]	h_J [mm]	SBD-HT dowels Ø7,5 [pcs Ø x L]	KGL EVO screw Ø5 x 60 [pcs]	$R_{lat,k,alu}$ [kN]	$R_{lat,k,beam}$ [kN]
65	60	90	2 - Ø7,5 x 55	7	**1,6**	**3,1**
95	60	120	3 - Ø7,5 x 55	11	**2,3**	**4,1**
125	60	150	4 - Ø7,5 x 55	15	**3,0**	**5,1**
155	60	180	5 - Ø7,5 x 55	19	**3,8**	**6,2**

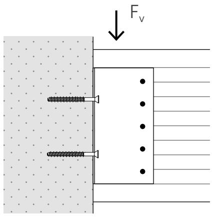
TIMBER-TO-TIMBER JOINT | F_{ax}

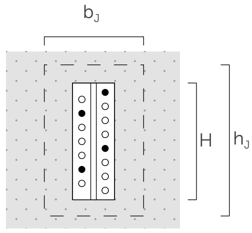


ALUMINI HT	SECONDARY BEAM			MAIN BEAM	
H [mm]	b_J [mm]	h_J [mm]	SBD-HT dowels Ø7,5 [pcs Ø x L]	KGL EVO screw Ø5 x 60 [pcs]	$R_{V,k}$ [kN]
65	60	90	2 - Ø7,5 x 55	7	**15,5**
95	60	120	3 - Ø7,5 x 55	11	**24,3**
125	60	150	4 - Ø7,5 x 55	15	**33,2**
155	60	180	5 - Ø ,5 x 55	19	**42,0**

STRUCTURAL VALUES

TIMBER-TO-CONCRETE JOINT | F_V





			SECONDARY BEAM timber		MAIN BEAM uncracked concrete	
ALUMINI HT			SBD-HT dowels		SKSALUMINI660 anchor	
H	b_J	h_J	Ø7,5	$R_{V,k}$	Ø6,5 x 60	$R_{V,d\ concrete}$
[mm]	[mm]	[mm]	[pcs Ø x L]	[kN]	[pcs Ø x L]	[kN]
125	60	150	3 - Ø7,5 x 55	**15,6**	4	**6,0**
155	60	180	3 - Ø7,5 x 55	**15,6**	5	**7,3**

GENERAL PRINCIPLES

- Resistance values for the fastening system are valid for the calculation examples shown in the table.
- The calculation process used a timber characteristic density of ρ_k = 385 kg/m^3 and C20/25 concrete with a thin reinforcing layer, where edge-distance is not a limiting factor.
- The coefficients k_{mod} and γ_M should be taken according to the current regulations used for the calculation.
- Dimensioning and verification of timber and concrete elements must be carried out separately.

STRUCTURAL VALUES | F_v

TIMBER-TO-TIMBER

- Characteristic values comply with the EN 1995-1-1 standard in accordance with ETA-09/0361.
- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k \cdot k_{mod}}{\gamma_M}$$

- In some cases the connection shear strength $R_{V,k}$ is notably large and may be higher than the secondary beam strength. Particular attention should be paid to the shear check of the reduced timber cross-section in correspondence with the bracket location.

STRUCTURAL VALUES | F_{lat} | F_{ax}

TIMBER-TO-TIMBER

- Characteristic values comply with the EN 1995-1-1 standard in accordance with ETA-09/0361. Design values can be obtained from characteristic values as follows:

$$R_{lat,d} = min \begin{cases} \dfrac{R_{lat,k,alu}}{\gamma_{M,alu}} \\ \dfrac{R_{lat,k,beam} \cdot k_{mod}}{\gamma_{M,T}} \end{cases}$$

$$R_{ax,d} = \frac{R_{ax,k} \cdot k_{mod}}{\gamma_M}$$

with $\gamma_{M,T}$ partial coefficient of the timber.

STRUCTURAL VALUES | F_v

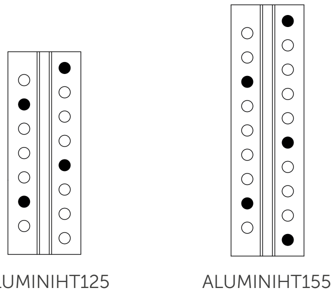
TIMBER-TO-CONCRETE

- Characteristic values on wood side are consistent with EN 1995-1-1 and in accordance with ETA-09/0361. Fastening on concrete is not CE marked, it is advisable to use the joint system for non-structural applications. Fastening on concrete is not CE marked, it is advisable to use the joint system for non-structural applications.
- Design resistance values can be obtained from the tabled values as follows:

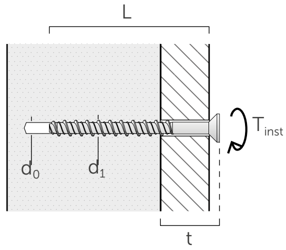
$$R_d = min \begin{cases} \dfrac{R_{k,\ timber} \cdot k_{mod}}{\gamma_M} \\ R_{d,\ concrete} \end{cases}$$

- Because of the arrangement of the fasteners on concrete, special care should be taken during installation.

ANCHORS INSTALLATION



anchor	d_1 [mm]	L [mm]	d_0 [mm]	t [mm]	TX	T_{inst} [Nm]
SKSALUMINI660	6,5	60	5	≈ 10	TX30	15



ASSEMBLY

VIDEO