F70

“T” SHAPED POST BASE

VIDEO

DESIGN REGISTERED

CE ETA-10/0422

PARTIAL INTERLOCKING
Bending moment resistant for partial bracing of canopies and shelters. Strength and stiffness values tested.

INVISIBLE
The internal knife plate is used to create a totally concealed joint. Designed to accommodate columns of all dimensions. Hot-dip galvanisation and aluminium versions ensure durability in outdoor settings.

TWO VERSIONS
Without holes, to be used with self-drilling dowels; with holes, to be used with smooth dowels or bolts.

ALUMIDI
For compression and shear stress, the ALUMIDI aluminium bracket can be used as a post base with SBD self-drilling dowels.

USA DESIGN VALUES
CANADA, EU and more design values available online.

SERVICE CONDITION
DRY WET

MATERIAL

S235 HDGS5 — **F70** versions **80**, **100**, **140**: carbon steel S235 with hot-dip galvanising 55 µm

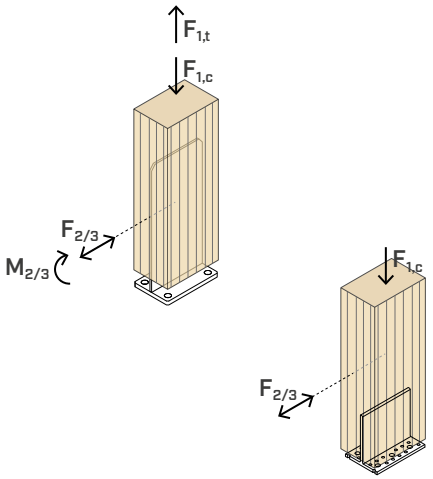
S355 HDGS5 — **F70** versions **180** and **220**: S355 carbon steel with hot-dip galvanising 55 µm

S235 HDG — **F70LIFT**: S235 hot dip bright zinc plated carbon steel

alu 6005A — **ALUMIDI**: EN AW-6005A° aluminium alloy

GROUND CLEARANCE
from 0.8 to 1.6 in

EXTERNAL LOADS



VIDEO
Scan the QR Code and watch the video on our YouTube channel

FIELDS OF USE

Ground joints for moment-resistant columns in one direction.
Pergolas, carports, gazebos.

Suitable for columns in:
- solid timber softwood and hardwood
- Glulam, LVL

VERSATILE

It can be used not only as a post holder but also for the construction of cantilever beams (such as canopies, roofs, etc.).

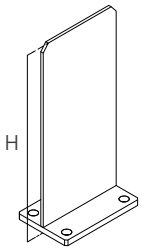
SPECIAL STRUCTURES

By means of a tension plate and a compression plate, it is possible to produce joints for large glulam columns.

CODES AND DIMENSIONS

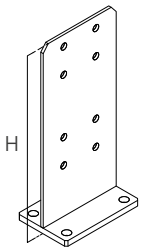
F70

CODE	H [in]	bottom plate [in]	base holes [n. x in]	knife plate thickness [in]	pcs
F7080	6 1/8	3 1/8 x 3 1/8 x 0.237	4 x Ø0.36	0.158	1
F70100	8 1/8	4 x 4 x 0.237	4 x Ø0.36	0.237	1
F70140	12 1/8	5 1/2 x 5 1/2 x 0.315	4 x Ø0.46	0.315	1
F70180	15 3/4	7 1/8 x 4 3/4 x 0.473	4 x Ø0.71	0.237	1
F70220	15 3/4	8 5/8 x 5 1/2 x 0.591	4 x Ø0.71	0.237	1



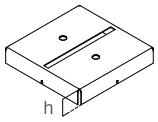
F70 L

CODE	H [in]	bottom plate [in]	base holes [n. x in]	knife plate thickness [in]	knife plate hole [n. x in]	pcs
F70100L	8 1/8	4 x 4 x 0.237	4 x Ø0.36	0.237	4 x Ø0.52	1
F70140L	12 1/8	5 1/2 x 5 1/2 x 0.315	4 x Ø0.46	0.315	6 x Ø0.52	1
F70180L	15 3/4	7 1/8 x 4 3/4 x 0.473	4 x Ø0.71	0.237	8 x Ø0.52	1
F70220L	15 3/4	8 5/8 x 5 1/2 x 0.591	4 x Ø0.71	0.237	12 x Ø0.52	1



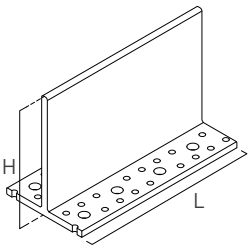
F70 LIFT

CODE	h [in]	plate [in]	thickness [in]	suitable for	pcs
LIFT44	1	3 1/2 X 3 1/2	0.119	F7080	1
LIFT66	1	5 3/8 X 5 3/8	0.119	F70100 - F70100L	1
LIFT88	1	7 1/4 X 7 1/4	0.119	F70140 - F70140L	1

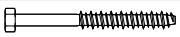
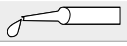


ALUMIDI

CODE	H [in]	type	L [in]	pcs
ALUMIDI80	4 5/16	without holes	3 1/8	25
ALUMIDI120	4 5/16	without holes	4 3/4	25
ALUMIDI160	4 5/16	without holes	6 1/4	25
ALUMIDI200	4 5/16	without holes	8	15
ALUMIDI240	4 5/16	without holes	9 1/2	15

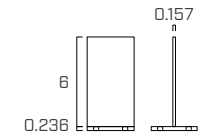


FASTENERS

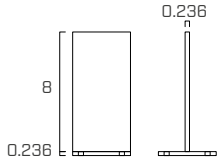
type	description		d [in]	support
LBS	round head screw		0.2	
SBD	self-drilling dowel		0.30	
STA	smooth dowel		0.48	
KOS/KOT	hexagonal/round head bolt		0.48 (M12)	
SKR/SKR EVO	screw-in anchor		0.3 - 0.31 - 0.4 - 0.63	
AB1	CE1 expansion anchor		0.4 - 0.63 (M8 - M10 - M16)	
ABE A4	CE1 expansion anchor		0.31 - 0.4 (M8 - M10)	
VIN-FIX	vinyl ester chemical anchor		0.31 - 0.4 - 0.63 (M8 - M10 - M16)	
HYB-FIX	hybrid chemical anchor		0.31 - 0.4 - 0.63 (M8 - M10 - M16)	
EPO-FIX	epoxy chemical anchor		0.31 - 0.4 - 0.63 (M8 - M10 - M16)	

GEOMETRY

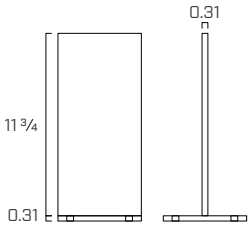
F7080



F70100



F70140



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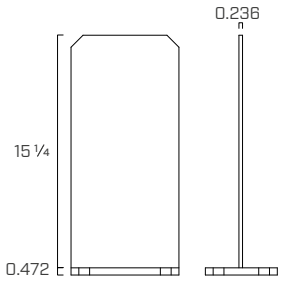

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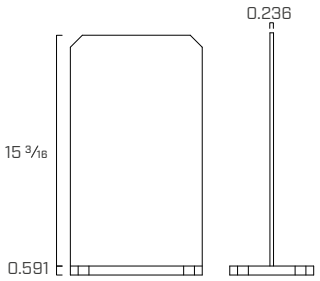
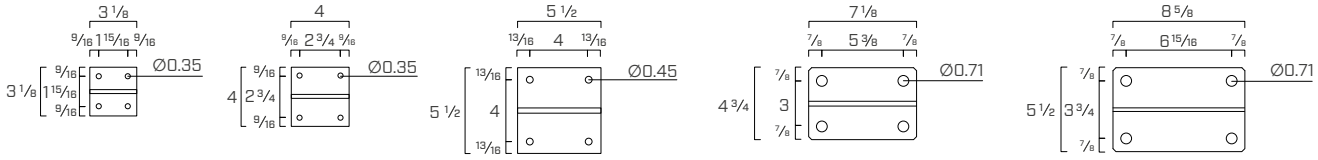
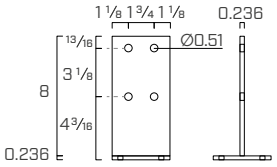
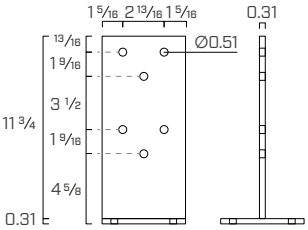




F70100L



F70140L



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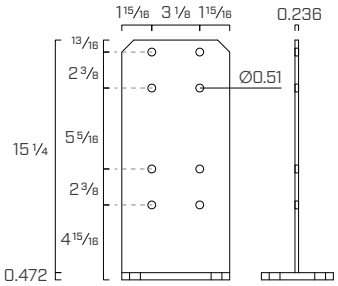

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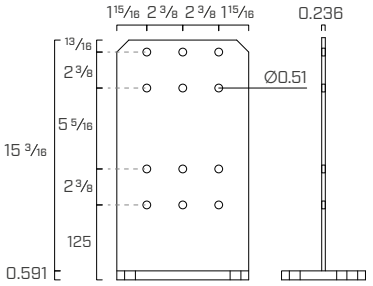
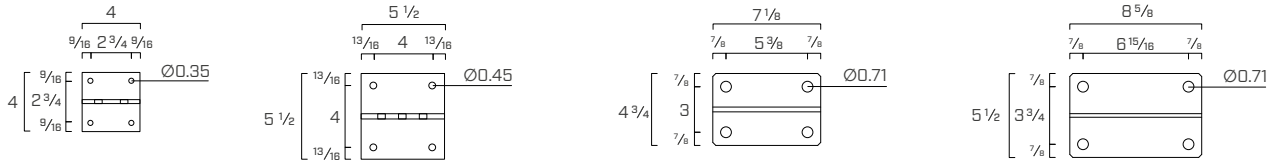
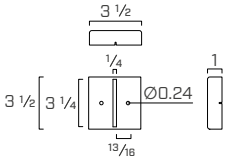
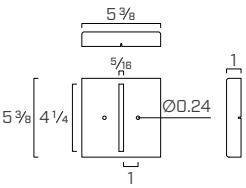




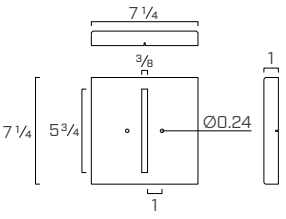
LIFT44



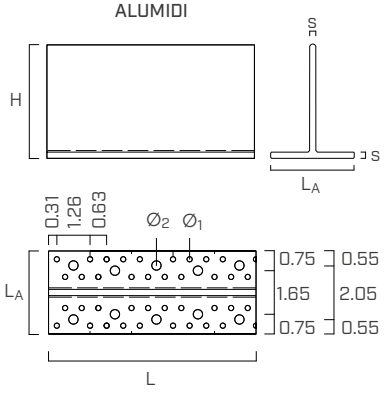
LIFT66



LIFT88



ALUMIDI

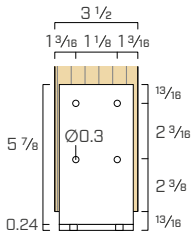


ALUMIDI			
thickness	**s**	[in]	0.24
flange width	**L_A**	[in]	3 1/8
height	**H**	[in]	4 5/16
small flange-holes	**$Ø_1$**	[in]	0.2
large flange-holes	**$Ø_2$**	[in]	0.35

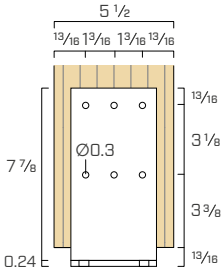
FASTENING CONFIGURATIONS

F70 WITH SBD SELF-DRILLING DOWELS

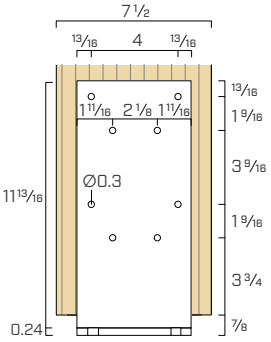
F7080



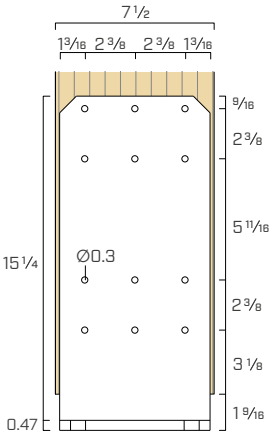
F70100



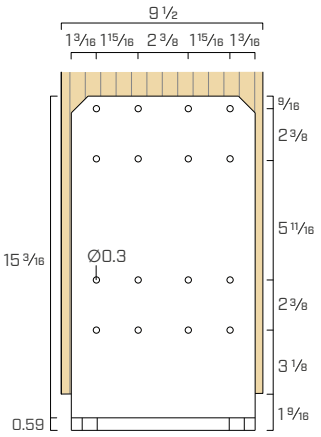
F70140

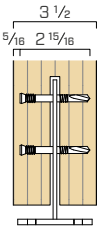


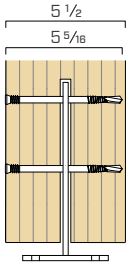
F70180

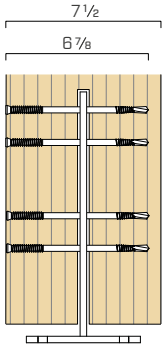


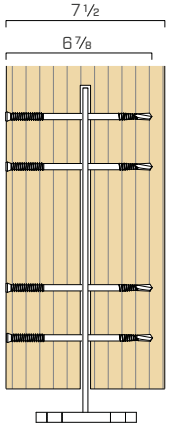
F70220

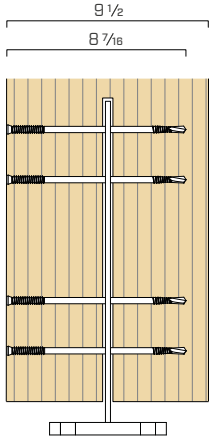






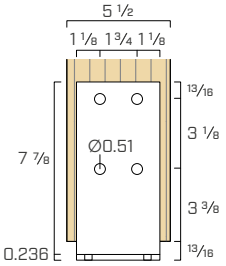




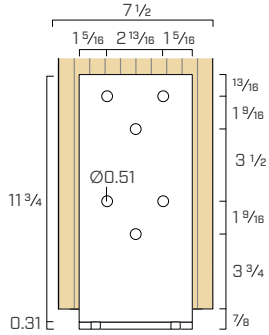


F70 WITH STA SMOOTH DOWELS OR BOLTS

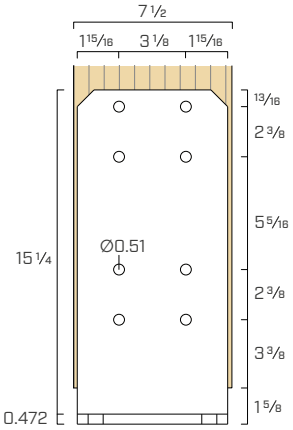
F70100L



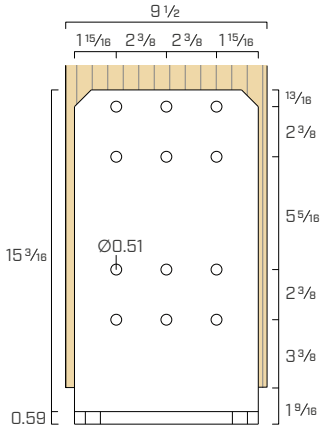
F70140L



F70180L

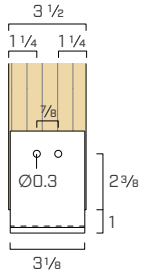


F70220L

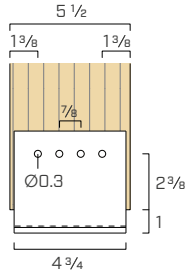


ALUMIDI WITH SBD SELF-DRILLING DOWELS

ALUMIDI80



ALUMIDI120



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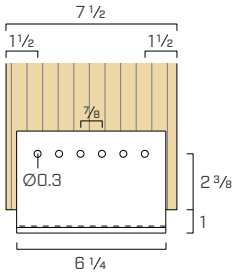

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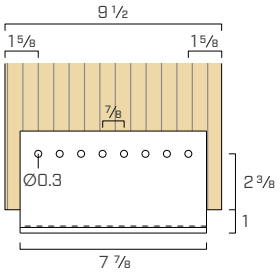

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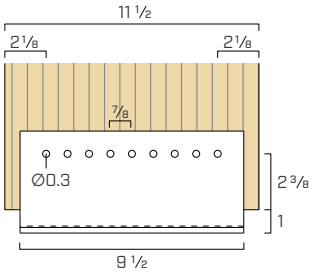
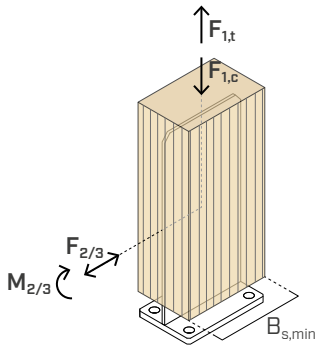
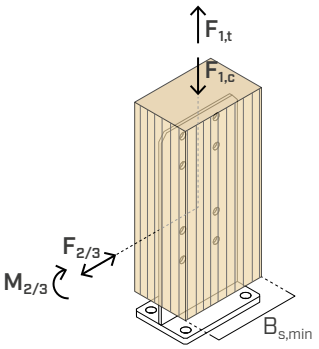


rothoblaas

STRUCTURAL VALUES | F70





F70

			COMPRESSION		TENSION		SHEAR		MOMENT	
CODE	fasteners pcs - Ø x L [in]	column size(1) $B_{s,}$ [in]	$F_{1,c\ timber}$ [lbs]	$F_{1,c\ steel}$ [lbs]	$F_{1,t\ timber}$(3) [lbs]	$F_{1,t\ steel}$ [lbs]	$F_{2/3,\ timber}$ [lbs]	$F_{2/3,\ steel}$ [lbs]	$M_{2/3,\ timber}$ [lbs.ft]	$M_{2/3,\ steel}$ [lbs.ft]
F7080	4 - Ø0.30x2 15/16	min 3.5x3.5(2)	**3098**	**9132**	**4957**	**2278**	**1681**	**186**	**191**	**108**
	4 - Ø0.30x5 5/16	5.5x5.5	**3642**	**9132**	**5827**	**2278**	**2455**	**186**	**271**	**108**
F70100	6 - Ø0.30x5 5/16	min 5.5x5.5	**6169**	**17497**	**9871**	**3254**	**3657**	**269**	**629**	**215**
	6 - Ø0.30x6 7/8	7.5x7.5	**6577**	**17497**	**10524**	**3254**	**4170**	**269**	**708**	**215**
F70140	8 - Ø0.30x5 5/16	min 7.5x5.5	**8163**	**31963**	**13061**	**5669**	**4851**	**484**	**2023**	**517**
	8 - Ø0.30x6 7/8	7.5x7.5	**8729**	**31963**	**13966**	**5669**	**5541**	**484**	**2163**	**517**
F70180	12 - Ø0.30x4 1/2	min 7.5x5.5	**12410**	**32493**	**19856**	**32597**	**7344**	**3022**	**2985**	**3981**
	12 - Ø0.30x6 7/8	7.5x7.5	**13245**	**32493**	**21193**	**32597**	**8382**	**3022**	**3376**	**3981**
F70220	16 - Ø0.30x6 7/8	min 9.5x7.5	**17640**	**39998**	**28224**	**40724**	**11166**	**6200**	**4850**	**6540**
	16 - Ø0.30x8 7/16	9.5x9.5	**18489**	**39998**	**29583**	**40724**	**11817**	**6200**	**5123**	**6540**

F70 L

			COMPRESSION		TENSION		SHEAR		MOMENT	
CODE	fasteners pcs - Ø x L [in]	column size $B_{s,}$ [in]	$F_{1,c\ timber}$ [lbs]	$F_{1,c\ steel}$ [lbs]	$F_{1,t\ timber}$(3) [lbs]	$F_{1,t\ steel}$ [lbs]	$F_{2/3,\ timber}$ [lbs]	$F_{2/3,\ steel}$ [lbs]	$M_{2/3,\ timber}$ [lbs.ft]	$M_{2/3,\ steel}$ [lbs.ft]
F70100L	4 - Ø0.48x3 1/8	min 3.5x5.5	**4861**	**17497**	**7489**	**3254**	**2539**	**280**	**426**	**215**
	4 - Ø0.48x4 3/4	5.5x5.5	**5893**	**17497**	**9429**	**3254**	**2941**	**280**	**498**	**215**
F70140L	6 - Ø0.48x4 3/4	min 5.5x5.5	**8735**	**31963**	**13977**	**5669**	**4376**	**484**	**1124**	**517**
	6 - Ø0.48x5 1/2	7.5x7.5	**9105**	**31963**	**15468**	**5669**	**4762**	**484**	**1217**	**517**
F70180L	8 - Ø0.48x6 1/4	min 5.5x7.5	**12221**	**32493**	**19554**	**32597**	**7005**	**3022**	**2611**	**3981**
F70220L	12 - Ø0.48x7 1/8	min 7.5x10.5	**18332**	**3998**	**29331**	**40724**	**10851**	**5026**	**4270**	**6540**

STIFFNESS

CODE	fasteners for timber	configuration pcs - Ø [in]	$K_{2/3}$ [kip·ft/rad]
F70100	SBD	6 - Ø0.30	44
F70140		8 - Ø0.30	140
F70180		12 - Ø0.30	472
F70220		16 - Ø0.30	664
F70100L	STA	4 - Ø0.47	37
F70140L		6 - Ø0.47	140
F70180L		8 - Ø0.47	428
F70220L		12 - Ø0.47	516

NOTES and GENERAL PRINCIPLES see page 7.

STRUCTURAL VALUES | F70 + LIFT

F70 + LIFT

			COMPRESSION[4]		TENSION		SHEAR		MOMENT	
CODE	fasteners	column size[1]	$F_{1,c\ timber}$	$F_{1,c\ steel}$	$F_{1,t\ timber}$[3]	$F_{1,t\ steel}$	$F_{2/3,\ timber}$	$F_{2/3,\ steel}$	$M_{2/3,\ timber}$	$M_{2/3,\ steel}$
	pcs - Ø x L [in]	$B_{s,}$ [in]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs.ft]	[lbs.ft]
F7080 + LIFT 44	4 - Ø0.30x5 5/16	3.5x3.5[2]	**16509**	**10400**	**4957**	**2278**	**1681**	**186**	**191**	**108**
F70100 + LIFT66	6 - Ø0.30x5 5/16	5.5x5.5	**40136**	**18600**	**9871**	**3254**	**3657**	**269**	**629**	**215**
F70140 + LIFT88	8 - Ø0.30x6 7/8	7.5x7.5	**70343**	**27500**	**13966**	**5669**	**5541**	**484**	**2163**	**517**

F70L + LIFT

			COMPRESSION[4]		TENSION		SHEAR		MOMENT	
CODE	fasteners	column size	$F_{1,c\ timber}$	$F_{1,c\ steel}$	$F_{1,t\ timber}$[3]	$F_{1,t\ steel}$	$F_{2/3,\ timber}$	$F_{2/3,\ steel}$	$M_{2/3,\ timber}$	$M_{2/3,\ steel}$
	pcs - Ø x L [in]	$B_{s,}$ [in]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs.ft]	[lbs.ft]
F70100L + LIFT66	4 - Ø0.48x4 3/4	5.5x5.5	**40136**	**18600**	**9429**	**3254**	**2941**	**280**	**498**	**215**
F70140L + LIFT88	6 - Ø0.48x5 1/2	7.5x7.5	**70343**	**27500**	**15468**	**5669**	**4762**	**484**	**1217**	**517**

NOTES

(1) Dowels are flushed to the timber surface (see FASTENING AND CONFIGURATION section). For timber sections thicker than those specified, verify that the SBD dowel length ensures full passage through the knife plate. Alternatively, the dowel may be recessed to compensate for increased timber thickness. A longer dowel can also be selected to achieve a flush installation with the timber surface.

(2) Only for F7080 with a 3.5" x 3.5" column size, the SBD dowels must be recessed 8 mm (5/16") from the surface to ensure that the threads are not located in the knife-plate zone as shown in FASTENING AND CONFIGURATION section.

(3) The timber-side tension capacities reported in the table are factored based on a load duration factor of C_d = 1.6.

(4) The value on Timber side comes from calculating crushing of the wood post on the LIFT. The value on Steel side is a full assembly tested value (dowels +LIFT). In this case the load carrying capacity of the system is governed by the LIFT.

GENERAL PRINCIPLES

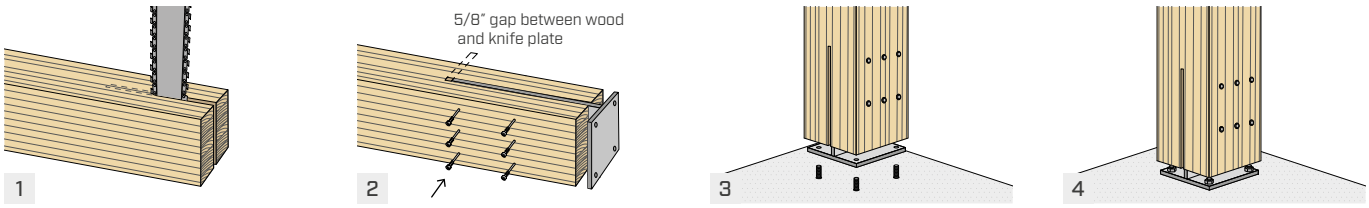
- The strength values indicated in the table are valid in compliance with the fasteners installation according to the configurations indicated.
- The verification of the fastener-to-concrete connection must be carried out separately.
- The moment and shear strength values are calculated individually. In case of combined loading the verification must be carried out separately.
- For the calculation process a timber with a specific gravity of 0.42 has been considered.
- For the Timber side : The values are calculated according to the NDS (2024). The tabled reference design values are unfactored and should be multiplied by the adjustment factors to get the adjusted design values except for calculating Uplift capacity in which case C_d=1.6.
- For the steel side: calculations are based on AISC 360-16 and test-validated analysis.

INTELLECTUAL PROPERTY

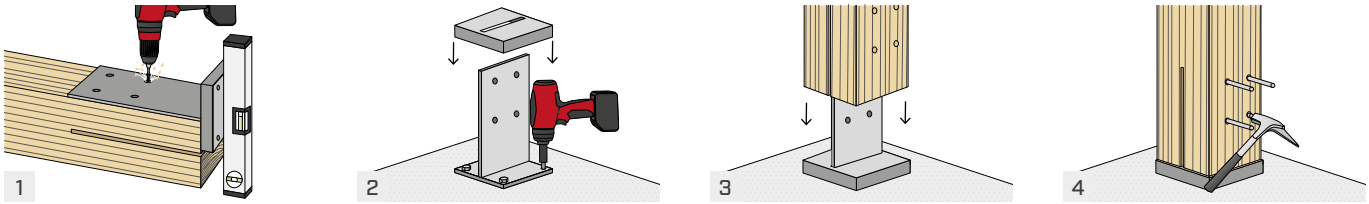
- Some models of F70 post bases are protected by the following Registered Community Designs:
  - RCD 015032190-0014;
  - RCD 015032190-0015.

MOUNTING

F70 or ALUMIDI with SBD self-drilling dowels



F70 L with STA dowels



ASSEMBLY WITH POSSIBILITY OF ADJUSTMENT

As an alternative to classic positioning, it is possible to assemble the product by levelling it as follows: