

# Technical data sheet



AKRX3  
**Angle bracket**

These brackets allow optimum connection between wood and other building materials such as concrete and steel. This is an economic connection that can be used in many areas. AKR AKR-L and vary in the screw hole.

AKR bracket is 3 mm thick and the edges are reinforced with rib

## Features

### Material

#### Steel quality:

- S 250 GD + Z 275 according to DIN EN 10346

#### Corrosion protection:

- 275 g / m galvanized on both sides 20mm

## Benefits

- Load capacity in all directions
- Optimised capacities for partnailing and fullnailing
- One or two-sided connections
- Possible mounting with distance from the support at tension connections
- Optimised bolt utilisation

## Applications

### Applicatons

#### Supporting member:

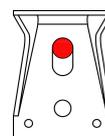
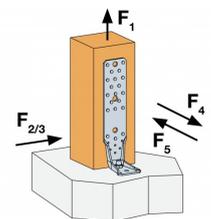
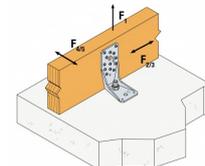
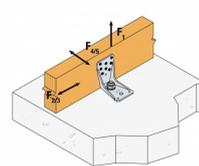
**Concrete, steel**

#### Supported member:

**Solid wood, engineered wood**

## Scope

**The AKR brackets allow optimum connection between wood and other building materials such as concrete and steel.**

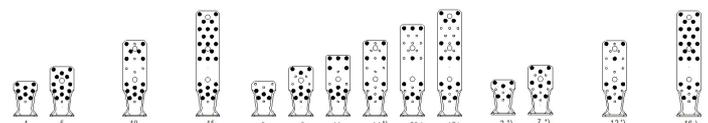


Fixation poutre sur dalle béton



Fixation d'équerre renforcée pour ossature bois avec SDS

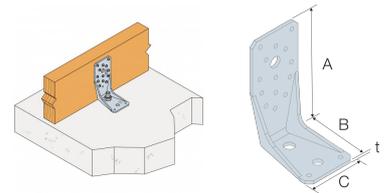
Équerres renforcées pour ossature bois AKR95X3L



AKRX3  
Angle bracket

## Technical Data

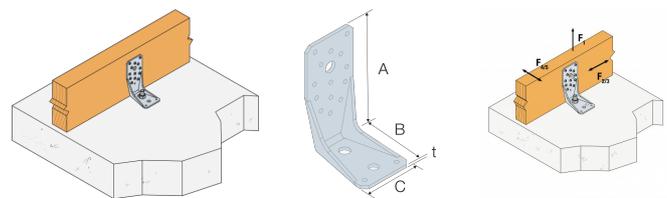
### Product Dimensions



References	Tun / DB nr.	NOB nr.	Product Dimensions [mm]										Box Quantity	Weight [kg]
			A	B	C	t	Joist		Holes flange B					
							Ø5	Ø13.5	Ø5	Ø11	Ø13.5	Ø13.5x25		
AKR95X3	1862225	51165902	95	85	65	3	9	-	2	1	1	-	25	0.24
AKR95X3L	1870243	-	95	85	65	3	9	-	2	1	-	1	25	0.24
AKR135X3	1859299	51165883	135	85	65	3	14	1	2	1	1	-	25	0.3
AKR135X3L	1870241	-	135	85	65	3	14	1	2	1	-	1	25	0.3
AKR165X3	-	-	165	85	65	3	15	1	2	1	1	-	25	0.37
AKR165X3L	-	-	165	85	65	3	15	1	2	1	-	1	25	0.37
AKR205X3	-	-	205	85	65	3	20	2	2	1	1	-	25	0.43
AKR205X3L	-	-	205	85	65	3	20	2	2	1	-	1	25	0.43
AKR245X3	-	-	245	85	65	3	22	2	2	1	1	-	25	0.49
AKR245X3L	-	-	245	85	65	3	22	2	2	1	-	1	25	0.49
AKR285X3	1862224	51165898	285	85	65	3	26	3	2	1	1	-	25	0.56
AKR285X3L	1870242	-	285	85	65	3	26	3	2	1	-	1	25	0.5

Below you will find load details to the nail pattern: fullnailing, partnailing and post connection. Further connection options, see the corresponding ETA.

Simplified characteristic capacities - Wood to concrete - Full nailing - 1 bracket per connection



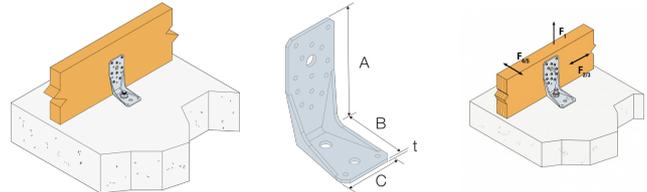
References	Number of Fasteners				Simplified characteristic capacities - 1 angle bracket per connection [kN]	
	Joist		Flange B		$R_{1,k}^{***}$	$R_{2,k} = R_{3,k}$
	Qty	Type	Qty	Type		
AKR95X3L	8	CNA4.0x50	1	Ø12**	8.7	2.8
AKR135X3L	13	CNA4.0x50	1	Ø12**	15.5	4.6
AKR285X3L	25	CNA4.0x50	1	Ø12**	15.3	4.4

\*\* The bolt design resistance requirement  $R_{#,d}$  is determined from (bolt factor x connection design load  $F_{#,d}$ ) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

\*\*\* The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) -  $k_{mod} = 1,1$ . For other load duration and service class, please refer to the ETA to get more accurate capacities

## AKRX3 Angle bracket

Simplified characteristic capacities - Wood to concrete - Partial nailing - 1 bracket per connection

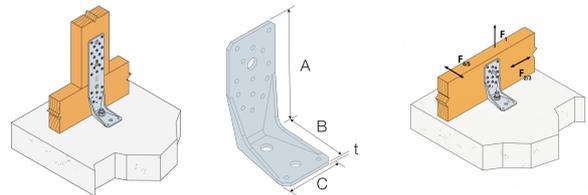


References	Number of Fasteners				Simplified characteristic capacities - 1 bracket per connection [kN]	
	Joist		Flange B		$R_{1,k}^{***}$	$R_{2,k} = R_{3,k}$
	Qty	Type	Qty	Type		
AKR95X3L	5	CNA4.0x50	1	Ø12**	5.1	3.6
AKR135X3L	9	CNA4.0x50	1	Ø12**	10.7	6.6
AKR285X3L	14	CNA4.0x50	1	Ø12**	13.2	5.5

\*\* The bolt design resistance requirement  $R_{\#,d}$  is determined from (bolt factor x connection design load  $F_{\#,d}$ ) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

\*\*\* The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) –  $k_{mod} = 1,1$ . For other load duration and service class, please refer to the ETA to get more accurate capacities

Simplified characteristic capacities - Post mounting to concrete - 1 bracket per connection



References	Number of Fasteners				Simplified characteristic capacities - 1 bracket per connection [kN]	
	Joist		Flange B		$R_{1,k}^{***}$	$R_{2,k} = R_{3,k}$
	Qty	Type	Qty	Type		
AKR95X3L	5	CNA4.0x50	1	Ø12**	5.8	3.9
AKR135X3L	8	CNA4.0x50	1	Ø12**	10.6	6.2
AKR285X3L	22	CNA4.0x50	1	Ø12**	13.2	5.6

\*\* The bolt design resistance requirement  $R_{\#,d}$  is determined from (bolt factor x connection design load  $F_{\#,d}$ ) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

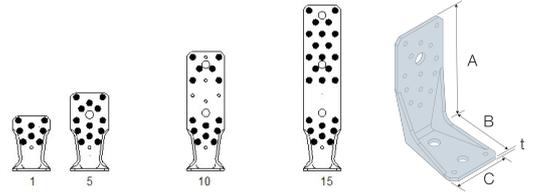
\*\*\* The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) –  $k_{mod} = 1,1$ . For other load duration and service class, please refer to the ETA to get more accurate capacities

# Technical data sheet



AKRX3  
Angle bracket

Characteristic capacities - Full nailing



References	Joist	Number of Fasteners				Characteristic capacities - 2 brackets per connection [kN]						
		Joist		Flange B		R <sub>1,k</sub>			R <sub>2,k</sub> = R <sub>3,k</sub>			R <sub>4,k</sub> = R <sub>5,k</sub>
		Qty	Type	Qty	Type	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40/50/60
AKR95X3	1	8	CNA*	1	Ø12*	min (17.55 ; 25.04/kmod + 13.2)	min (22.64 ; 25.04/kmod + 17.6)	min (26.48 ; 25.04/kmod + 22)	5	6.2	6.9	15.75 / kmod
AKR95X3L	1	8	CNA*	1	Ø12**	min (13.31 ; 25.04/kmod + 8.92)	min (17.4 ; 25.04/kmod + 11.89)	min (20.89 ; 25.04/kmod + 14.87)	4.4	5.6	6.4	-
AKR135X3	5	13	CNA*	1	Ø12**	min (31.78 ; 25.04/kmod + 8.69)	min (40.69 ; 25.4/kmod + 11.58)	min (46.92 ; 25.04/kmod + 14.48)	8	10.1	11.2	15.75 / kmod
AKR135X3L	5	13	CNA*	1	Ø12**	min (24.88 ; 25.04/kmod + 5.87)	min (32.34 ; 25.4/kmod + 7.83)	min (38.36 ; 25.04/kmod + 9.78)	7.2	9.1	10.4	-
AKR165X3	-	-	-	-	-	-	-	-	-	-	-	-
AKR165X3L	-	-	-	-	-	-	-	-	-	-	-	-
AKR205X3	10	14	CNA*	1	Ø12**	min (33.42 ; 25.04/kmod + 8.68)	min (42.86 ; 25.04/kmod + 11.58)	min (49.6 ; 25.04/kmod + 14.48)	7.8	10.1	11.8	15.75 / kmod
AKR205X3L	10	14	CNA*	1	Ø12**	min (25.96 ; 25.04/kmod + 5.86)	min (33.78 ; 25.04/kmod + 7.82)	min (40.2 ; 25.04/kmod + 9.78)	6.1	8	9.6	-
AKR245X3	-	-	-	-	-	-	-	-	-	-	-	-
AKR245X3L	-	-	-	-	-	-	-	-	-	-	-	-
AKR285X3	15	25	CNA*	1	Ø12**	min (45.25 ; 25.04/kmod + 8.69)	min (58.98 ; 25.04/kmod + 11.58)	min (70.31 ; 25.04/kmod + 14.48)	8.9	11.6	14.1	15.75 / kmod
AKR285X3L	15	25	CNA*	1	Ø12**	min (32.96 ; 25.04/kmod + 5.87)	min (43.42 ; 25.04/kmod + 7.83)	min (52.87 ; 25.04/kmod + 9.78)	6.6	8.7	10.7	-

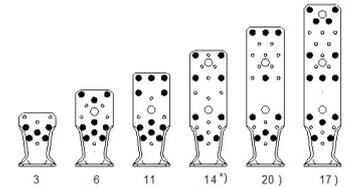
\* Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities vary depending on fastener type used.

\*\* The bolt design resistance requirement  $R_{\#,d}$  is determined from (bolt factor x connection design load  $F_{\#,d}$ ) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

# Technical data sheet



AKRX3  
Angle bracket



Characteristic capacities - Partial nailing

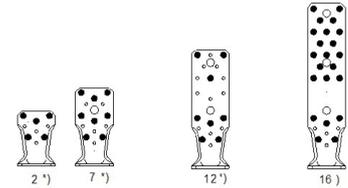
References	Joist	Number of Fasteners				Characteristic capacities - 2 brackets per connection [kN]						
		Joist		Flange B		R <sub>1,k</sub>			R <sub>2,k</sub> = R <sub>3,k</sub>			R <sub>4,k</sub> = R <sub>5,k</sub>
		Qty	Type	Qty	Type	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40/50/60
AKR95X3	3	5	CNA*	1	Ø12**	min (10.3 ; 25.04/kmod + 12.62)	min (13.34 ; 25.04/kmod + 16.82)	min (15.72 ; 25.04/kmod + 21.04)	3.2	4	4.5	15.75 / kmod
AKR95X3L	3	5	CNA*	1	Ø12**	min (7.7 ; 25.04/kmod + 8.52)	min (10.1 ; 25.04/kmod + 11.36)	min (12.18 ; 25.04/kmod + 14.22)	2.9	3.6	4.1	-
AKR135X3	6	9	CNA*	1	Ø12**	min (21.19 ; 25.04/kmod + 8.69)	min (27.21 ; 25.04/kmod + 11.58)	min (31.54 ; 25.04/kmod + 11.58)	5.9	7.5	8.4	15.75 / kmod
AKR135X3L	6	9	CNA*	1	Ø12**	min (16.39 ; 25.04/kmod + 5.87)	min (21.35 ; 25.04/kmod + 7.83)	min (25.45 ; 25.04/kmod + 9.78)	5.2	6.6	7.6	-
AKR165X3	11	11	CNA*	1	Ø12**	min (29.22 ; 25.04/kmod + 8.68)	min (37.14 ; 25.04/kmod + 11.58)	min (42.32 ; 25.04/kmod + 14.48)	7.1	9	10.4	15.75 / kmod
AKR165X3L	11	11	CNA*	1	Ø12**	min (23.62 ; 25.04/kmod + 5.86)	min (30.5 ; 25.04/kmod + 7.82)	min (35.76 ; 25.04/kmod + 9.78)	5.8	7.5	8.8	-
AKR205X3	14	8	CNA*	1	Ø12**	min (17.08 ; 25.04/kmod + 1.6)	min (22.08 ; 25.04/kmod + 2.14)	min (25.9 ; 25.04/kmod + 2.68)	5.5	7	8	15.75 / kmod
AKR205X3L	14	8	CNA*	1	Ø12**	min (12.86 ; 25.04/kmod + 1.08)	min (16.84 ; 25.04/kmod + 1.44)	min (20.28 ; 25.04/kmod + 1.82)	4.6	5.9	6.9	-
AKR245X3	20	9	CNA*	1	Ø12**	min (14.28 ; 25.04/kmod + 3.14)	min (18.7 ; 25.04/kmod + 4.18)	min (22.54 ; 25.04/kmod + 5.22)	5.7	7.4	8.8	15.75 / kmod
AKR245X3L	20	9	CNA*	1	Ø12**	min (10.22 ; 25.04/kmod + 2.12)	min (13.5 ; 25.04/kmod + 2.82)	min (16.54 ; 25.04/kmod + 3.52)	4.5	5.9	7.1	-
AKR285X3	17	14	CNA*	1	Ø12**	min (27.93 ; 25.04/kmod + 3.93)	min (36.23 ; 25.04/kmod + 5.24)	min (42.8 ; 25.04/kmod + 6.55)	5.5	7.3	8.8	15.75 / kmod
AKR285X3L	17	14	CNA*	1	Ø12**	min (20.71 ; 25.04/kmod + 2.66)	min (27.2 ; 25.04/kmod + 3.54)	min (32.91 ; 25.04/kmod + 4.43)	4.1	5.5	6.7	-

\* Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities vary depending on fastener type used.

\*\* The bolt design resistance requirement R<sub>#,d</sub> is determined from (bolt factor x connection design load F<sub>#,d</sub>) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

## AKRX3 Angle bracket

### Characteristic capacities - Post connection



References	Joist	Number of Fasteners				Characteristic capacities - 2 brackets per connection [kN]						
		Joist		Flange B		R <sub>1,k</sub>			R <sub>2,k</sub> = R <sub>3,k</sub>			R <sub>4,k</sub> = R <sub>5,k</sub>
		Qty	Type	Qty	Type	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40/50/60
AKR95X3	2	5	CNA*	1	Ø12**	min (11.5 ; 25.04/kmod + 5.97)	min (14.78 ; 25.04/kmod + 7.97)	min (17.19 ; 25.04/kmod + 9.96)	3.5	4.4	5	15.75 / kmod
AKR95X3L	2	5	CNA*	1	Ø12**	min (8.83 ; 25.04/kmod + 4.04)	min (11.52 ; 25.04/kmod + 5.38)	min (13.76 ; 25.04/kmod + 6.73)	3.1	3.9	4.5	-
AKR135X3	7	8	CNA*	1	Ø12**	min (20.49 ; 25.04/kmod + 3.93)	min (26.13 ; 25.04/kmod + 5.24)	min (29.94 ; 25.04/kmod + 6.55)	5.6	7	7.9	15.75 / kmod
AKR135X3L	7	8	CNA*	1	Ø12**	min (16.31 ; 25.04/kmod + 2.66)	min (21.13 ; 25.04/kmod + 3.54)	min (24.91 ; 25.04/kmod + 4.43)	4.9	6.2	7.1	-
AKR165X3	-	-	-	-	-	-	-	-	-	-	-	-
AKR165X3L	-	-	-	-	-	-	-	-	-	-	-	-
AKR205X3	12	8	CNA*	1	Ø12**	min (14.3 ; 25.04/kmod + 3.94)	min (18.64 ; 25.04/kmod + 5.24)	min (22.24 ; 25.04/kmod + 6.56)	4.8	6.2	7.2	15.75 / kmod
AKR205X3L	12	8	CNA*	1	Ø12**	min (10.4 ; 25.04/kmod + 2.66)	min (13.7 ; 25.04/kmod + 3.54)	min (16.68 ; 25.04/kmod + 4.42)	3.8	5	5.9	-
AKR245X3	-	-	-	-	-	-	-	-	-	-	-	-
AKR245X3L	-	-	-	-	-	-	-	-	-	-	-	-
AKR285X3	16	22	CNA*	1	Ø12**	min (41.66 ; 25.04/kmod + 3.93)	min (54.19 ; 25.04/kmod + 5.24)	min (64.34 ; 25.04/kmod + 6.55)	5.8	7.6	9.3	15.75 / kmod
AKR285X3L	16	22	CNA*	1	Ø12**	min (30.58 ; 25.04/kmod + 2.66)	min (40.23 ; 25.04/kmod + 3.54)	min (48.85 ; 25.04/kmod + 4.43)	4.2	5.6	6.9	-

# Technical data sheet



## AKRX3 Angle bracket

References	Joist	Number of Fasteners				Characteristic capacities - 2 brackets per connection [kN]						
		Joist		Flange B		R <sub>1,k</sub>			R <sub>2,k</sub> = R <sub>3,k</sub>			R <sub>4,k</sub> = R <sub>5,k</sub>
		Qty	Type	Qty	Type	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40/50/60

\* Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities vary depending on fastener type used.  
 \*\* The bolt design resistance requirement R<sub>#,d</sub> is determined from (bolt factor x connection design load F<sub>#,d</sub>) for the required load direction and fastener. Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

Factor for bolt calculation at 2 AKR connections

Load direction	k <sub>ax</sub>	k <sub>lat</sub>
F <sub>1</sub> Bolt 1 and 2	0,5	0
F <sub>2/3</sub> Bolt 1 and 2	0,2	0,5
F <sub>4/5</sub> Bolt 1 from F <sub>1,d</sub>	1	0
F <sub>4/5</sub> Bolt 2	0,5	1

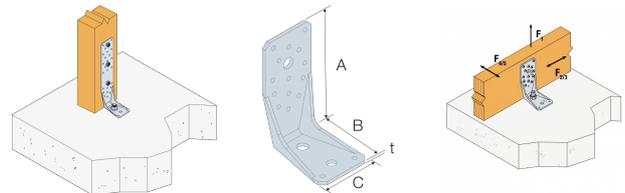
For load direction F<sub>4/5</sub> applies: An additional tensile load (F<sub>1,d</sub>) must be received and verified for the left AKR, and for both bolts.

$$F_{1,d}^* = \frac{F_{4/5,d} \times (e - 16,5mm)}{b + 83mm}$$

Combined load:

$$\sqrt{\left(\frac{F_{1,d}}{R_{1,d}} + \frac{F_{4/5,d}}{R_{4/5,d}}\right)^2 + \left(\frac{F_{2/3,d}}{R_{2/3,d}}\right)^2} \leq 1$$

Characteristic capacities - Timber beam to concrete - Ø12 connector screws - 1 angle bracket



References	Product capacities - Timber beam to rigid support - Ø12 connector screws - 1 angle bracket									
	Fasteners				Characteristic capacities - Timber C24 - 1 angle bracket per connection [kN]					
	Flange A		Flange B		R <sub>1,k</sub>			R <sub>2,k</sub> = R <sub>3,k</sub>		
	Qty	Type	Qty	Type	SSH12x80			SSH12x80		
AKR285X3L	3	SSH	1	Ø12	13.3			-		

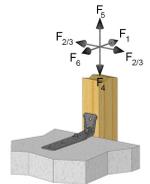
Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions are BOAXII, SET-XP, WA, AT-HP, depending on the concrete type, spacing and edge distances.

## AKRX3 Angle bracket

### Characteristic Capacities - UK

References	Fasteners		Characteristic Values - C24 Timber on Concrete [kN]			
	Flange A	Flange B	R <sub>1,k</sub>		R <sub>2,k</sub>	
	Qty	Qty	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60
AKR95X3L	5	1 x Ø12	5.7	6.8	2	2.3
AKR135X3L	8	1 x Ø12	10.5	12.4	3.1	3.6
AKR285X3L	22	1 x Ø12	13.1	13.6	2.8	3.5

The published characteristic capacity is based on short term load duration and service class 2 according to EC5 (EN 1995) – k<sub>mod</sub> = 1.1. For other load duration and service class, please refer to the ETA.



### Characteristic capacities - Timber post to concrete slab - 1 angle bracket

References	Product capacities - Timber post to concrete slab - 1 angle bracket									
	Fasteners				Nail pattern	Characteristic capacities				
	Flange A		Flange B			R <sub>1,k</sub>	R <sub>2,k</sub> = R <sub>3,k</sub>	R <sub>4,k</sub>	R <sub>5,k</sub>	R <sub>6,k</sub>
Qty	Type	Qty	Type							
AKR205X3L	-	-	2	Ø12	1	Ø10	22	6,1/kmod	0,4/kmod	5,4/kmod
AKR245X3L	-	-	2	Ø12	1	Ø10	22	6,1/kmod	0,4/kmod	5,4/kmod
AKR285X3L	15.3	4.4	2	Ø12	1	Ø10	22	6,1/kmod	0,4/kmod	5,4/kmod

Several assumptions are considered for the values shown in the table above (refer to ETA-07/0285 p 135 - Annex D61 - Characteristic Capacities for nailing pattern 22 - tables D61-11 to 15 for further details and other values) :

For R<sub>1,k</sub> capacities:

- Ø10 fastener in timber post (flange B) is placed in the upper hole => distance e between timber fasteners and AKR horizontal flange is 65 mm
- distance X1 between timber and concrete is 5 mm

For R<sub>2,k</sub>=R<sub>3,k</sub> capacities:

- Ø10 fastener in timber post (flange B) is placed in the upper hole => distance e between timber fasteners and AKR horizontal flange is 65 mm

For R<sub>4,k</sub> capacities:

- distance X1 between timber and concrete is 5 mm

For R<sub>6,k</sub> capacities:

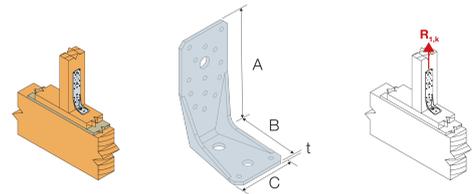
- Timber post width in contact with AKR is considered as 30 mm larger than the AKR width

# Technical data sheet



AKRX3  
Angle bracket

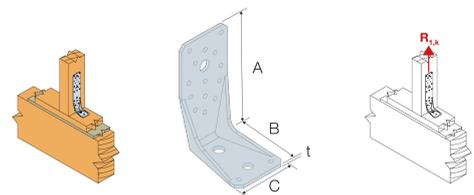
Simplified characteristic capacities - Timber to Timber -  
Partial nailing - 1 bracket per connection



References	Simplified characteristic capacities - Timber to timber - Partial nailing - 1 angle bracket [kN]						
	Fasteners				Characteristic capacities [kN]		Nail pattern
	Flange A		Flange B		$R_{1,k}^{***}$	$R_{2,k} = R_{3,k}$	
	Qty	Type	Qty	Type			
AKR95X3L	2	CNA4.0x50	1	SSH12.0	5.8	-	2
AKR135X3L	8	CNA4.0x50	1	SSH12.0	10.6	-	7
AKR285X3L	14	CNA4.0x50	1	SSH12.0	13.2	-	17

\*\*\* The published characteristic capacity is based on instantaneous load duration and service class 2 according to EC5 (EN 1995) –  $k_{mod} = 1,1$ . For other load duration and service class, please refer to the ETA to get more accurate capacities. The capacity of SSH12.0 screw has to be checked.

Simplified Characteristic capacities - Timber post to  
timber - 1 angle bracket



References	Simplified characteristic capacities - Post to timber - 1 angle bracket						
	Fasteners					Characteristic capacities	Nail pattern
	Flange A		Flange B			$R_{1,k}^{***}$ [kN]	
	Qty	Type	Qty	Type	Thread length in support [mm]		
AKR95X3L	5	CNA4.0X50	1	SSH12.0	85	5.8	2
AKR135X3L	8	CNA4.0X50	1	SSH12.0	85	10.6	7
AKR285X3L	14	CNA4.0X50	1	SSH12.0	110	13.2	17

The connection can be made with a gap between the bottom flange of the bracket and timber, but the whole threaded part of the screw shall be in the substructure.

The connection is redundant, the full capacity of the screw may be considered. If the connection is isolated, then half the capacity of the screw shall be considered for AKR135X3L and AKR285X3L.

\*\*\* The published characteristic capacity is based on instantaneous load duration and service class 1 according to EC5 (EN 1995) –  $k_{mod} = 1,1$ . For other load duration and service class, please refer to the ETA to get more accurate capacities.

AKRX3  
**Angle bracket**

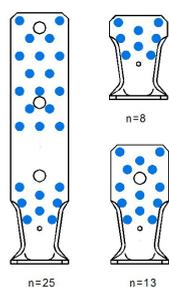
## Installation

### Fasteners

- The fixing needs to be done with CNA4,0xl threaded nails or CSA5,0xl screws.
- On concrete or steel by an wedge anchor M12 and a washer Ø24.
- SSH Ø 12 x 80 mm (timber to concrete)
- It is possible to single or double sided connections.

### Installation

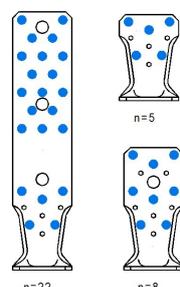
- **Fasten nails or screws CNA4,0xl CSA5,0xl.Pro installation in concrete anchor bolt M12**



All holes filled.



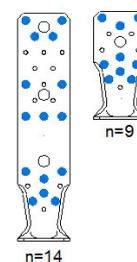
Fixation poutre sur dalle béton



Clouage sur poteau



Fixation d'équerre renforcée pour ossature bois avec SDS



Partial nailing

AKRX3  
**Angle bracket**

