Technical data sheet

ABR
ABR 170

Suitable for joints where you need a larger load, angle of ribs.
material

Features

Material

Steel grade:

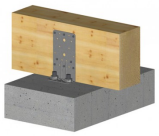
S250GD + Z275 according to DIN EN10346

Corrosion protection:

275 g / m galvanized on both sides 20mm

Benefits

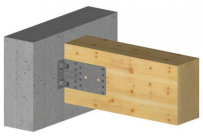
- **High levels of load in three directions**
- **optimized use of nails needed to install**
- **suitable for connection to the concrete**

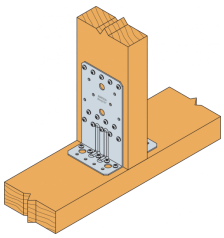


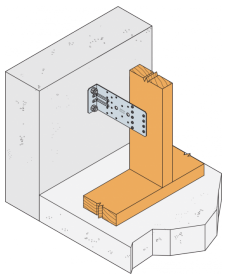
Applications

Applicable materials

Wood, wood products, concrete, steel







Application area

• For connections of intersecting beams, purlins and rafters joint, as a substitute for a joist hanger, upper nail 160 mm, concrete screw M10
Values for joint wood and wood, two connections
**** Choose the largest number of nails for combined loads**

**** R4 / 5 s b> e 60 mm and <90 mm. For further dimensions b and e, viz. ETA**

***** R4 / 5 with b> 60 mm and e <150 mm. For further dimensions b and e, viz.ETA**
Values for wood and concrete joint, two connecting
Screws are sold separately.

Load for each pair of screws at an angle are:

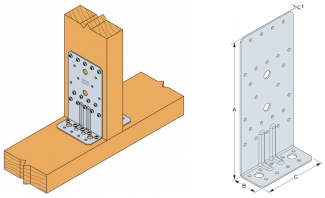
Technical data sheet

ABR
ABR 170

SIMPSON Strong-Tie

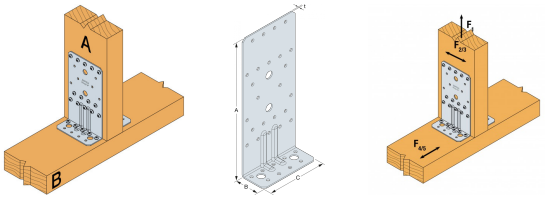
Technical Data

Product Dimensions



References	Tun / DB nr.	NOB nr.	Dimensions and drill holes [mm]				Joist		Holes flange B		Box Quantity	Weight [kg]
			B	C	A	t	Ø5	Ø12	Ø5	Ø12		
ABR170	1611299	46163812	170	40	95	2	20	2	9	2	25	0.28
ABR220	1805973	51165872	220	40	95	2	24	2	9	2	25	0.35

Characteristic capacities - timber to timber

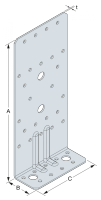


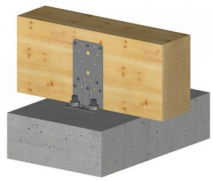
References	Product capacities - Timber to timber - Full nailing											
	Number of Fasteners		Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]									
	Joist	Flange B	$R_{1.k}$			$R_{2/3.k}$			$R_{4/5.k}$			
	Qty	Qty	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	
ABR170	14	9	7.4	min (9,8 ; 9,4/ kmod)	min (12,3 ; 11,3/ kmod^0,35)	16.4	19.7	21.1	9.6/kmod^0.2	9.6/kmod^0.2	9.6/kmod^0.2	
ABR220	14	9	7.4	min (9,8 ; 9,4/ kmod)	min (12,3 ; 11,3/ kmod^0,35)	16.4	19.7	21.1	9.6/kmod^0.2	9.6/kmod^0.2	9.6/kmod^0.2	

In cases, where the load direction F_1 and/or F_2 are acting without load direction $F_{4/5}$, the number of nails can be reduce acc. to the ETA.

Technical data sheet

ABR
ABR 170

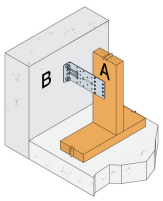


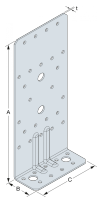


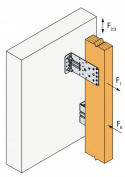
Characteristic capacities - timber to concrete

References	Product capacities - Timber to Concrete												
	Number of Fasteners				Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]								
	Joist		Flange B		$R_{1.k}$			$R_{2/3.k}$			$R_{4/5.k}$		
	Qty	Type	Qty	Type	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x40	CNA4.0x50	CNA4.0x60
ABR170	14	CNA	2	Ø10	min. (33.0 ; 25.2/kmod)	min. (39.8 ; 25.2/kmod)	25.2/kmod	19.7	min. (23.8 ; 24.6/kmod)	min. (25.4 ; 24.6/kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)
ABR220	14	CNA	2	Ø10	min. (33.0 ; 25.2/kmod)	min. (39.8 ; 25.2/kmod)	25.2/kmod	19.7	min. (23.8 ; 24.6/kmod)	min. (25.4 ; 24.6/kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)	min (9.15 + 80/e*kmod ; 6.3*b / e*kmod)

For calculation of $R_{4/5}$, it is to use: e ≥ 50 mm







Characteristic capacities - timber to facade

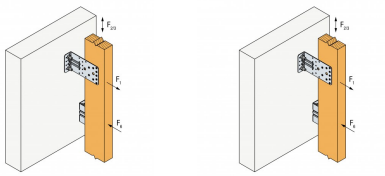
References	Product capacities - timber to concrete / fassade													
	Fastener				Product capacities, beam to facade, full nailing, 1 ABR per connection [kN]									
	Joist		Flange B		$R_{1.k}$				$R_{2/3.k}$					
	Qty	Type	Qty	Type	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4
ABR170	9	CNA	2	M10	10.2	min. (11,8 ; 12,1/kmod)	min.(14,9 ; 12,1/kmod)	min. (16,9 ; 12,1/kmod)	3.5	3.8	4.7	4.9	min. (14,9; 11,0/kmod)	min. (11,0/
ABR220	9	CNA	2	M10	min. (14,3 ; 12,1/kmod)	min. (15,9 ; 12,1/kmod)	min. (19,4 ; 12,1/kmod)	min. (20,6 ; 12,1/kmod)	2.7	2.9	3.6	3.7	min. (14,9; 9,0/kmod)	min. (9,0/k

The capacities are given for one ABR, in the case, that in total more ABR are placed alternate opposite on the b
It's given the option to fix the ABR with only one bolt (the upper one) for only the load in direction F_1 and F_6, the
this case the half.
The distance of the beam to the support shall be less than 132 mm for ABR220, and less than 86 mm for ABR1

Technical data sheet

ABR
ABR 170

Allowable capacities - Timber to facade - CSTB Cahier 3316



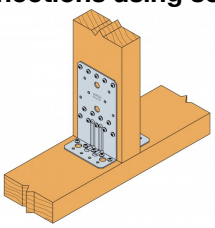
References	Product allowable capacities - Timber to Concrete - CSTB Cahier 3316						
	Fasteners				Product capacities, beam to facade, full nailing, 1 ABR per connection [daN]		
	Flange A		Flange B		$R_{1,d}$	$R_{2/3,d}$	
	Qty	Type	Qty	Type		1 mm	3 mm
ABR170	9	CSA	1	M10	450	67.7	76.3
ABR220	9	CSA	1	M10	450	33.3	80

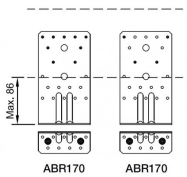
The capacities are given for one ABR, in the case, that in total more ABR are placed alternate opposite on the beam.
Only the upper bolt has to be installed on the ABR.
The distance of the beam to the support shall be less than 132 mm for ABR220, and less than 86 mm for ABR170.

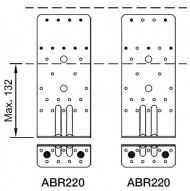
Installation

Installation

- **connections using screws or nails CSA5,0xl CNA4,0xl**







Technical Notes

Technical info

Particular situation with two angle brackets per assembly positioned opposite to each other
F1 Continious force in the central axis of the purlin.
F2 and F3 Lateral force that works between the purlin and the beam in the purlin direction.
F4 and F5 Lateral force that works in the center of the angle brackets in the beam direction positioned e above the beam.
Particular situation with only one angle bracket per assembly
F1 Continious force in the central axis of the purlin with a distance f between the vertical contact surface. If the overall structure prevents the rotation of the purlin or the post, the tensile strength is equal to half of the given value for two angle-brackets.
F2 and F3 Lateral force that works between the purlin and the beam in the purlin direction.
F4 Lateral force that works in the center of the angle brackets in the beam direction. Works towards the bracket positioned e above the beam.
F5 Lateral force that works in the center of the angle brackets in the beam direction. Works away from the bracket positioned e above the beam.