

Vhodný pro spoje, kde je třeba většího zatížení,  
úhelník je opařen žebry.

## Features

### Materiál

**Kvalita oceli:**

**S250GD+Z275 dle norem DIN EN10346**

**Ochrana proti korozi:**

**275 g/m pozinkováno z obou stran cca 20mm**

### Vorteile

- Vysoké hodnoty zatížení ve třech směrech os
- optimalizované použití počtu hřebíků nutných k instalaci
- vhodné i pro spojení do betonu

## Applications

### Anwendbare Materialien

**Dřevo, dřevěné materiály, beton, ocel**

### Anwendungsbereich

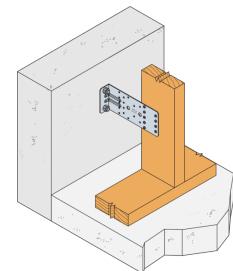
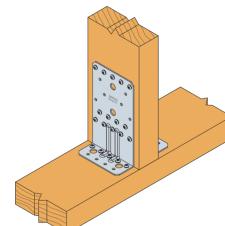
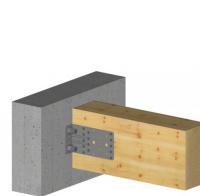
- Pro spoje protínajících nosníků, spoje vaznice a krokve, jako náhrada za trámový závěs, horní hřebík 160 mm, do betonu šroub M10



ABR170

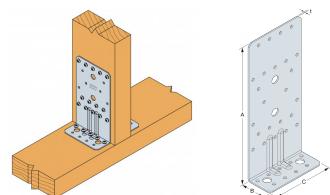


ABR220



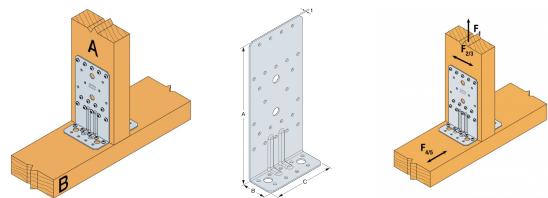
## Technical Data

Rozměry a typické hodnoty



Art. nr.	Rozměry [mm]				Příruba A		Hlava		Box Quantity	Hmotnost [kg]
	A	B	C	t	Ø5	Ø12	Ø5	Ø12		
ABR170	170	40	95	2	20	2	9	2	25	0.28
ABR220	220	40	95	2	24	2	9	2	25	0.35

Hodnoty pro spoj dřevo a dřevo, dvě napojení



Art. nr.	Product capacities - Timber to timber - Full nailing									
	Upevňovací prvky		Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]							
	Příruba A	Hlava	R <sub>1,k</sub>				R <sub>2/3,k</sub>		R <sub>4/5,k</sub>	
Množství	Množství	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	
ABR170	14	9	min (9,8 ; 9,4/ kmod)	min (12,3 ; 11,3/ kmod^0,35)	19.7	21.1	9.6/kmod^0,2	9.6/kmod^0,2		
ABR220	14	9	min (9,8 ; 9,4/ kmod)	min (12,3 ; 11,3/ kmod^0,35)	19.7	21.1	9.6/kmod^0,2	9.6/kmod^0,2		

\*\* Vyberte největší počet hřebů pro kombinované zátěže

\*\*\*R4/5 s b &gt; 60mm a e &lt; 90mm. Pro další rozměry b a e, viz. ETA

\*\*\*\*R4/5 s b &gt; 60mm a e &lt; 150mm. Pro další rozměry b a e, viz.ETA

Kombinované výpočty:

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

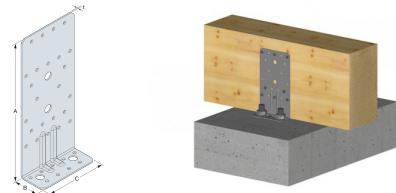
# Technický list

ABR  
Úhelník

SIMPSON

Strong-Tie®

Hodnoty pro spoj dřevo a beton, dvě napojení



Art. nr.	Product capacities - Timber to Concrete									
	Upevňovací prvky				Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]					
	Příruba A		Hlava		R <sub>1,k</sub>		R <sub>2/3,k</sub>		R <sub>4/5,k</sub>	
Množství	Typ	Množství	Typ	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	
ABR170	14	CNA	2	Ø10	min. (39.8 ; 25.2/kmod)	25.2/kmod	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)
ABR220	14	CNA	2	Ø10	min. (39.8 ; 25.2/kmod)	25.2/kmod	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)

Kombinované výpočty:

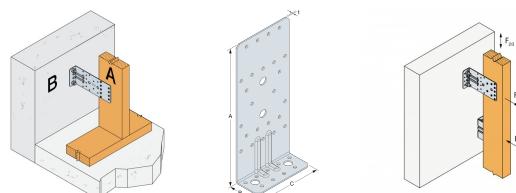
$$\sqrt{\left(\frac{F_{1,d}}{R_{1,d}} + \frac{F_{4/5,d}}{R_{4/5,d}}\right)^2 + \left(\frac{F_{2/3,d}}{R_{2/3,d}}\right)^2} \leq 1$$

Šrouby jsou prodávány samostatně.

Zatištění pro každou dvojici šroubů v úhlu jsou:

pro R_1:	R_bolt,ax,d ≥ F_1,d / 2
pro R_2/3:	R_bolt,ax,d ≥ F_2/3,d / 2
pro R_4/5:	
Šroub 1:	R_bolt,ax,d ≥ F_4/5,d * e / b
Šroub 2:	R_bolt,lat,d ≥ F_4/5,d
a:	R_4/5,d ≥ R_1,d * b / (2*e)

Characteristic capacities - timber to facade



Art. nr.	Product capacities - timber to concrete / facade									
	Anzahl der Befestigungsmittel				Product capacities, beam to facade, full nailing, 1 ABR per connection [kN]					
	Příruba A		Hlava		R <sub>1,k</sub>		R <sub>2/3,k</sub>		R <sub>6,k</sub>	
Množství	Typ	Množství	Typ	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	CNA4.0x50	CNA4.0x60	
ABR170	9	CNA	2	M10	min.(14,9 ; 12,1/kmod)	min. (16,9 ; 12,1/kmod)	4.7	4.9	min. (20; 11,0/kmod)	min. (21,1; 11,0/kmod)
ABR220	9	CNA	2	M10	min. (19,4 ; 12,1/kmod)	min. (20,6 ; 12,1/kmod)	3.6	3.7	min. (20; 9,0/kmod)	min. (21,1; 9,0/kmod)

The capacities are given for one ABR, in the case, that in total more ABR are placed alternate opposite on the beam.

It's given the option to fix the ABR with only one bolt (the upper one) for only the load in direction F<sub>1</sub> and F<sub>6</sub>, the capacity for F<sub>1</sub> is in 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 ABR170.

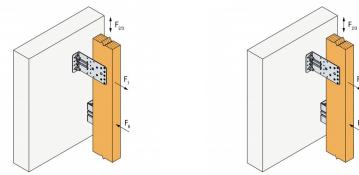
# Technický list

ABR  
Úhelník

SIMPSON

Strong-Tie®

Allowable capacities - Timber to facade - CSTB Cahier 3316



Art. nr.	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 <sub>1,d</sub>	R <sub>2/3,d</sub>		
	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.

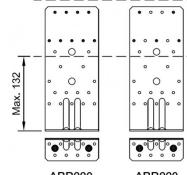
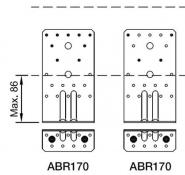
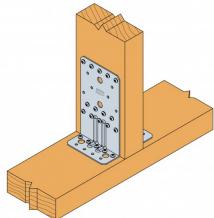
Only the upper bolt has to be installed on the ABR.

The distance of the beam to the support shall be less than 132 mm for ABR220, and less than 86 mm for ABR170.

## Installation

### Befestigung

- připojení pomocí šroubů CSA5,0x1 nebo hřebíky CNA4,0x1



## 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.

