

## ABR-Z Reinforced angle brackets

*Reinforced angle brackets are suitable for structural applications in framing and timber framed houses as well as light gauge steel construction.*

### Features

#### Material

- **Steel grade:**
  - ABR9020Z Stal S250GD + Zpro according to EN 10346
  - ABR7015Z and ABR10525Z Steel S350GD + Zpro according to EN 10346
- **Anti-corrosion protection:**  
ZPRO coating - corresponding to a zinc layer thickness of approx. 55 µm

#### Benefits

- Reinforcing ribs provide enhanced performance.

### Applications

#### Suitable On

- **Supporting member:** solid wood, glued-laminated wood, concrete, steel, etc.
- **Supported member:** solid wood, composite lumber, glued-laminated wood, triangular trusses, profiles, etc.

#### When to Use

- Fastening of small trusses.
- Cladding plates, cladding uprights.
- Rafter anchors, cantilevers, headers, etc.
- Light gauge steel.



ABR7015Z



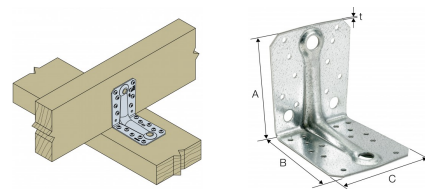
ABR9020Z



ABR10525Z

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## Technical Data



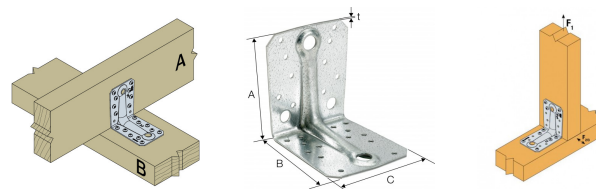
### Product Dimensions

References	Tun / DB nr.	NOB nr.	Product Dimensions [mm]				Joist				Holes flange B				Box Quantity
			A	B	C	t	Ø5	Ø7	Ø11	Ø14	Ø5	Ø9	Ø13	Ø14	
ABR7015Z	2048395	55360480	70	70	55	1.5	8	1	-	-	8	1	-	-	50
ABR9020Z	1938737	52950361	88	88	65	2	10	-	1	-	10	-	1	-	50
ABR10525Z	2048396	55360514	105	105	90	2.5	10	-	2	1	14	-	-	1	50

### For combined loads:

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

### Capacities wood-wood connection - Full Nailing



References	Product capacities - Timber to timber - Maximum nailing										
	Number of Fasteners		Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]								
	Joist Qty	Flange B Qty	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>		
			CNA4.0x35	CNA4.0x40	CNA4.0x60	CNA4.0x35	CNA4.0x40	CNA4.0x60	CNA4.0x35	CNA4.0x40	CNA4.0x60
ABR7015Z	6	8	5.2	6.1	-	6.7	7.3	-	4.2 /kmod <sup>0,3</sup>	4.8 /kmod <sup>0,3</sup>	-
ABR9020Z	8	10	9.7	10.8	14.9	9.4	10.3	13	4.6 /kmod <sup>0,7</sup>	4.9 /kmod <sup>0,7</sup>	5.8 /kmod <sup>0,6</sup>
ABR10525Z	10	14	12.7	17.2	29.5	10.7	12.2	19.7	10.6/kmod <sup>0,2</sup>	11.5 /kmod <sup>0,4</sup>	13.1 /kmod <sup>0,8</sup>

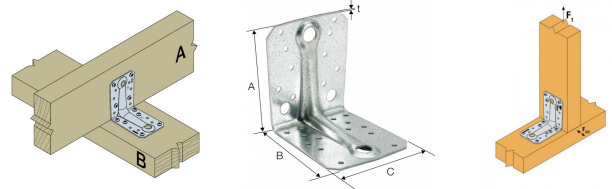
R 4/5 with b=75mm and e=130mm

# Technical data sheet



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Capacities wood-wood connection /  
partialnailing



### Product capacities - Timber to timber - Partial nailing

References	Number of Fasteners		Characteristic capacities - Timber C24 - 2 angle brackets per connection [kN]								
	Joist	Flange B	$R_{1,k}$			$R_{2,k} = R_{3,k}$			$R_{4,k} = R_{5,k}$		
	Qty	Qty	CNA4.0x35	CNA4.0x40	CNA4.0x60	CNA4.0x35	CNA4.0x40	CNA4.0x60	CNA4.0x35	CNA4.0x40	CNA4.0x60
ABR9020Z	4	6	4.9	5.9	9.8	5.9	6.4	8.1	4.6 /kmod <sup>0,6</sup>	4.8 /kmod <sup>0,7</sup>	5.8/kmod <sup>0.6</sup>
ABR10525Z	6	6	4.8	5.7	9.5	9.7	10.6	14.3	Refer to ETA-06/0106	Refer to ETA-06/0106	Refer to ETA-06/0106

R 4/5 with b=75mm and e=130mm

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## Installation

### Fixing

#### **On wood:**

- CNA annular ring-shank nails dia. 4.0 x 35 or dia. 4.0 x 50 mm.
- CSA screws dia. 5.0 x 35 mm or CSA screws dia. 5.0 x 40 mm.
- Bolts.
- LAG screws.

#### **On concrete:**

##### **Concrete substrate**

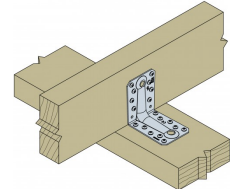
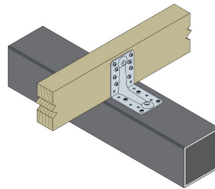
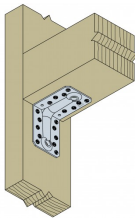
- *Mechanical anchor:* WA M10-78/5 OR WA M12-104/5 pin.
- *Chemical anchor:* AT-HP resin + LMAS M10-120/25 or LMAS M12-150/35 threaded rod.

##### **Hollow masonry substrate:**

- *Chemical anchor:* AT-HP or POLY-GP resin + LMAS M12-150/35 threaded rod + SH M16-130 screen.

#### **On steel:**

- Bolts.



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## Technical Notes

### Technical Notes

**F1: tensile force in the central axis of the angle-bracket****Particular situation of a fastening with only one angle-bracket:**

- 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.
- Otherwise, the connection resistance depends on the « f » distance between the vertical contact surface and the point of load application.

**F2 and F3: shear lateral force****Particular situation of a connection with only one angle-bracket:**

- The resistance value to consider is equal to half of the one given for two angle-brackets.

**F4 and F5: transversal force directed towards or opposite the angle-bracket**

- The connection resistance depends on the « e » distance between the base of the angle-bracket and the point of load application.
- To consult corresponding loads, contact us.

***Only F1, F2 and F3 forces for connections with 2 angle-brackets are present on this sheet.  
For more information, contact us.***

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