Technical Sheet

ACRL
Reinforced Angle bracket

Reinforced angle brackets ACRL 10520 are suitable for structural applications in framing and wood-frame houses. The oblong holes on each aisle allos a lateral adjustment.



Features

Material

Pre-galvanised mild steel.

Benefits

- Load capacity for shear and tension
- Sveral possible configuration
- Lateral adjustment

Applications

Members

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

Applications

- Fastening of small trusses.
- Rafter anchors, cantilevers, headers, etc.



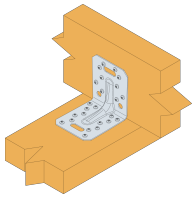
Équerre renforcée ACRL10520

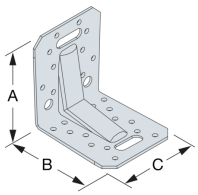
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Technical Data

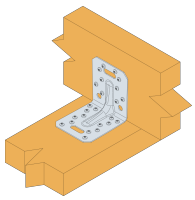
Product Dimensions

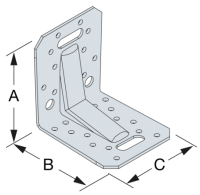


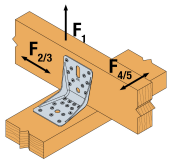


Reference	Connector Dimensions									
	Product Dimensions[mm]				Joist[mm]			Flange B[mm]		Other
	A[mm]	B[mm]	C[mm]	Thickness[mm]	Round		Obround	Round	Obround	Weight[kg]
					Ø5[mm]	Ø11[mm]	Ø11x31	Ø5[mm]	Ø11x31	
ACRL10520	105	105	90	2	10	2	1	14	1	0.27

Wood/wood connection beam/beam type - assembly with 2 angle brackets







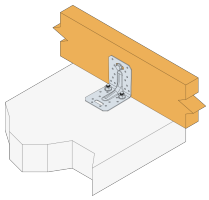
Reference	Angle bracket capacity					
	Product capacities - Timber to timber - Full nailing					
	Number of Fasteners		Characteristic capacity - 2 angle brackets per connection - full nailing[kN]			
	Joist	Flange B	$R_{1,k}$		$R_{2,k}=R_{3,k}$	
	Qty	Qty	CNA4.0x35	CNA4.0x50	CNA4.0x35	CNA4.0x50
ACRL10520	14.0	10.0	13.4	14.3	12.8	18.4

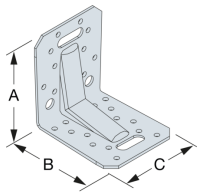
To obtain the resistance values for a single bracket, the values in the above table should be divided by two, provided that the supported beam is locked in rotation. Please consult our ETA-06/0106 if the beam is free to rotate.

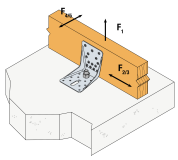
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Characteristic capacities - Timber to rigid support - Connection with 2 brackets







Reference	Angle bracket capacity							
	Product capacities - Timber to Concrete							
	Number of Fasteners				Characteristic capacity - 2 angle brackets per connection - full nailing[kN]			
	Joist		Flange B		$R_{1,k}$		$R_{2,k}=R_{3,k}$	
	Qty	Type	Qty	Type	CNA4.0x35	CNA4.0x50	CNA4.0x35	CNA4.0x50
ACRL10520	2	Ø10	10	CNA*	24.1	28.5	10.8	14.2

* 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 depend on the concrete type, spacing and edge distances.
To obtain the resistance values for a single bracket, the values in the above table should be divided by two, provided that the supported beam is locked in rotation. Please consult our ETA-06/0106 if the beam is free to rotate.

Installation

Fasteners

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.
- Chemical anchor: AT-HP resin + LMAS M10-120/25

Hollow masonry substrate:

- Chemical anchor: AT-HP or POLY-GP resin + LMAS M12-120/25 threaded rod + SH M16-130 screen.

On steel:

- Bolts diam. 10 mm

Installation

1. Come with the joist,
2. Add nails. It can be also screwed,
3. If the header is made out of timber, the angle bracket can be attached to it with nails or screw,
4. If the header is made out of concrete, the angle bracket must be attached with adapted anchors (using the installation data from the anchor)

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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