

# Technical Sheet

**SIMPSON**

**Strong-Tie**

ABR255

## Angle Bracket for CLT

*The ABR255 angle bracket is developed for CLT construction. It can be used on timber or concrete support. Flexible, it is designed for shear loading.*

## Features

### Materiál

#### Kvalita oceli:

- S 250 GD+Z 275 dle norem DIN EN

#### Ochrana proti korozi:

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

### Vorteile

- Perfect for CLT building
- Versatile: can be used on timber and concrete support
- Superior performance for forces in horizontal ( $F_2/F_3$ ) and vertical directions ( $F_1$ )

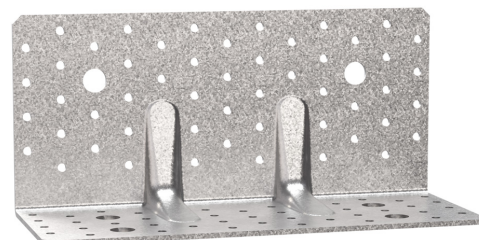
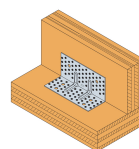
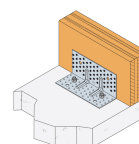
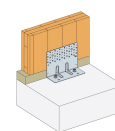
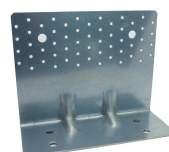
## Applications

### Anwendbare Materialien

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

### Anwendungsbereich

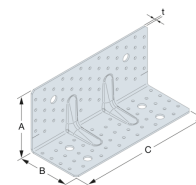
- Solid timber panels,
- CLT panels.



## ABR255 Angle Bracket for CLT

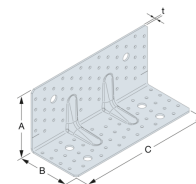
### Technical Data

Rozměry a typické hodnoty



| Reference | konektor rozměry   |              |                     |       |       |              |            |         |               |         |
|-----------|--------------------|--------------|---------------------|-------|-------|--------------|------------|---------|---------------|---------|
|           | ostatní            |              | rozměry výrobku[mm] |       |       |              | nosník[mm] |         | příruba B[mm] |         |
|           | množství v krabici | hmotnost[kg] | A[mm]               | B[mm] | C[mm] | tloušťka[mm] | kulatý     |         | kulatý        |         |
|           |                    |              |                     |       |       |              | Ø5[mm]     | Ø14[mm] | Ø5[mm]        | Ø14[mm] |
| ABR255    | 10.0               | 1.2          | 120                 | 100   | 255   | 3            | 52         | 2       | 41            | 4       |
| ABR255S0  | 10.0               | 1.7          | 200                 | 100   | 255   | 3            | 56         | 2       | -             | 4       |

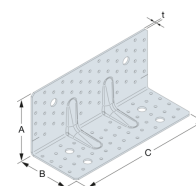
Product characteristic capacities - Timber to timber - 1 angle bracket - Full nailing - Nailing pattern 1



| Reference | úhelník únosnost                                                       |           |                                                                      |           |                            |                            |
|-----------|------------------------------------------------------------------------|-----------|----------------------------------------------------------------------|-----------|----------------------------|----------------------------|
|           | výrobek capacities - dřevo to dřevo - Full nailing - Nailing pattern 1 |           |                                                                      |           |                            |                            |
|           | počet of Fasteners                                                     |           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |           |                            |                            |
|           | nosník                                                                 | příruba B | R <sub>2,k</sub> =R <sub>3,k</sub>                                   |           | R <sub>1,k</sub>           |                            |
|           |                                                                        |           | CNA4.0x50                                                            | CNA4.0x60 | CNA4.0x50                  | CNA4.0x60                  |
| ABR255    | 52.0                                                                   | 41.0      | 45.9                                                                 | 50.5      | 19,5 / kmod <sup>0,4</sup> | 22,5 / kmod <sup>0,4</sup> |

The value in the table above can be used if the panel can't rotate.

Product characteristic capacities - Timber to timber - 1 angle bracket - Partial nailing - Nailing pattern 2

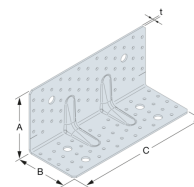


| Reference | úhelník únosnost                                                          |           |                                                                      |                            |                                    |           |
|-----------|---------------------------------------------------------------------------|-----------|----------------------------------------------------------------------|----------------------------|------------------------------------|-----------|
|           | výrobek capacities - dřevo to dřevo - Partial nailing - Nailing pattern 2 |           |                                                                      |                            |                                    |           |
|           | počet of Fasteners                                                        |           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |                            |                                    |           |
|           | nosník                                                                    | příruba B | R <sub>1,k</sub>                                                     |                            | R <sub>2,k</sub> =R <sub>3,k</sub> |           |
|           |                                                                           |           | CNA4.0x50                                                            | CNA4.0x60                  | CNA4.0x50                          | CNA4.0x60 |
| ABR255    | 30.0                                                                      | 23.0      | 16,5 / kmod <sup>0,4</sup>                                           | 19,5 / kmod <sup>0,4</sup> | 38                                 | 42.1      |

The value in the table above can be used if the panel can't rotate.

## ABR255 Angle Bracket for CLT

Product characteristic capacities - Timber to timber - 1 angle bracket -  
Partial nailing - Nailing pattern 4

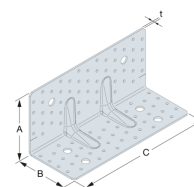


| Reference | úhelník únosnost                                                          |           |                          |                          |                    |           |
|-----------|---------------------------------------------------------------------------|-----------|--------------------------|--------------------------|--------------------|-----------|
|           | výrobek capacities - dřevo to dřevo - Partial nailing - Nailing pattern 4 |           |                          |                          |                    |           |
|           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN]      |           |                          |                          | počet of Fasteners |           |
|           | $R_{2,k}=R_{3,k}$                                                         |           | $R_{1,k}$                |                          | nosník             | příruha B |
|           | CNA4.0x50                                                                 | CNA4.0x60 | CNA4.0x50                | CNA4.0x60                | množství           | množství  |
| ABR255    | 28.6                                                                      | 31.4      | 15,6/kmod <sup>0,4</sup> | 18,1/kmod <sup>0,4</sup> | 24.0               | 21.0      |

The value in the table above can be used if the panel can't rotate.

Nailing pattern 4 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

Product characteristic capacities - Timber to timber - 1 angle bracket -  
Partial nailing - Nailing pattern 5



| Reference | úhelník únosnost                                                          |  |             |  |                    |           |
|-----------|---------------------------------------------------------------------------|--|-------------|--|--------------------|-----------|
|           | výrobek capacities - dřevo to dřevo - Partial nailing - Nailing pattern 5 |  |             |  |                    |           |
|           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN]      |  |             |  | počet of Fasteners |           |
|           | $R_{2,k}=R_{3,k}$                                                         |  | $R_{1,k}$   |  | nosník             | příruha B |
|           | CSA5.0x50                                                                 |  | CSA5.0x50   |  | množství           | množství  |
| ABR255    | 51.7                                                                      |  | 23,6 / kmod |  | 46.0               | 41.0      |

The value in the table above can be used if the panel can't rotate.

Nailing pattern 5 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

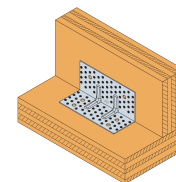
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## Angle Bracket for CLT

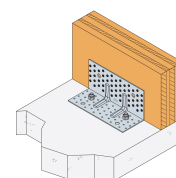


Product characteristic capacities - Timber to timber - 1 angle bracket  
- Partial nailing - Nailing pattern 6

| Reference | úhelník únosnost                                                          |           |                                                                      |           |                  |           |
|-----------|---------------------------------------------------------------------------|-----------|----------------------------------------------------------------------|-----------|------------------|-----------|
|           | výrobek capacities - dřevo to dřevo - Partial nailing - Nailing pattern 6 |           |                                                                      |           |                  |           |
|           | počet of Fasteners                                                        |           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |           |                  |           |
|           | nosník                                                                    | příruba B | R <sub>2,k</sub> =R <sub>3,k</sub>                                   |           | R <sub>1,k</sub> |           |
|           | množství                                                                  | množství  | CNA4.0x50                                                            | CNA4.0x60 | CNA4.0x50        | CNA4.0x60 |
| ABR255    | 32.0                                                                      | 21.0      | 36.1                                                                 | 39.2      | -                | -         |

The value in the table above can be used if the panel can't rotate.

Nailing pattern 6 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

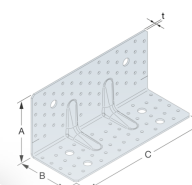


Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Full nailing - Nailing pattern 1

| Reference | úhelník únosnost                                                       |     |          |     |                                                                      |           |                                    |                        |
|-----------|------------------------------------------------------------------------|-----|----------|-----|----------------------------------------------------------------------|-----------|------------------------------------|------------------------|
|           | výrobek capacities - dřevo to beton - Full nailing - Nailing pattern 1 |     |          |     |                                                                      |           |                                    |                        |
|           | počet of Fasteners                                                     |     |          |     | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |           |                                    |                        |
|           | příruba B                                                              |     | nosník   |     | R <sub>1,k</sub>                                                     |           | R <sub>2,k</sub> =R <sub>3,k</sub> |                        |
|           | množství                                                               | typ | množství | typ | CNA4.0x50                                                            | CNA4.0x60 | CNA4.0x50                          | CNA4.0x60              |
| ABR255    | 2.0                                                                    | Ø12 | 52.0     | CNA | 22 / kmod                                                            | 22 / kmod | min (45,3 ; 42,9/kmod)             | min (49,2 ; 42,9/kmod) |
| ABR255S0  | 2.0                                                                    | Ø12 | 56.0     | CNA | 22,9/kmod                                                            | 22,9/kmod | 38.6                               | -                      |

The value in the table above can be used if the panel can't rotate.

The anchors must be checked separately using tension value of 1.1\*F<sub>1</sub>, 1\*F<sub>2</sub> and 1.1\*F<sub>5</sub>



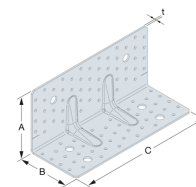
Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Partial nailing - Nailing pattern 2

| Reference | Product characteristic capacities                                                                          |     |                        |     |                        |     |                        |     |
|-----------|------------------------------------------------------------------------------------------------------------|-----|------------------------|-----|------------------------|-----|------------------------|-----|
|           | - Timber to rigid support - 1 angle bracket - Partial nailing - Nailing pattern 2                          |     |                        |     |                        |     |                        |     |
|           | See full table online  |     |                        |     |                        |     |                        |     |
|           | počet of Fasteners                                                                                         |     |                        |     | počet of Fasteners     |     |                        |     |
|           | nosník                                                                                                     |     | příruba B              |     | nosník                 |     | příruba B              |     |
|           | množství                                                                                                   | typ | množství               | typ | množství               | typ | množství               | typ |
| ABR255    | min (24,8 ; 22,9/kmod)                                                                                     | Ø12 | min (30,3 ; 22,9/kmod) | Ø12 | min (24,8 ; 22,9/kmod) | Ø12 | min (30,3 ; 22,9/kmod) | Ø12 |

ABR255

## Angle Bracket for CLT

Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Partial nailing - Nailing pattern 4



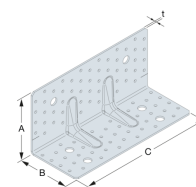
| Reference | úhelník únosnost                                                          |     |           |     |                                                                      |           |                                    |               |                           |                           |                  |               |
|-----------|---------------------------------------------------------------------------|-----|-----------|-----|----------------------------------------------------------------------|-----------|------------------------------------|---------------|---------------------------|---------------------------|------------------|---------------|
|           | výrobek capacities - dřevo to beton - Partial Nailing - Nailing pattern 4 |     |           |     |                                                                      |           |                                    |               |                           |                           |                  |               |
|           | počet of Fasteners                                                        |     |           |     | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |           |                                    |               |                           |                           |                  |               |
|           | nosník                                                                    |     | příruba 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> |               |
|           | množství                                                                  | typ | množství  | typ | CNA4.0x50                                                            | CNA4.0x60 | CNA4.0x50                          | mit CNA4.0x60 | CNA4.0x50                 | mit CNA4.0x60             | CNA4.0x50        | mit CNA4.0x60 |
| ABR255S0  | 26.0                                                                      | CNA | 2.0       | Ø12 | 22,9/kmod                                                            | 22,9/kmod | 21.7                               | -             | 18,2/kmod <sup>0,66</sup> | 18,2/kmod <sup>0,66</sup> | 5,05/kmod        | 5,05/kmod     |

The value in the table above can be used if the panel can't rotate.

The anchor capacities must be checked separately by multiplying the F<sub>1</sub> load by a factor 1.1, F<sub>2</sub> load by a factor of 1 and F<sub>5</sub> by a factor of 2.2.

Nailing pattern 4 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Partial nailing - Nailing pattern 7



| Reference | úhelník únosnost                                                          |           |                                    |           |                    |     |          |     |
|-----------|---------------------------------------------------------------------------|-----------|------------------------------------|-----------|--------------------|-----|----------|-----|
|           | výrobek capacities - dřevo to beton - Partial nailing - Nailing pattern 7 |           |                                    |           |                    |     |          |     |
|           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN]      |           |                                    |           | počet of Fasteners |     |          |     |
|           | R <sub>1,k</sub>                                                          |           | R <sub>2,k</sub> =R <sub>3,k</sub> |           | příruba B          |     | nosník   |     |
|           | CNA4.0x50                                                                 | CNA4.0x60 | CNA4.0x50                          | CNA4.0x60 | množství           | typ | množství | typ |
| ABR255    | -                                                                         | -         | 39.8                               | 42.5      | 2.0                | Ø12 | 30.0     | CNA |
| ABR255S0  | -                                                                         | -         | -                                  | -         | -                  | -   | -        | -   |

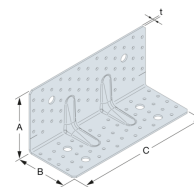
The value in the table above can be used if the panel can't rotate.

The anchor capacities must be checked separately by multiplying the F<sub>2</sub> load by a factor of 1.

Nailing pattern 7 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

## ABR255 Angle Bracket for CLT

Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Partial nailing - Nailing pattern 8



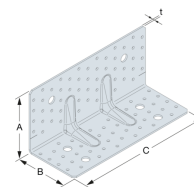
| Reference | úhelník únosnost                                                          |     |           |     |                                                                      |           |                                    |           |
|-----------|---------------------------------------------------------------------------|-----|-----------|-----|----------------------------------------------------------------------|-----------|------------------------------------|-----------|
|           | výrobek capacities - dřevo to beton - Partial Nailing - Nailing pattern 8 |     |           |     |                                                                      |           |                                    |           |
|           | počet of Fasteners                                                        |     |           |     | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |           |                                    |           |
|           | nosník                                                                    |     | příruba B |     | R <sub>1,k</sub>                                                     |           | R <sub>2,k</sub> =R <sub>3,k</sub> |           |
|           | množství                                                                  | typ | množství  | typ | CNA4.0x50                                                            | CNA4.0x60 | CNA4.0x50                          | CNA4.0x60 |
| ABR255    | 17.0                                                                      | CNA | 2.0       | Ø12 | 20                                                                   | 20        | 24.9                               | 26.5      |
| ABR255S0  | 30.0                                                                      | CNA | 2.0       | Ø12 | 22,9/kmod                                                            | 22,9/kmod | 26.1                               | -         |

The value in the table above can be used if the panel can't rotate.

The anchor capacities must be checked separately by multiplying the F<sub>1</sub> load by a factor 1.1, F<sub>2</sub> load by a factor of 1 and F<sub>5</sub> by a factor of 2.2.

Nailing pattern 8 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

Product characteristic capacities - Timber to rigid support - 1 angle bracket  
- Partial nailing - Nailing pattern 9



| Reference | úhelník únosnost                                                          |     |           |                                                                      |  |                                    |
|-----------|---------------------------------------------------------------------------|-----|-----------|----------------------------------------------------------------------|--|------------------------------------|
|           | výrobek capacities - dřevo to beton - Partial nailing - Nailing pattern 9 |     |           |                                                                      |  |                                    |
|           | počet of Fasteners                                                        |     |           | Characteristic capacities - dřevo C24 - 1 úhelník per connection[kN] |  |                                    |
|           | nosník                                                                    |     | příruba B | R <sub>1,k</sub>                                                     |  | R <sub>2,k</sub> =R <sub>3,k</sub> |
|           | množství                                                                  | typ | množství  | CSA5.0x50                                                            |  | CSA5.0x50                          |
| ABR255    | 35.0                                                                      | CSA | 2.0       | min (79,5 ; 22 / kmod)                                               |  | min (58 ; 57,6 / kmod)             |
| ABR255S0  | -                                                                         | -   | -         | -                                                                    |  | -                                  |

The value in the table above can be used if the panel can't rotate.

The anchor capacities must be checked separately by multiplying the F<sub>1</sub> load by a factor 1.1 and F<sub>2</sub> load by a factor of 1.

Nailing pattern 9 has been specifically developed for CLT application. It can be used for applications with other timber based materials provided that the materials comply with the spacing and distances of fasteners in CLT.

## Installation

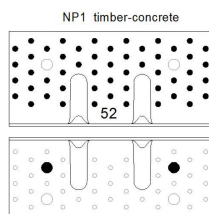
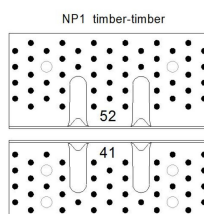
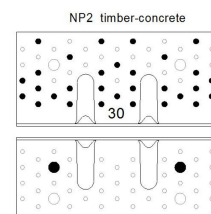
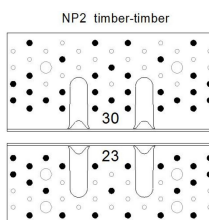
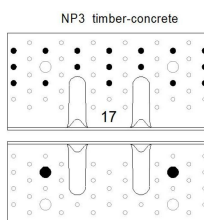
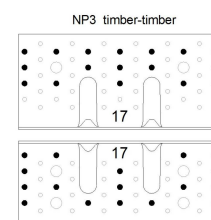
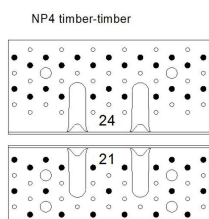
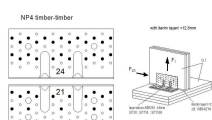
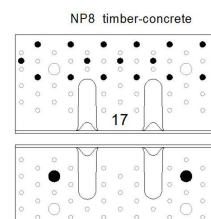
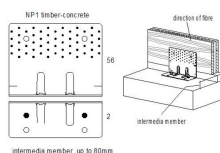
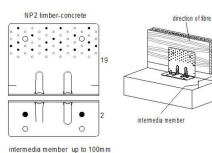
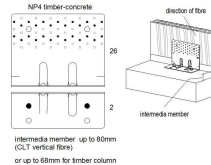
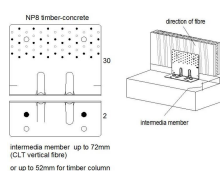
### Befestigung

#### On timber:

- CNA 4.0x50 on timber
- CSA 5.0x40 or CSA 5.0x50 screws
- SSH Ø 12 x 80 mm

#### On concrete:

- Mechanical anchor: WA M12-104/5
- Chemical anchor: AT-HP resin + LMAS M12-150/35 threaded rod

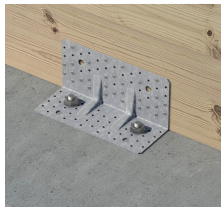
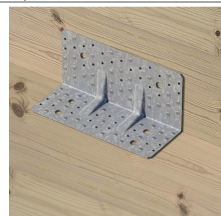
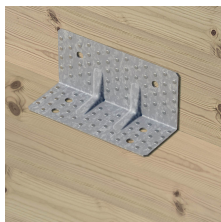


# Technical Sheet

ABR255  
**Angle Bracket for CLT**

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ABR255  
**Angle Bracket for CLT**

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