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04

TENSION TIES

# TENSION TIES

## TENSION TIE HT

- Absorption of high tensile loads in timber framework construction
- Reduced overall height
- Short rib (150 mm)
- Optimised hole pattern
- They are also suitable for column connections
- Optional pressure plates
- Use of pressure plates for tension loads up to 85 kN
- Without pressure plates for tension loads up to 42 kN

## TENSION TIE HT2

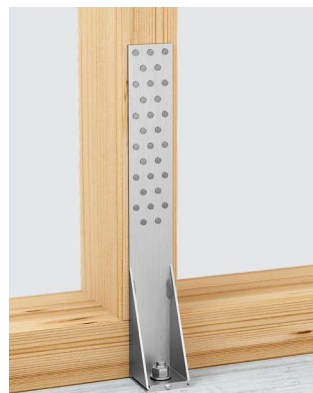
- Assembly of pull tab in wall production
- Interior walls can be fully panelled and completed
- No protruding parts during transport
- Simple and quick height compensation up to 30 mm possible on the building site
- Transfer of high tensile loads
- No improvement work on the building site

## TENSION TIE TOP 240 / TOP 280 VARIO

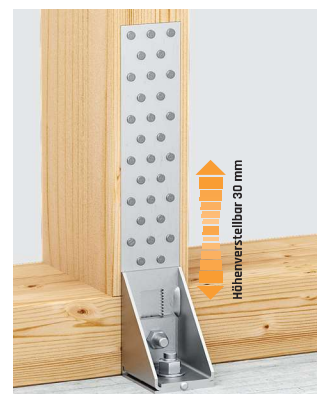
- Approved connection over intermediate layer
- Efficient wall or column connection on concrete
- Fast and practical processing
- Time savings - no more laborious marking and dowel drilling in advance
- Safe processing due to the coordinated system
- Direct connection to OSB boards between the timber beams is possible with GH screw

## CONNECTOR TOP 80 / TOP 120 VARIO

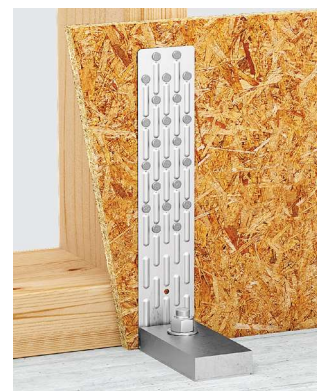
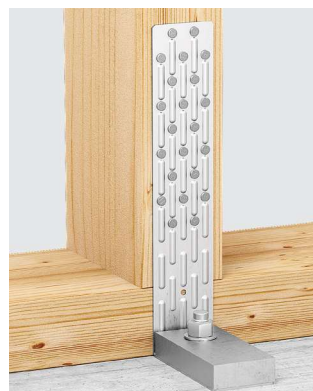
- No bothersome centre rib during processing
- Full nail fitting always possible
- High stability due to special, discreet corrugation
- Not a nail too many - optimal coordination of the bracket
- No fixing in the edge zone due to optimal hole pattern



Basics of statics **from page 163** / Products & statics **from page 172**



Basics of statics **from page 163** / Products & statics **from page 176**



Basics of statics **from page 163** / Products & statics **from page 168**








































Basics of statics **from page 163** / Products & statics **from page 184**



# TENSION TIES

## ASSORTMENT

|                                      |   |   |   |  |   |   | Basics<br>Statics &<br>Diagrams<br>from page | Products &<br>Statics<br>from page |
|--------------------------------------|---|---|---|--|---|---|--|------------------------------------|
| TENSION TIE TOP 240 / TOP 280 VARIO  |    |    |    |    |    |   | 163  | 168                                |
| TENSION TIE HT                       |    |    |    |    |    |   | 163  | 172                                |
| TENSION TIE HT2                      |    |    |    |    |    |   | 163  | 176                                |
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| TENSION TIE HS                       |   |   |   |   |   |   | 163  | 186                                |
| TENSION TIE HB                       |  |  |  |  |  |  | 163  | 186                                |
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**CE symbol****Steel with indication of the steel quality and galvanisation****Timber/timber connection****Timber/concrete-connection****Usage class 1**

Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 65% for a few weeks per year, e.g. in the case of buildings that are closed on all sides and heated.  
Comment: In UC 1, the average moisture content of most softwoods does not exceed 12 %.

**Usage class 2**

Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 85% for a few weeks per year, e.g. in the case of open buildings covered by a roof.  
Comment: In UC 2, the average moisture content of most softwoods does not exceed 20 %.

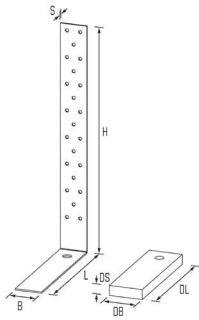
**Usage class 3**



















Includes climatic conditions that lead to higher moisture contents than in UC 2, e.g. structures that are exposed to the weather without protection. Eurocode 5 / DIN EN 1995-1-1 section 2.3.1.3



# TENSION TIES

## WITH PRESSURE PLATE



| Art. No. | Dimensions [mm] |   |     |   |      |   |      | nBo | nN | Dimensions of pressure plate [mm] |   |    |   |    | EAN    | Weight<br>kg | Pallet | PU |    |    |
|----------|-----------------|---|-----|---|------|---|------|-----|----|-----------------------------------|---|----|---|----|--------|--------------|--------|----|---|---|
|          | H               | x | L   | x | W(B) | x | T(S) |     |    | DL                                | x | DB | x | DS |        |              |        |    |   |   |
| 110310   | 142             | x | 93  | x | 60   | x | 2,0  | 12  | 17 | 90                                | x | 50 | x | 12 | 007037 | 0.658        | 1000   | 20 |    |    |
| 110305   | 280             | x | 122 | x | 40   | x | 2,0  | 12  | 11 | 90                                | x | 50 | x | 12 | 007020 | 0.650        | 400    | 10 |    |    |
| 110405   | 340             | x | 182 | x | 40   | x | 2,0  | 12  | 23 | 160                               | x | 50 | x | 15 | 017791 | 1.270        | 400    | 10 |    |    |
| 110410   | 400             | x | 123 | x | 40   | x | 3,0  | 16  | 23 | 110                               | x | 60 | x | 15 | 017807 | 1.270        | 400    | 10 |    |    |
| 110415   | 420             | x | 222 | x | 60   | x | 2,0  | 16  | 38 | 200                               | x | 60 | x | 20 | 017814 | 2.490        | 160    | 10 |    |    |
| 110420   | 420             | x | 102 | x | 60   | x | 2,0  | 20  | 38 | 85                                | x | 60 | x | 20 | 017821 | 1.290        | 320    | 10 |   |   |
| 110425   | 480             | x | 123 | x | 60   | x | 2,5  | 20  | 38 | 115                               | x | 70 | x | 20 | 017838 | 1.970        | 320    | 10 |  |  |
| 110430   | 520             | x | 222 | x | 60   | x | 2,5  | 18  | 18 | 220                               | x | 60 | x | 25 | 017494 | 3.500        | 480    | 4  |  |  |

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The tension ties including pressure disc are used as a classic tension connection for timber components with connection to concrete. Foot point anchors in timber frame construction are quickly and easily released with this system. The large baseplates including the pressure plates the loads are statically verifiably transferred into the concrete and timber constructions can be optimally connected to the concrete substructure.

## TENSION TIE WITH PRESSURE PLATE

| Timber   |     |     |      |      |          |             | Concrete        |                      |                  |                      |                  |                      |                  |                       |                |
|----------|-----|-----|------|------|----------|-------------|-----------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|-----------------------|----------------|
| Art. No. | H   | L   | W(B) | T(S) | n<br>Ø 5 | nBo<br>1x Ø | charakt. / KLED | 4.0x40   5.0x40      |                  | 4.0x50   5.0x50      |                  | 4.0x60   5.0x60      |                  | F <sub>Rd,steel</sub> | k <sub>t</sub> |
|          |     |     |      |      |          |             |                 | F <sub>z,Rk/Rd</sub> | n <sub>erf</sub> | F <sub>z,Rk/Rd</sub> | n <sub>erf</sub> | F <sub>z,Rk/Rd</sub> | n <sub>erf</sub> |                       |                |
| 110310   | 142 | 93  | 60   | 2,0  | 17       | 15          | charact.        | 16,44                | 9                | 17,30                | 9                | 17,30                | 8                | 17,30                 | 1,51           |
|          |     |     |      |      |          |             | Short           | 11,38                | 9                | 13,31                | 9                | 14,12                | 9                |                       |                |
|          |     |     |      |      |          |             | Very short      | 13,91                | 9                | 16,26                | 9                | 17,26                | 9                |                       |                |
| 110305   | 280 | 122 | 40   | 2,0  | 11       | 15          | charact.        | 11,50                | 7                | 11,50                | 6                | 11,50                | 6                | 11,50                 | 1,51           |
|          |     |     |      |      |          |             | Short           | 11,50                | 10               | 11,50                | 8                | 11,50                | 8                |                       |                |
|          |     |     |      |      |          |             | Very short      | 11,50                | 8                | 11,50                | 7                | 11,00                | 6                |                       |                |
| 110405   | 340 | 182 | 40   | 2,0  | 23       | 13          | charact.        | 11,60                | 7                | 11,60                | 6                | 11,60                | 6                | 11,60                 | 1,20           |
|          |     |     |      |      |          |             | Short           | 11,60                | 10               | 11,60                | 8                | 11,60                | 8                |                       |                |
|          |     |     |      |      |          |             | Very short      | 11,60                | 8                | 11,60                | 7                | 11,60                | 7                |                       |                |
| 110410   | 400 | 123 | 40   | 3,0  | 23       | 18          | charact.        | 17,30                | 10               | 17,30                | 9                | 17,30                | 8                | 17,30                 | 1,33           |
|          |     |     |      |      |          |             | Short           | 17,30                | 14               | 17,30                | 12               | 17,30                | 12               |                       |                |
|          |     |     |      |      |          |             | Very short      | 17,30                | 12               | 17,30                | 10               | 17,30                | 10               |                       |                |
| 110415   | 420 | 222 | 60   | 2,0  | 38       | 18          | charact.        | 17,30                | 10               | 17,30                | 9                | 17,30                | 8                | 17,30                 | 1,23           |
|          |     |     |      |      |          |             | Short           | 17,30                | 14               | 17,30                | 12               | 17,30                | 12               |                       |                |
|          |     |     |      |      |          |             | Very short      | 17,30                | 12               | 17,30                | 10               | 17,30                | 10               |                       |                |
| 110420   | 420 | 102 | 60   | 2,0  | 38       | 22          | charact.        | 17,30                | 10               | 17,30                | 9                | 17,30                | 8                | 17,30                 | 1,88           |
|          |     |     |      |      |          |             | Short           | 17,30                | 14               | 17,30                | 12               | 17,30                | 12               |                       |                |
|          |     |     |      |      |          |             | Very short      | 17,30                | 12               | 17,30                | 10               | 17,30                | 10               |                       |                |
| 110425   | 480 | 123 | 60   | 2,5  | 38       | 22          | charact.        | 21,70                | 12               | 21,70                | 11               | 21,70                | 10               | 21,70                 | 1,50           |
|          |     |     |      |      |          |             | Short           | 21,70                | 18               | 21,70                | 15               | 21,70                | 14               |                       |                |
|          |     |     |      |      |          |             | Very short      | 21,70                | 15               | 21,70                | 13               | 21,70                | 12               |                       |                |
| 110430   | 520 | 222 | 60   | 2,5  | 18       | 18          | charact.        | 21,70                | 12               | 21,70                | 11               | 21,70                | 10               | 21,70                 | 1,31           |
|          |     |     |      |      |          |             | Short           | 21,70                | 18               | 21,70                | 15               | 21,70                | 14               |                       |                |
|          |     |     |      |      |          |             | Very short      | 21,70                | 15               | 21,70                | 13               | 21,70                | 12               |                       |                |