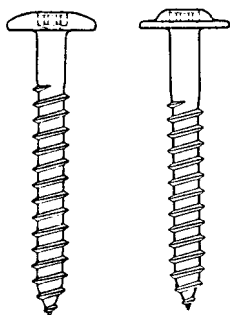


### TW-S/TW-A4



TW-S Ø 4,8xL und Ø 6,0xL  
TW-A4 Ø 4,8xL

Admission DIBt Z-31.1-79 TW-S  
Admission DIBt Z-33.2-10, 33.2-17 TW-A4

#### Material

##### Fastener:

TW-S: stainless steel A2 (S),  
Material number 1.4301, AISI 304

TW-A4: stainless steel A4,  
Material number 1.4578, AISI 316

#### Size

##### Drive:

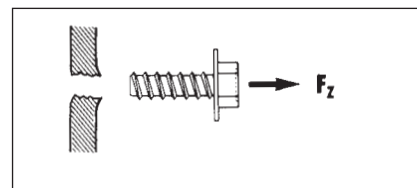
Torx T20W

##### Head:

Ø 12 mm

**Shear load:** Figures obtained with displacement of 3 mm between purlin and sheet.

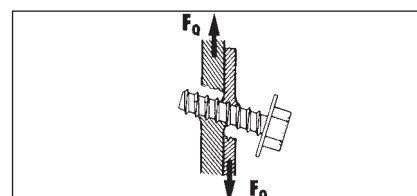
### Pull-out load $F_z$ (N)



#### Part II (Subconstruction)

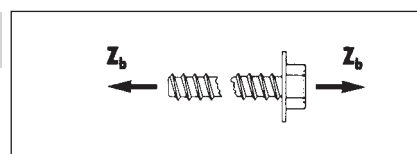
| Type                 | Material    | Embedment (mm) | $\bar{x}$ | s   |
|----------------------|-------------|----------------|-----------|-----|
| TW-S Ø 4,8 and TW-A4 | Timber 11%  | 13             | 1277      | 94  |
|                      |             | 26             | 3023      | 108 |
|                      |             | 31             | 3671      | 160 |
|                      |             | 41             | 4643      | 174 |
|                      |             | 51             | 5877      | 235 |
| TW-S Ø 6,0           | Timber 6,5% | 35             | 4659      | 150 |

### Shear load $F_Q$ (N)



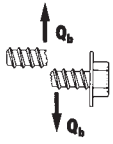
| Type      | Material     | Thickness in mm |         | $\bar{x}$ | s   |
|-----------|--------------|-----------------|---------|-----------|-----|
|           |              | Part I          | Part II |           |     |
| TW-S Ø4,8 | Eternit Wood | 8 (mm)          | 30 (mm) | 1180      | 370 |
|           |              | Eternit         | Wood    |           |     |
| TW-A4     | Eternit Wood | 8 (mm)          | 30 (mm) | 1590      | 70  |
|           |              | Eternit         | Wood    |           |     |

### Tensile breaking load $Z_b$ (N)



|       |       |           |   |       |
|-------|-------|-----------|---|-------|
| Ø 4,8 | TW-S  | $\bar{x}$ | = | 7100  |
| Ø 6,0 | TW-S  | $\bar{x}$ | = | 10249 |
|       | TW-A4 | $\bar{x}$ | = | 7100  |

### Shear breaking load $Q_b$ (N)



|       |           |   |      |
|-------|-----------|---|------|
| TW-S  | $\bar{x}$ | = | 5400 |
| TW-A4 | $\bar{x}$ | = | 5400 |

$\bar{x}$  = arithmetical mean value  
s = Standard deviation

All stated values are  $\bar{x}$  values, representing the arithmetical mean value from laboratory testing concluded up to now, appropriate safety margins should be applied for field conditions. Consult also your country's approval documents.