

English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel (A2) – EN ISO 3506 stainless steel (A4) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346 Component II: S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p>
	<p>Drilling capacity: <math>\Sigma(t_{N2} + t_{N,II}) \leq 13,0</math> mm</p>
	<p><b>Timber substructures:</b> no performance determined</p>

$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,54*	1,54*	1,54*	1,54*	1,54*	1,54*	—	—	—	—
	0,50	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	—	—	—	—
	0,55	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	—	—	—	—
	0,60	2,25*	2,25*	2,25*	2,25*	2,25*	2,25*	—	—	—	—
	0,63	2,40*	2,40*	2,40*	2,40*	2,40*	2,40*	—	—	—	—
	0,75	3,00	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—	—
	0,88	3,00	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—	—
	1,00	3,00	4,70	4,70*	4,70*	4,70*	4,70*	—	—	—	—
$N_{R,k,II}$ [kN]	3,00	4,70	6,90	6,90	6,90	6,90	6,90	—	—	—	—
$\max u$ [mm] for $D_F =$	40	14,0	7,0	6,0	5,0	5,0	5,0	—	—	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	—	—	—	—
	80	22,0	12,5	11,0	10,0	10,0	10,0	—	—	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	—	—	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	—	—	—	—
	140	33,0	26,0	26,0	23,5	21,0	21,0	—	—	—	—
	$\geq 160$	33,0	26,0	23,5	21,0	21,0	21,0	—	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)12-5,5xL, JT6-(FR-)12-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\varnothing 16$  mm

Annex 19

English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel (A2) – EN ISO 3506 stainless steel (A4) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346 Component II: S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p>
	<p>Drilling capacity: <math>\Sigma(t_{N2} + t_{N,II}) \leq 13,0 \text{ mm}</math></p>
	<p><b>Timber substructures:</b> no performance determined</p>

$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,83*	1,83*	1,83*	1,83*	1,83*	1,83*	—	—	—	—
	0,50	1,83*	1,83*	1,83*	1,83*	1,83*	1,83*	—	—	—	—
	0,55	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	—	—	—	—
	0,60	2,43	2,43*	2,43*	2,43*	2,43*	2,43*	—	—	—	—
	0,63	2,61	2,61*	2,61*	2,61*	2,61*	2,61*	—	—	—	—
	0,75	3,00	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—	—
	0,88	3,00	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—	—
	1,00	3,00	4,70	4,70*	4,70*	4,70*	4,70*	—	—	—	—
$N_{R,k,II}$ [kN]	3,00	4,70	6,90	6,90	6,90	6,90	6,90	—	—	—	—
$\max u$ [mm] for $D_F =$	40	14,0	7,0	6,0	5,0	5,0	5,0	—	—	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	—	—	—	—
	80	22,0	12,5	11,0	10,0	10,0	10,0	—	—	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	—	—	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	—	—	—	—
	140	33,0	26,0	26,0	23,5	21,0	21,0	—	—	—	—
	$\geq 160$	33,0	26,0	23,5	21,0	21,0	21,0	—	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

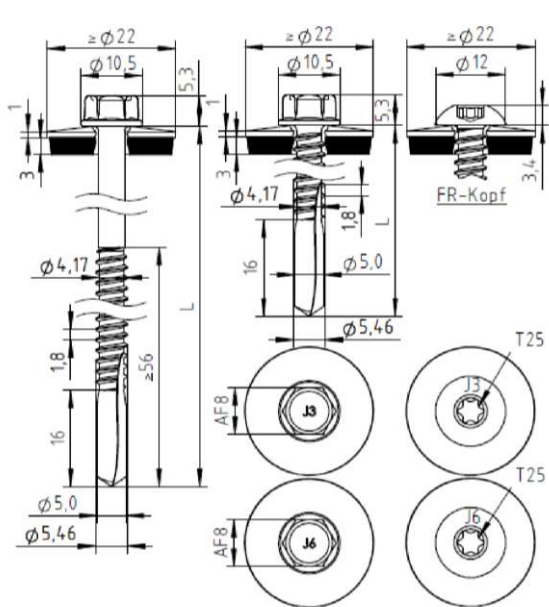
**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)12-5,5xL, JT6-(FR-)12-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\varnothing 19 \text{ mm}$

Annex 20

English translation prepared by DIBt



**Materials:**

**Fastener:** stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

**Washer:** stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

**Component I:** S280GD to S350GD – EN 10346

**Component II:** S235 to S355 – EN 10025-1  
S280GD to S350GD – EN 10346

**Drilling capacity:**  $\Sigma(t_{N2} + t_{N,II}) \leq 13,0$  mm

**Timber substructures:**  
no performance determined

$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	2,12*	2,12*	2,12*	2,12*	2,12*	2,12*	—	—	—	—
	0,50	2,12*	2,12*	2,12*	2,12*	2,12*	2,12*	—	—	—	—
	0,55	2,37*	2,37*	2,37*	2,37*	2,37*	2,37*	—	—	—	—
	0,60	2,63*	2,63*	2,63*	2,63*	2,63*	2,63*	—	—	—	—
	0,63	2,78	2,78*	2,78*	2,78*	2,78*	2,78*	—	—	—	—
	0,75	3,00	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—	—
	0,88	3,00	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—	—
	1,00	3,00	4,70	4,70*	4,70*	4,70*	4,70*	—	—	—	—
$N_{R,k,II}$ [kN]	3,00	4,70	6,90	6,90	6,90	6,90	6,90	—	—	—	—
$\max u$ [mm] for $D_f =$	40	14,0	7,0	6,0	5,0	5,0	5,0	5,0	—	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	8,0	—	—	—
	80	22,0	12,5	11,0	10,0	10,0	10,0	10,0	—	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	15,0	—	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	18,0	—	—	—
	140	33,0	26,0	26,0	23,5	21,0	21,0	21,0	—	—	—
	$\geq 160$	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)12-5,5xL, JT6-(FR-)12-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\geq \varnothing 22$  mm

Annex 21



English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel (A2) – EN ISO 3506 stainless steel (A4) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346 Component II: S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p>
	<p>Drilling capacity: <math>\Sigma(t_{N2} + t_{N,II}) \leq 18,0 \text{ mm}</math></p>
	<p><b>Timber substructures:</b> no performance determined</p>

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,54*	1,54*	1,54*	1,54*	1,54*	1,54*	1,54*	—	—	—
	0,50	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	—	—	—
	0,55	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	—	—	—
	0,60	2,25*	2,25*	2,25*	2,25*	2,25*	2,25*	2,25*	—	—	—
	0,63	2,40*	2,40*	2,40*	2,40*	2,40*	2,40*	2,40*	—	—	—
	0,75	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—
	0,88	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—
	1,00	4,70	4,70*	4,70*	4,70*	4,70*	4,70*	4,70*	—	—	—
$N_{R,k,II}$ [kN]	4,70	6,90	6,90	6,90	6,90	6,90	6,90	6,90	—	—	—
$\max u$ [mm] for $D_f =$	40	7,0	6,0	5,0	5,0	5,0	5,0	5,0	—	—	—
	60	10,0	9,0	8,0	8,0	8,0	8,0	8,0	—	—	—
	80	15,0	13,5	12,0	12,0	12,0	12,0	12,0	—	—	—
	100	19,0	18,0	15,0	15,0	15,0	15,0	15,0	—	—	—
	120	22,5	20,0	18,0	18,0	18,0	18,0	18,0	—	—	—
	140	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—
	$\geq 160$	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)18-5,5xL, JT6-(FR-)18-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer Ø16 mm

Annex 22



English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel (A2) – EN ISO 3506 stainless steel (A4) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346 Component II: S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p>
	<p>Drilling capacity: <math>\Sigma(t_{N2} + t_{N,II}) \leq 18,0 \text{ mm}</math></p>
	<p><b>Timber substructures:</b> no performance determined</p>

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,84*	1,84*	1,84*	1,84*	1,84*	1,84*	1,84*	—	—	—
	0,50	1,84*	1,84*	1,84*	1,84*	1,84*	1,84*	1,84*	—	—	—
	0,55	2,14*	2,14*	2,14*	2,14*	2,14*	2,14*	2,14*	—	—	—
	0,60	2,43*	2,43*	2,43*	2,43*	2,43*	2,43*	2,43*	—	—	—
	0,63	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	—	—	—
	0,75	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—
	0,88	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—
	1,00	4,70	4,70*	4,70*	4,70*	4,70*	4,70*	4,70*	—	—	—
$N_{R,k,II}$ [kN]	4,70	6,90	6,90	6,90	6,90	6,90	6,90	6,90	—	—	—
$\max u$ [mm] for $D_F =$	40	7,0	6,0	5,0	5,0	5,0	5,0	5,0	—	—	—
	60	10,0	9,0	8,0	8,0	8,0	8,0	8,0	—	—	—
	80	15,0	13,5	12,0	12,0	12,0	12,0	12,0	—	—	—
	100	19,0	18,0	15,0	15,0	15,0	15,0	15,0	—	—	—
	120	22,5	20,0	18,0	18,0	18,0	18,0	18,0	—	—	—
	140	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—
	$\geq 160$	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)18-5,5xL, JT6-(FR-)18-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer Ø19 mm

Annex 23

English translation prepared by DIBt

	<p><b>Materials:</b></p> <p><b>Fastener:</b> stainless steel (A2) – EN ISO 3506 stainless steel (A4) – EN ISO 3506</p> <p><b>Washer:</b> stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p><b>Component I:</b> S280GD to S350GD – EN 10346</p> <p><b>Component II:</b> S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p>
	<p><b>Drilling capacity:</b> <math>\Sigma(t_{N2} + t_{N,II}) \leq 18,0 \text{ mm}</math></p>
<p><b>Timber substructures:</b> no performance determined</p>	

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—	—
	0,60	1,03	1,03	1,03	1,03	1,03	1,03	1,03	—	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	1,10	—	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	2,90	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	—	—	—
	0,50	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	—	—	—
	0,55	2,38*	2,38*	2,38*	2,38*	2,38*	2,38*	2,38*	—	—	—
	0,60	2,63*	2,63*	2,63*	2,63*	2,63*	2,63*	2,63*	—	—	—
	0,63	2,78*	2,78*	2,78*	2,78*	2,78*	2,78*	2,78*	—	—	—
	0,75	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	3,10*	—	—	—
	0,88	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	3,90*	—	—	—
	1,00	4,70	4,70*	4,70*	4,70*	4,70*	4,70*	4,70*	—	—	—
$N_{R,k,II}$ [kN]	4,70	6,90	6,90	6,90	6,90	6,90	6,90	6,90	—	—	—
$\max u$ [mm] for $D_f =$	40	7,0	6,0	5,0	5,0	5,0	5,0	5,0	—	—	—
	60	10,0	9,0	8,0	8,0	8,0	8,0	8,0	—	—	—
	80	15,0	13,5	12,0	12,0	12,0	12,0	12,0	—	—	—
	100	19,0	18,0	15,0	15,0	15,0	15,0	15,0	—	—	—
	120	22,5	20,0	18,0	18,0	18,0	18,0	18,0	—	—	—
	140	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—
	≥ 160	26,0	23,5	21,0	21,0	21,0	21,0	21,0	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-(FR-)18-5,5xL, JT6-(FR-)18-5,5xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\geq \text{Ø}22 \text{ mm}$

Annex 24

English translation prepared by DIBt

	<b>Materials:</b>	
	<b>Fastener:</b>	stainless steel (A2) – EN ISO 3506
	<b>Washer:</b>	stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal
<b>Component I:</b>		S280GD to S350GD – EN 10346
<b>Component II:</b>		S235 to S355 – EN 10025-1 S280GD to S450GD – EN 10346 HX300LAD to HX460LAD – EN 10346
<b>Pre-drill diameter:</b>		see table
<b>Timber substructures:</b>		no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	≥10,0	—	—
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7		—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	—	—
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	—	—
	0,55	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	—	—
	0,60	2,61	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	—	—
	0,63	2,70	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	—	—
	0,75	2,70	3,60	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	—	—
	0,88	2,70	3,60	3,80	3,80*	3,80*	3,80*	3,80*	3,80*	—	—
	1,00	2,70	3,60	4,00	4,00*	4,00*	4,00*	4,00*	4,00*	—	—
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	—	—
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	—	—
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	—	—
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	—	—
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	—	—
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	—	—
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II, HX340LAD to HX460LAD only for JZ5-6,3xL
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JZ3-6,3xL, JZ5-6,3xL**  
with hexagon head and sealing washer  $\varnothing 16$  mm

Annex 25



English translation prepared by DIBt

**Materials:**

Fastener: stainless steel (A2) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: S235 to S355 – EN 10025-1  
S280GD to S450GD – EN 10346  
HX300LAD to HX460LAD – EN 10346

**Pre-drill diameter:** see table

**Timber substructures:**  
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	≥10,0	—	—
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7		—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	—	—
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	—	—
	0,55	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	—	—
	0,60	2,70	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	—	—
	0,63	2,70	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	—	—
	0,75	2,70	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	3,60*	—	—
	0,88	2,70	3,60	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*	—	—
	1,00	2,70	3,60	4,00*	4,00*	4,00*	4,00*	4,00*	4,00*	—	—
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	—	—
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	—	—
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	—	—
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	—	—
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	—	—
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	—	—
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	—	—

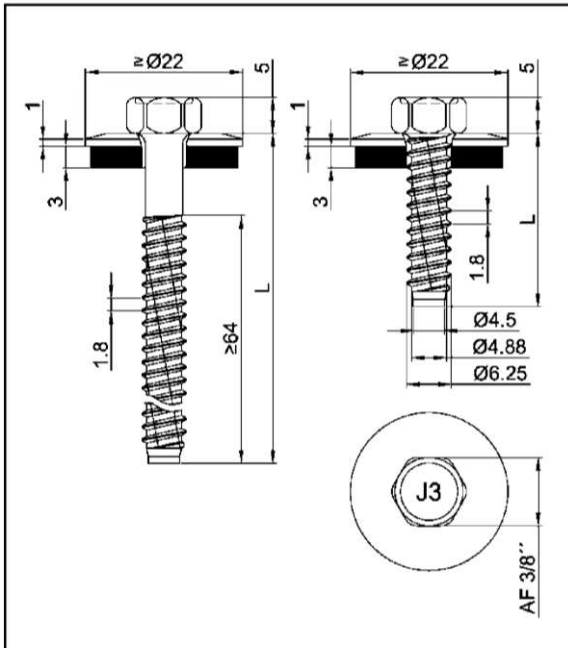
- $N_{R,k,II}$ : Pull-out resistance of component II, HX340LAD to HX460LAD only for JZ5-6,3xL
- For  $t_{N2}$  made of S320GD or S350GD the values  $V_{R,k}$  marked with \* can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JZ3-6,3xL, JZ5-6,3xL**  
with hexagon head and sealing washer  $\varnothing 19$  mm

Annex 26

English translation prepared by DIBt



Materials:

Fastener: stainless steel (A2) – EN ISO 3506  
Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal  
Component I: S280GD to S350GD – EN 10346  
Component II: S235 to S355 – EN 10025-1  
S280GD to S450GD – EN 10346  
HX300LAD to HX460LAD – EN 10346

Pre-drill diameter: see table

Timber substructures:  
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	$\geq 10,0$	—	—	
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7		—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—	
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—	
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—	
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—	
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—	
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—	
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—	
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—	
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	—	—	
	0,50	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	—	—	
	0,55	2,70	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	—	—	
	0,60	2,70	3,33	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	—	—	
	0,63	2,70	3,60	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	—	—	
	0,75	2,70	3,60	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	—	—	
	0,88	2,70	3,60	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*	—	—	
	1,00	2,70	3,60	4,00*	4,00*	4,00*	4,00*	4,00*	4,00*	—	—	
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—	
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	—	—	
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	—	—	
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	—	—	
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	—	—	
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	—	—	
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	—	—	
	$\geq 140$	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	—	—	

- $N_{R,k,II}$ : Pull-out resistance of component II. HX340LAD to HX460LAD only for JZ5-6,3xL
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JZ3-6,3xL, JZ5-6,3xL**  
with hexagon head and sealing washer  $\geq \text{Ø}22$  mm

Annex 27

English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel (A2) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD to S350GD – EN 10346</p>	
	<p><b>Pre-drill diameter:</b> see table</p>	
	<p><b>Timber substructures:</b> no performance determined</p>	

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	6,00	8,00	$\geq 10,0$	—	—	—	—
$d_{pd}$ [mm]	6,8				7,0	7,2	7,4	—	—	—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	—	—	—	—	—	—	—	—	—	—
	0,50	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	—	—
	0,60	—	—	—	—	—	—	—	—	—	—
	0,63	3,80	3,80	3,80	3,80	3,80	3,80	3,80	—	—	—
	0,75	4,70	4,70	4,70	4,70	4,70	4,70	4,70	—	—	—
	0,88	5,30	5,30	5,30	5,30	5,30	5,30	5,30	—	—	—
	1,00	5,90	5,90	5,90	5,90	5,90	5,90	5,90	—	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	—	—	—	—	—	—	—	—	—	—
	0,50	1,19*	1,84*	2,38*	2,38*	2,38*	2,38*	2,38*	—	—	—
	0,55	1,50*	2,32*	3,00*	3,00*	3,00*	3,00*	3,00*	—	—	—
	0,60	2,20	3,40	3,88*	3,88*	3,88*	3,88*	3,88*	—	—	—
	0,63	2,20	3,40	4,40*	4,40*	4,40*	4,40*	4,40*	—	—	—
	0,75	2,20	3,40	5,10*	5,30*	5,30*	5,30*	5,30*	—	—	—
	0,88	2,20	3,40	5,40*	5,70*	5,70*	5,70*	5,70*	—	—	—
	1,00	2,20	3,40	5,80	6,20*	6,20*	6,20*	6,20*	—	—	—
$N_{R,k,II}$ [kN]	2,20	3,40	5,80	6,80	6,80	6,80	6,80	—	—	—	—
$\max u$ [mm] for $D_F =$	30	—	—	—	—	—	—	—	—	—	—
	40	8,0	6,0	4,0	3,0	2,8	2,8	2,8	—	—	—
	60	12,0	9,0	6,0	4,5	4,2	4,2	4,2	—	—	—
	80	16,0	12,0	8,0	6,0	5,6	5,6	5,6	—	—	—
	100	20,0	15,0	10,0	7,5	7,0	7,0	7,0	—	—	—
	120	24,0	18,0	12,0	9,0	8,4	8,4	8,4	—	—	—
	$\geq 140$	28,0	21,0	14,0	10,5	9,8	9,8	9,8	—	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JZ3-8,0xL, JZ5-8,0xL**  
with hexagon head and sealing washer  $\varnothing 22$  mm

Annex 28



English translation prepared by DIBt

	<p><b>Materials:</b></p> <p>Fastener: stainless steel CRONIMAKS® similar to stainless steel (A2/A4) – EN ISO 3506</p> <p>Washer: stainless steel (A2/A4) – EN ISO 3506 with vulcanised EPDM seal</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: S235 to S355 – EN 10025-1 S280GD to S350GD – EN 10346</p> <hr/> <p><b>Pre-drill diameter:</b> see table</p> <hr/> <p><b>Timber substructures:</b> no performance determined</p>
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$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	$\geq 10,0$	—	—
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7		—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	1,25*	—	—
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	—	—
	0,55	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	—	—
	0,60	2,61	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	—	—
	0,63	2,70	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	—	—
	0,75	2,70	3,60	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	—	—
	0,88	2,70	3,60	3,80	3,80*	3,80*	3,80*	3,80*	3,80*	—	—
	1,00	2,70	3,60	4,00	4,00*	4,00*	4,00*	4,00*	4,00*	—	—
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	—	—
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	—	—
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	—	—
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	—	—
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	—	—
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	—	—
	$\geq 140$	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

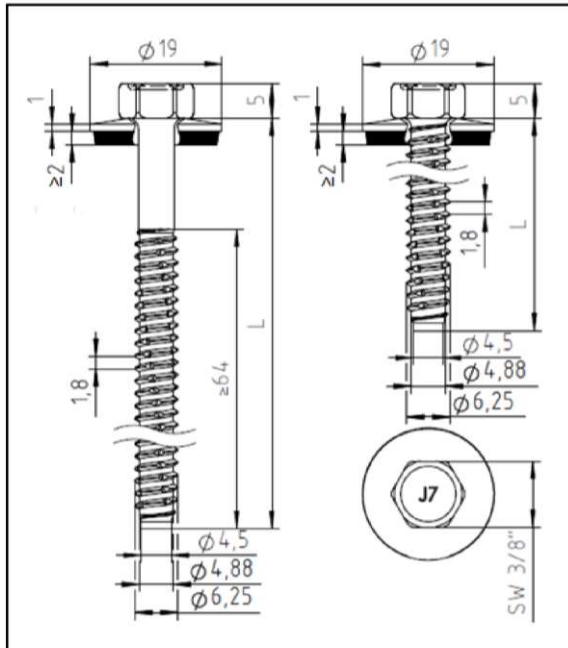
**Fastening screws for sandwich panels**

**Self-tapping screw JZ7-6,3xL**

with hexagon head and sealing washer  $\varnothing 16$  mm

Annex 29

English translation prepared by DIBt



Materials:

Fastener: stainless steel CRONIMAKS®  
similar to stainless steel (A2/A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: S235 to S355 – EN 10025-1  
S280GD to S350GD – EN 10346

Pre-drill diameter: see table

Timber substructures:

no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	≥10,0	—	—
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7		—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	—	—
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	—	—
	0,55	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	—	—
	0,60	2,70	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	—	—
	0,63	2,70	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	—	—
	0,75	2,70	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	3,60*	—	—
	0,88	2,70	3,60	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*	—	—
	1,00	2,70	3,60	4,00*	4,00*	4,00*	4,00*	4,00*	4,00*	—	—
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	—	—
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	—	—
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	—	—
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	—	—
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	—	—
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	—	—
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	—	—

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

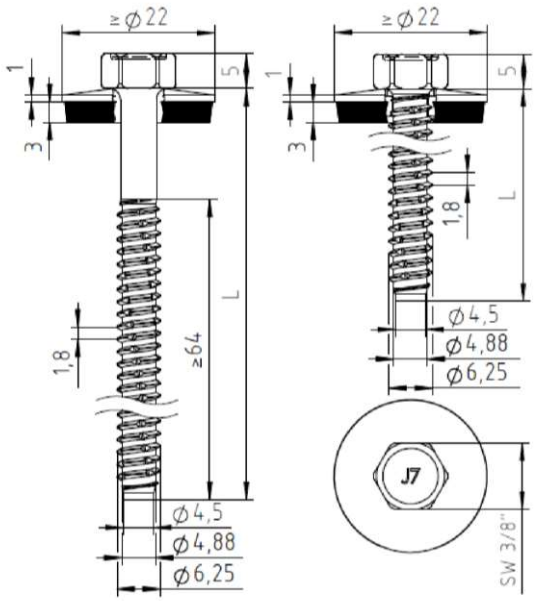
**Fastening screws for sandwich panels**

**Self-tapping screw JZ7-6,3xL**

with hexagon head and sealing washer  $\varnothing 19$  mm

Annex 30

English translation prepared by DIBt



**Materials:**

Fastener: stainless steel CRONIMAKS®  
similar to stainless steel (A2/A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD, S320GD oder S350GD – EN 10346

Component II: S235 to S355 – EN 10025-1  
S280GD to S350GD – EN 10346

**Pre-drill diameter:** see table

**Timber substructures:**  
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	$\geq 10,0$	—	—			
$d_{pd}$ [mm]	5,0	5,3					5,5	5,7					—	—
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	—	—		
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—		
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—		
	0,60	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	1,75	—	—		
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—		
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—		
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—		
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—		
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	—	—		
	0,50	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	—	—		
	0,55	2,70	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	—	—		
	0,60	2,70	3,33	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	—	—		
	0,63	2,70	3,60	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	—	—		
	0,75	2,70	3,60	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	—	—		
	0,88	2,70	3,60	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*	—	—		
	1,00	2,70	3,60	4,00*	4,00*	4,00*	4,00*	4,00*	4,00*	4,00*	—	—		
$N_{R,k,II}$ [kN]	2,70	3,60	4,80	6,00	7,30	7,45	7,60	7,60	7,60	—	—			
$\max u$ [mm] for $D_F =$	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	3,0	—	—		
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	4,5	—	—		
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	7,0	—	—		
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	12,5	—	—		
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	18,0	—	—		
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	23,5	—	—		
	$\geq 140$	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	29,0	—	—		

- $N_{R,k,II}$ : Pull-out resistance of component II
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JZ7-6,3xL**

with hexagon head and sealing washer  $\geq \text{Ø}22$  mm

Annex 31



English translation prepared by DIBt

**Materials:**  
 Fastener: stainless steel (A2) – EN ISO 3506  
 stainless steel (A4) – EN ISO 3506  
 Washer: stainless steel (A2/A4) – EN ISO 3506  
 with vulcanised EPDM seal  
 Component I: S280GD – EN 10346  
 Component II: timber – EN 14081

**Drilling capacity:**  $\Sigma t \leq 2,00$  mm

**Timber substructures**  
 performance determined with  
 $M_{y,Rk} = 9,742$  Nm  
 $f_{ax,k} = 11,810$  N/mm<sup>2</sup> for  $l_{ef} \geq 44$  mm

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80		
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,i}$ [kN]
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	$N_{R,k,i}$ [kN]
	0,50	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*	1,80*
	0,55	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*
	0,60	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*
	0,63	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*	2,50*
	0,75	3,04	3,25	3,30	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10*	4,10*	4,10*	4,10*	4,10*
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90	4,90*
max u [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	max u [mm] for $D_F =$
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	$\geq 140$	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-2-6,5xL, JT6-2-6,5xL**

with hexagon head and sealing washer  $\geq \varnothing 16$  mm

Annex 32

English translation prepared by DIBt

**Materials:**  
Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506  
Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal  
Component I: S280GD – EN 10346  
Component II: timber – EN 14081

Drilling capacity:  $\Sigma t_i \leq 2,00$  mm

**Timber substructures**  
performance determined with  
 $M_{y,Rk} = 9,742$  Nm  
 $f_{ax,k} = 11,810$  N/mm<sup>2</sup> for  $l_{ef} \geq 44$  mm

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80			
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,i}$ [kN]	
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10		
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20		
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26		
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	1,47*	$N_{R,k,i}$ [kN] =	
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*		
	0,55	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*		
	0,60	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*		
	0,63	3,03	3,03	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*		3,03*
	0,75	3,04	3,25	3,30	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*	3,30*		3,30*
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10*	4,10*	4,10*	4,10*		4,10*
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90		4,90*
$\max u$ [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	$\max u$ [mm] for $D_F =$	
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5		
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0		
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5		
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		
	$\geq 140$	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

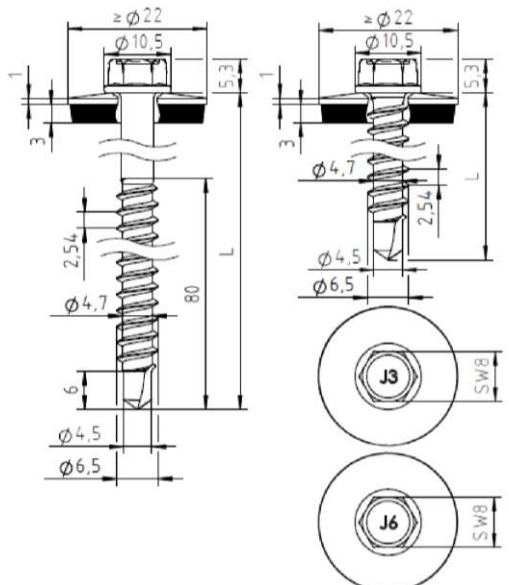
**Fastening screws for sandwich panels**

**Self-drilling screw JT3-2-6,5xL, JT6-2-6,5xL**  
with hexagon head and sealing washer  $\varnothing 19$  mm

Annex 33



English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 2,00 \text{ mm}$

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,810 \text{ N/mm}^2$  for  $l_{ef} \geq 44 \text{ mm}$

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80	
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	0,40	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*	1,71*
	0,50	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*
	0,55	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*
	0,60	3,04	3,25	3,33	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*
	0,63	3,04	3,25	3,45	3,66	3,67	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*
	0,75	3,04	3,25	3,45	3,66	3,67	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10*	4,10*	4,10*	4,10*
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90*
<b>max u [mm] for <math>D_F =</math></b>	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	≥ 140	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

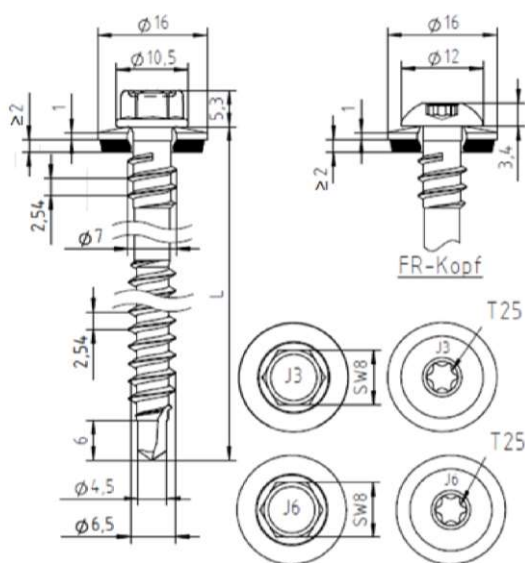
**Fastening screws for sandwich panels**

**Self-drilling screw JT3-2-6,5xL, JT6-2-6,5xL**  
with hexagon head and sealing washer  $\geq \text{Ø}22 \text{ mm}$

Annex 34



English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346  
Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 2,00 \text{ mm}$

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,810 \text{ N/mm}^2$  for  $l_{ef} \geq 44 \text{ mm}$

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80	
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	0,40	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*	1,57*
	0,50	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*	1,70*
	0,55	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*	2,00*
	0,60	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*	2,13*
	0,63	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*	2,20*
	0,75	3,04	3,25	3,40	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10	4,10*	4,10*	4,10*
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90*
<b>max u [mm] for <math>D_F =</math></b>	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	$\geq 140$	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

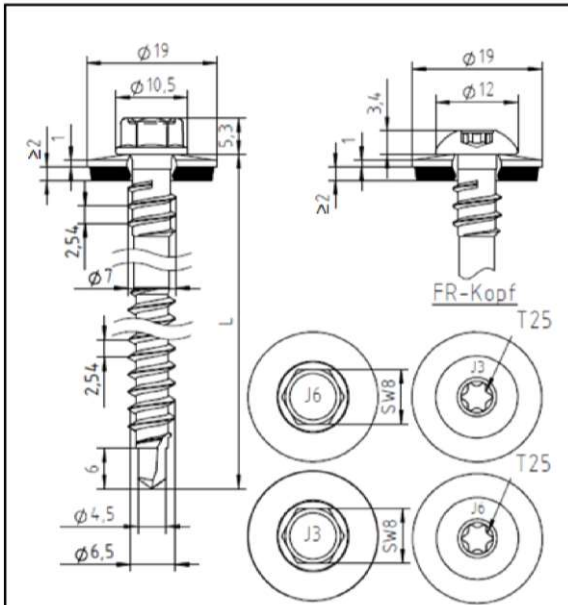
- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-D-(FR-)2H-6,5/7,0xL, JT6-D-(FR-)2H-6,5/7,0xL**  
with hexagon head or round head with Torx® drive system and sealing washer  $\geq \text{Ø}16 \text{ mm}$

Annex 35

English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506  
Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal  
Component I: S280GD to S350GD – EN 10346  
Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 2,00 \text{ mm}$

**Timber substructures:**

performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,810 \text{ N/mm}^2$  for  $l_{ef} \geq 44 \text{ mm}$

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80		
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,i}$ [kN]
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	1,86*	$N_{R,k,i}$ [kN]
	0,50	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*	2,02*
	0,55	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*	2,45*
	0,60	2,89	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*	2,89*
	0,63	3,04	3,15	3,15*	3,15*	3,15*	3,15*	3,15*	3,15*	3,15*	3,15*	3,15*	3,15*
	0,75	3,04	3,25	3,40	3,40	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10*	4,10*	4,10*	4,10*	4,10*
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90	4,90*
max u [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	max u [mm] for $D_F =$
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	$\geq 140$	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

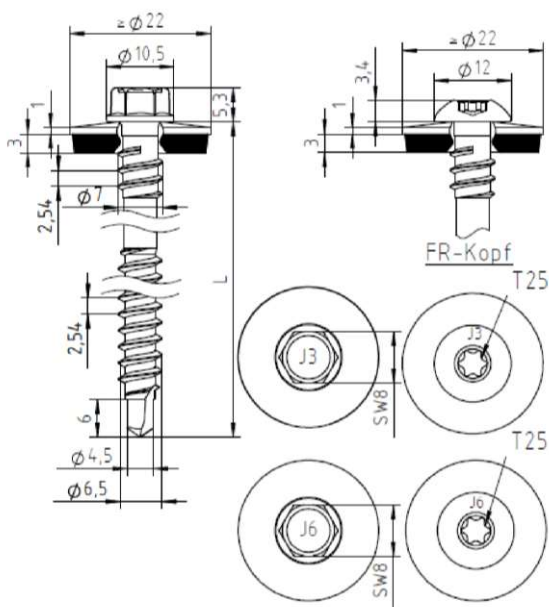
**Fastening screws for sandwich panels**

**Self-drilling screw JT3-D-(FR-)2H-6,5/7,0xL, JT6-D-(FR-)2H-6,5/7,0xL**  
with hexagon head or round head with Torx® drive system and sealing washer  $\geq \text{Ø}19 \text{ mm}$

Annex 36



English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 2,00 \text{ mm}$

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,810 \text{ N/mm}^2$  for  $l_{ef} \geq 44 \text{ mm}$

$l_g$ [mm]	50	53	56	59	62	65	68	71	74	77	80		
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	<b>0,40</b>	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	<b><math>V_{R,k,i}</math> [kN]</b>
	<b>0,50</b>	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	<b>0,55</b>	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	<b>0,60</b>	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	<b>0,63</b>	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	<b>0,75</b>	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	<b>0,88</b>	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	<b>1,00</b>	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	<b>0,40</b>	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	2,16*	<b><math>N_{R,k,i}</math> [kN] =</b>
	<b>0,50</b>	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*	2,28*
	<b>0,55</b>	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*	2,71*
	<b>0,60</b>	3,04	3,14	3,14*	3,14*	3,14*	3,14*	3,14*	3,14*	3,14*	3,14*	3,14*	3,14*
	<b>0,63</b>	3,04	3,25	3,40	3,40	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*
	<b>0,75</b>	3,04	3,25	3,40	3,40	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*	3,40*
	<b>0,88</b>	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10*	4,10*	4,10*	4,10*	4,10*
	<b>1,00</b>	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90	4,90
<b>max u [mm] for <math>D_F =</math></b>	<b>30</b>	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	<b>max u [mm] for <math>D_F =</math></b>
	<b>40</b>	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	<b>60</b>	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	<b>80</b>	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	<b>100</b>	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	<b>120</b>	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	<b><math>\geq 140</math></b>	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw JT3-D-(FR)-2H-6,5/7,0xL, JT6-D-(FR)-2H-6,5/7,0xL**  
with hexagon head or round head with Torx® drive system and sealing washer  $\geq \text{Ø}22 \text{ mm}$

Annex 37



English translation prepared by DIBt

**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S320GD – EN 10346

Component II: timber– EN 14081

**Pre-drill diameter:** 4,50 mm

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,080 \text{ N/mm}^2$  for  $l_{ef} \geq 50 \text{ mm}$

$l_g$ [mm]	50	53	55	58	60	63	65	68	70	73	75	
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	0,40	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*	1,24*
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*
	0,55	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*	2,30*
	0,60	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*	2,61*
	0,63	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*	2,80*
	0,75	3,24	3,40	3,56	3,60	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	3,60*
	0,88	3,24	3,40	3,56	3,73	3,80	3,80	3,80*	3,80*	3,80*	3,80*	3,80*
	1,00	3,24	3,40	3,56	3,73	3,89	4,00	4,00	4,00*	4,00*	4,00*	4,00*
<b>max u [mm] for <math>D_F =</math></b>	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	$\geq 140$	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

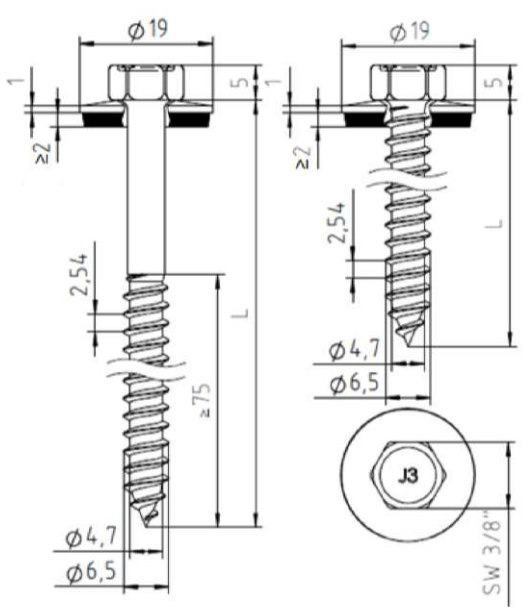
- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-tapping screw JA3-6,5xL**  
with hexagonal head and sealing washer  $\varnothing 16 \text{ mm}$

Annex 38

English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S320GD – EN 10346

Component II: timber – EN 14081

**Pre-drill diameter:** 4,50 mm

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742 \text{ Nm}$   
 $f_{ax,k} = 11,080 \text{ N/mm}^2$  for  $l_{ef} \geq 50 \text{ mm}$

$l_g$ [mm]	50	53	55	58	60	63	65	68	70	73	75		
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,i}$ [kN]
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	1,48*	$N_{R,k,i}$ [kN] =
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	
	0,55	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	
	0,60	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	
	0,63	3,03	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*	
	0,75	3,24	3,40	3,56	3,60	3,60	3,60*	3,60*	3,60*	3,60*	3,60*	3,60*	
	0,88	3,24	3,40	3,56	3,73	3,80	3,80	3,80*	3,80*	3,80*	3,80*	3,80*	
	1,00	3,24	3,40	3,56	3,73	3,89	4,00	4,00	4,00*	4,00*	4,00*	4,00*	
$\max u$ [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	$\max u$ [mm] for $D_F =$
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
	$\geq 140$	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

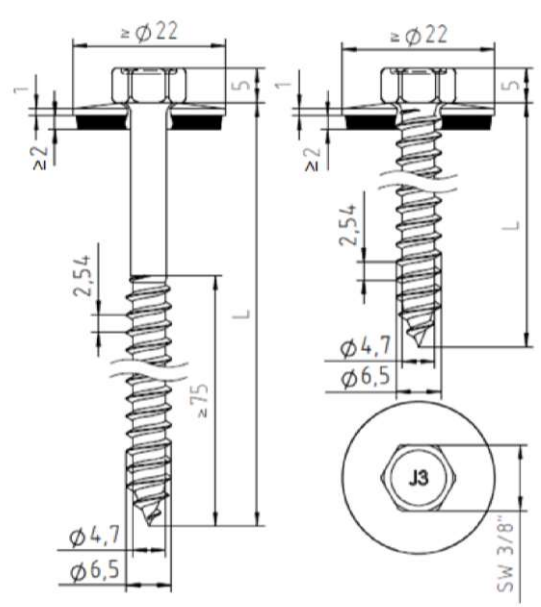
**Fastening screws for sandwich panels**

**Self-tapping screw JA3-6,5xL**  
with hexagon head and sealing washer  $\varnothing 19 \text{ mm}$

Annex 39



English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S320GD – EN 10346

Component II: timber – EN 14081

**Pre-drill diameter:** 4,50 mm

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 9,742\text{ Nm}$   
 $f_{ax,k} = 11,080\text{ N/mm}^2$  for  $l_{ef} \ge 50\text{ mm}$

$l_g$ [mm]	50	53	55	58	60	63	65	68	70	73	75		
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	<b><math>V_{R,k,i}</math> [kN]</b>
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	0,40	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	1,72*	<b><math>N_{R,k,i}</math> [kN]</b>
	0,50	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*
	0,55	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*
	0,60	3,24	3,33	3,33	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*	3,33*
	0,63	3,24	3,40	3,56	3,67	3,67	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*
	0,75	3,24	3,40	3,56	3,67	3,67	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*	3,67*
	0,88	3,24	3,40	3,56	3,73	3,80	3,80	3,80*	3,80*	3,80*	3,80*	3,80*	3,80*
	1,00	3,24	3,40	3,56	3,73	3,89	4,00	4,00	4,00*	4,00*	4,00*	4,00*	4,00*
<b>max u [mm] for <math>D_F =</math></b>	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	<b>max u [mm] for <math>D_F =</math></b>
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	$\ge 140$	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350\text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

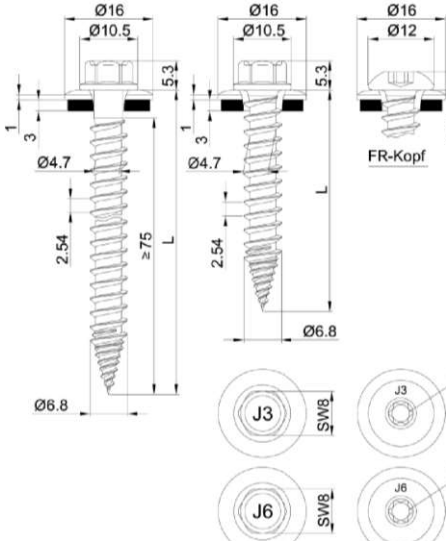
**Fastening screws for sandwich panels**

**Self-tapping screw JA3-6,5xL**

with hexagon head and sealing washer  $\ge \phi 22\text{ mm}$

Anhang 40





**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 1,00 \text{ mm}$

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 10,744 \text{ Nm}$   
 $f_{ax,k} = 11,080 \text{ N/mm}^2$  for  $l_{ef} \geq 34 \text{ mm}$

$l_g$ [mm]	45	48	51	54	57	60	63	66	69	72	75		
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,i}$ [kN]
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	1,38*	$N_{R,k,i}$ [kN]
	0,50	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	1,77*	
	0,55	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	1,96*	
	0,60	2,15	2,15*	2,15*	2,15*	2,15*	2,15*	2,15*	2,15*	2,15*	2,15*	2,15*	
	0,63	2,27	2,27*	2,27*	2,27*	2,27*	2,27*	2,27*	2,27*	2,27*	2,27*	2,27*	
	0,75	2,31	2,51	2,71	2,73	2,73*	2,73*	2,73*	2,73*	2,73*	2,73*	2,73*	
	0,88	2,31	2,51	2,71	2,92	3,12	3,23	3,23*	3,23*	3,23*	3,23*	3,23*	
	1,00	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,69	3,69	3,69*	3,69*	
$\max u$ [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	$\max u$ [mm] for $D_F =$
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
	≥ 140	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

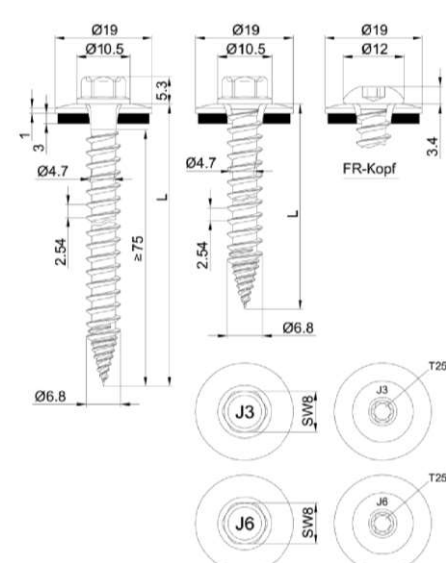
**Fastening screws for sandwich panels**

**Self-drilling screw (chipless) JF3-(FR)-6,8xL, JF6-(FR)-6,8xL**

with hexagon head or round head with Torx® drive system and sealing washer Ø16 mm

Annex 41

English translation prepared by DIBt



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346

Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 1,00 \text{ mm}$

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 10,744 \text{ Nm}$   
 $f_{ax,k} = 11,080 \text{ N/mm}^2$  for  $l_{ef} \geq 34 \text{ mm}$

$l_g$ [mm]	45	48	51	54	57	60	63	66	69	72	75	
$V_{R,k}$ [kN] for $t_{N2} =$	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
$N_{R,k}$ [kN] for $t_{N1} =$	0,40	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*	1,64*
	0,50	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*
	0,55	2,31	2,33	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*	2,33*
	0,60	2,31	2,51	2,71	2,77	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*
	0,63	2,31	2,51	2,71	2,92	3,03	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*
	0,75	2,31	2,51	2,71	2,92	3,03	3,03*	3,03*	3,03*	3,03*	3,03*	3,03*
	0,88	2,31	2,51	2,71	2,92	3,12	3,23	3,23*	3,23*	3,23*	3,23*	3,23*
	1,00	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,69	3,69	3,69*	3,69*
$\max u$ [mm] for $D_F =$	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	≥ 140	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw (chipless) JF3-(FR)-6,8xL, JF6-(FR)-6,8xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\geq \text{Ø}19 \text{ mm}$

Annex 42



**Materials**

Fastener: stainless steel (A2) – EN ISO 3506  
stainless steel (A4) – EN ISO 3506

Washer: stainless steel (A2/A4) – EN ISO 3506  
with vulcanised EPDM seal

Component I: S280GD to S350GD – EN 10346  
Component II: timber – EN 14081

Drilling capacity:  $t_{N2} \leq 1,00$  mm

**Timber substructures:**  
performance determined with  
 $M_{y,Rk} = 10,744$  Nm  
 $f_{ax,k} = 11,080$  N/mm<sup>2</sup> for  $l_{ef} \geq 34$  mm

$l_g$ [mm]	45	48	51	54	57	60	63	66	69	72	75		
<b><math>V_{R,k}</math> [kN] for <math>t_{N2} =</math></b>	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	<b><math>V_{R,k,i}</math> [kN]</b>
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,60	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26	1,26
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
<b><math>N_{R,k}</math> [kN] for <math>t_{N1} =</math></b>	0,40	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	1,90*	<b><math>N_{R,k,i}</math> [kN]</b>
	0,50	2,21	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*	2,21*
	0,55	2,31	2,51	2,71	2,77	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*	2,77*
	0,60	2,31	2,51	2,71	2,92	3,12	3,32	3,33	3,33*	3,33*	3,33*	3,33*	3,33*
	0,63	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,67	3,67	3,67*	3,67*	3,67
	0,75	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,67	3,67	3,67*	3,67*	3,67
	0,88	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,67	3,67	3,67*	3,67*	3,67
	1,00	2,31	2,51	2,71	2,92	3,12	3,32	3,53	3,69	3,69	3,69*	3,69*	3,69
<b>max u [mm] for <math>D_F =</math></b>	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	<b>max u [mm] for <math>D_F =</math></b>
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0
	$\geq 140$	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0

- The values indicated above, depending on the screw depth  $l_g$  shall apply to  $k_{mod} = 0,90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>). For other values of  $k_{mod}$  and strength classes see chapter 4.2.2.
- For  $t_{N2}$  made of S320GD or S350GD the indicated values  $V_{R,k}$  can be increased by 8,3%.
- For  $t_{N1}$  made of S320GD or S350GD the values  $N_{R,k}$  marked with \* can be increased by 8,3%.

**Fastening screws for sandwich panels**

**Self-drilling screw (chipless) JF3-(FR)-6,8xL, JF6-(FR)-6,8xL**

with hexagon head or round head with Torx® drive system and sealing washer  $\geq \varnothing 22$  mm

Annex 43