

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-18/1136**  
**of 13 November 2023**

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

RP, FABA

Product family  
to which the construction product belongs

Fastening screws for sandwich panels

Manufacturer

REISSER-Schraubentechnik GmbH  
Fritz-Müller-Straße 10  
74653 Ingelfingen-Criesbach  
DEUTSCHLAND

Manufacturing plant

plant 1  
plant 2  
plant 3

This European Technical Assessment  
contains

47 pages including 41 annexes which form an integral  
part of this assessment

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

330047-01-0602

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## Specific part

### 1 Technical description of the product

The fastening screws are self-drilling or self-tapping screws made of austenitic stainless steel or carbon steel with anticorrosion coating (listed in Table 1). The fastening screws are completed with sealing washers consisting of metal washer and EPDM-seal.

**Table 1 - Fastening screws for sandwich panels**

Typ of supporting structures	Drilling performance	Component I	Fastening screw	Description	Sealing washer Ø	Annex
Steel	$\Sigma t_i \leq 3 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-r-(FK-)(P-) 6,0xL	Bi-metal Self-drilling screw	E14	4
					E16	5
					E19	6
					E22	7
Steel	$\Sigma t_i \leq 4 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-C3-(FK-) 6,3xL	Bi-metal Self-drilling screw	E16	8
Steel	$\Sigma t_i \leq 5 \text{ mm}$	$\geq S280GD$ $\leq S350GD$	RP-WS-(FK-)(P-) 6,5xL	Bi-metal Self-drilling screw	E16	12
					E19	13
					E22	14
Steel	$\Sigma t_i \leq 5,25 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-(7)K-(FK-)(P-) 5,5xL	Bi-metal Self-drilling screw	E16	15
					E19	16
					E22	17
Steel	$\Sigma t_i \leq 6 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-K-(FK-)(P-) 6,3xL	Bi-metal Self-drilling screw	E16	18
					E19	19
					E22	20
Steel	$\Sigma t_i \leq 11,25 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-K12-(FK-)(P-) 5,5xL	Bi-metal Self-drilling screw	E16	21
					E19	22
					E22	23

Table 1 - continue

Type of supporting structures	Drilling performance	Component I	Fastening screw	Description	Sealing washer Ø	Annex
Steel	$\Sigma t_i \leq 15 \text{ mm}$	$\geq S280GD$ $\leq S350GD$	RP-K15-(FK-)(P-) 5,8xL	Bi-metal Self-drilling screw	E16	24
					E19	25
					E22	26
Steel	.	$\geq S280GD$ $\leq S550GD$	FABA-BZ-(FK-) 6,3xL	Thread- forming screw	E16	27
Steel	.	$\geq S280GD$ $\leq S550GD$	FABA-BZ-(FK-) 8,0xL		E22	28
Timber	$\Sigma t_i \leq 2 \text{ mm}$ $l_{ef} \geq 30 \text{ mm}$	$\geq S280GD$ $\leq S350GD$	RP-TD-(FK-)(P-) 6,0xL	Bi-metal Self-drilling Screw  Admitted for construction beech	E14	29
					E16	30
					E19	31
					E22	32
Timber	$\Sigma t_i \leq 2 \text{ mm}$ $l_{ef} \geq 30 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	RP-TD-(FK-)(P-) 6,5xL	Bi-metal Self-drilling screw	E16	33
					E19	34
					E22	35
Timber	$\Sigma t_i \leq 3 \text{ mm}$ $l_{ef} \geq 30 \text{ mm}$	$\geq S280GD$ $\leq S350GD$	RP-r-(FK-)(P-) 6,0xL	Bi-metal Self-drilling Screw  Admitted for construction beech	E14	36
					E16	37
					E19	38
					E22	39
Timber	$\Sigma t_i \leq 3 \text{ mm}$ $l_{ef} \geq 30 \text{ mm}$	$\geq S280GD$ $\leq S350GD$	RP-WS-(FK-)(P-) 6,5xL	Bi-metal Self-drilling screw	E16	43
					E19	44
					E22	45
Timber	$\Sigma t_i \leq 26 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	FABA-A-(FK-) 6,5xL	Thread- forming screw	E16	46
Timber	$\Sigma t_i \leq 34 \text{ mm}$	$\geq S280GD$ $\leq S550GD$	FABA-A-(FK-) 8,0xL		E22	47



## 2 Specification of the intended use in accordance with the applicable European Assessment Document

The fastening screws are intended to be used for fastening sandwich panels to metal or timber substructures. The sandwich panel can either be used as wall or roof cladding or as load bearing wall and roof element. The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are intended to be used in external environments with  $\geq$  C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel. Furthermore the intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads). The fastening screws are not intended for re-use.

The performances given in Section 3 are only valid if the fastening screws are used in compliance with the specifications and conditions given in Annex (1-47).

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fastening screws of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

## 3 Performance of the product and references to the methods used for its assessment

### 3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Shear Resistance of the Connection	see Annexes to this ETA
Tension Resistance of the Connection	see Annexes to this ETA
Design Resistance in combination of tension and shear forces (interaction)	see Annexes to this ETA
Check of Bending Capacity in case of constraining forces due to temperature	see Annexes to this ETA
Durability	No performance assessed

### 3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

## 4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD 330047-01-0602, the applicable European legal act is:  
Commission Decision 98/214/EC, amended by 2001/596/EC.

The system to be applied is: 2+

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

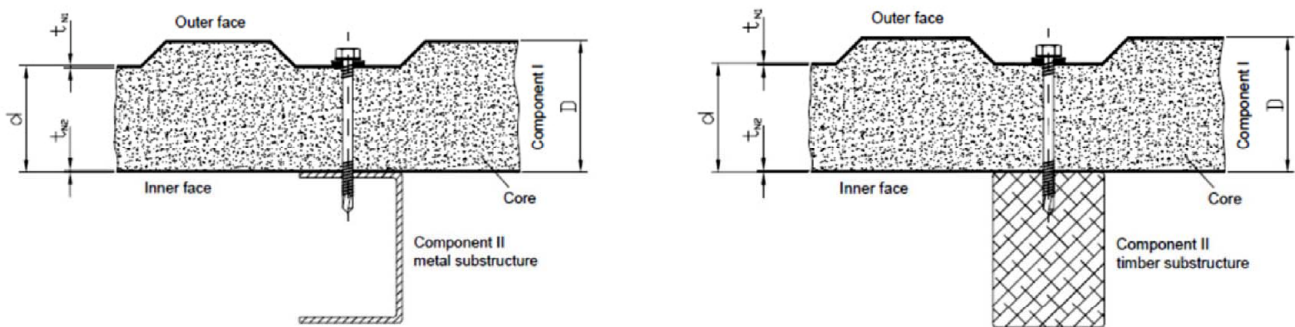
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 13 November 2023 by the Deutsches Institut für Bautechnik

BD Dr.-Ing. Ronald Schwuchow  
Head of Section

*beglaubigt:*  
Ortmann

Examples of execution and connection



Dimensions and Materials

Design relevant materials and dimensions are indicated in the Annexes of the fastening screws:

Fastener	Material of the fastening screw
Washer	Metal material of the sealing washer
Component I	Material of the sandwich panel (outer skin and inner skin)
Component II	Material of the supporting substructure

d, D	Thickness of component I at the fastening position
t <sub>N1</sub>	Thickness of the outer skin of component I
t <sub>N2</sub>	Thickness of the inner skin of component I
t <sub>II</sub>	Thickness of component II made of metal
l <sub>ef</sub>	Effective screw-in length in component II made of timber (without drill point)
l <sub>g</sub>	Screw-in length in component II made of timber (with drill point)
d <sub>pd</sub>	Pre-drill diameter of component I and II

The thickness t<sub>II</sub> corresponds to the load-bearing screw-in length of the fastening screw in component II, if the load-bearing screw-in length does not cover the entire component thickness.

Performance characteristics

The design relevant performance characteristics of a connection are indicated in the Annexes of the fastening screws:

N <sub>R,k</sub>	Characteristic value of tension resistance
V <sub>R,k</sub>	Characteristic value of shear resistance
max. U	Maximum allowed head displacement of the fastening screw

In some cases component-specific performance characteristics are indicated for an individual calculation of the design relevant performance characteristics of a connection:

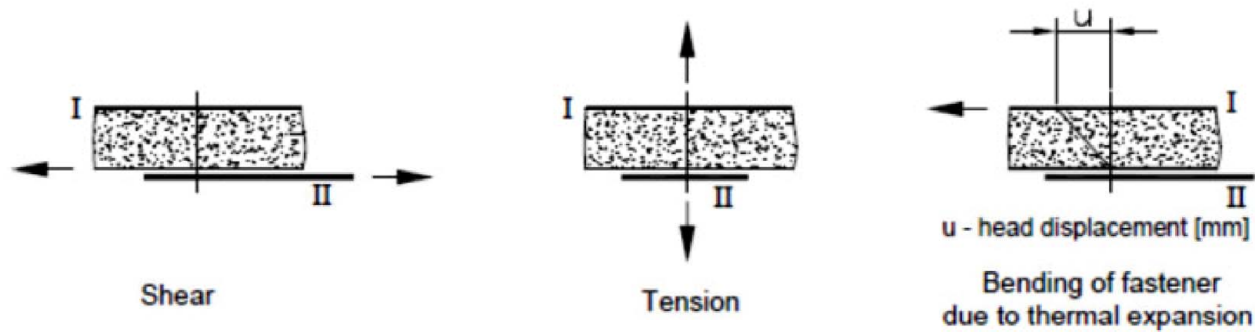
N <sub>R,k,II</sub>	Characteristic value of pull-out resistance for component II
M <sub>y,Rk</sub>	Characteristic value of yield moment of the fastening screw for component II made of timber
f <sub>ax,k</sub>	Characteristic value of withdrawal strength for component II made of timber
V <sub>R,II,k</sub>	Characteristic value of hole bearing resistance for component II
f <sub>h,k</sub>	Characteristic value of embedding strength for component II made of timber

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

Terms and explanations

Annex 1

Occurred loadings of a connection



Design values

The design values of tension and shear resistance of a connection have to be determined as following:

- $N_{R,d}$

Design value of tension resistance
- $V_{R,d}$

Design value of shear resistance
- $\gamma_M$

Partial safety factor

The recommended partial safety factor  $\gamma_M$  is 1.33, provided no partial safety factor is given in national regulations or national Annexes to Eurocode 3

Special conditions

If the component thickness  $t_{N1}$ ,  $t_{N2}$  or  $t_{II}$  lies in between two indicated component thicknesses, the characteristic value may be calculated by linear interpolation.

For asymmetric **components II** made of metal (e.g. Z- or C-shaped profiles) with component thickness  $t_{II} < 3$  mm, the characteristic value  $N_{R,k}$  has to be reduced to 70%.

In case of combined loading by tension and shear forces the following interaction equation has to be taken into account:

- $N_{S,d}$

Design value of the applied tension forces
- $V_{S,d}$

Design value of the applied shear forces
- $$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \leq 1,0$$

Head displacement

The head displacement of the fastening screw as a result of thermal expansion of the outer skin of the sandwich panel may not exceed the maximum allowed head displacement of the fastening screw.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures	Annex 2
Design	

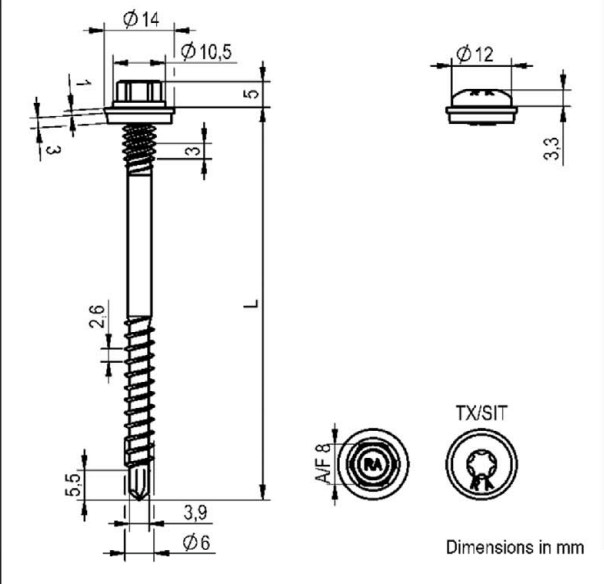
**Component II made of timber**

$N_{R,II,k}$  is determined according to EN 1995-1-1:2014 + A1:2008, equation (8.40a), with  $f_{ax,k}$  given in the Annex of the fastening screw.  
 $V_{R,II,k}$  is determined according to EN 1995-1-1:2004 + A1:2008, equation (8.9), with  $M_{y,Rk}$  given in the Annex of the fastening screw and  $f_{h,k}$  according to EN 1995-1-1:2014 + A1:2008, equation (8.15) and equation (8.16).

**Installation conditions**

- The installation is carried out according to manufacturer’s instruction.
- The load-bearing screw-in length of the fastening screw specified by the manufacturer has to be taken into account.
- The fastening screws have to be processed with suitable drill driver (e.g. cordless drill driver with depth control).
- The use of impact wrench is not allowed.
- The fastening screws have to be fixed rectangular to the surface of the component.
- Component I** and **component II** have to be in direct contact to each other.
- The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures	Annex 3
Design and installation	

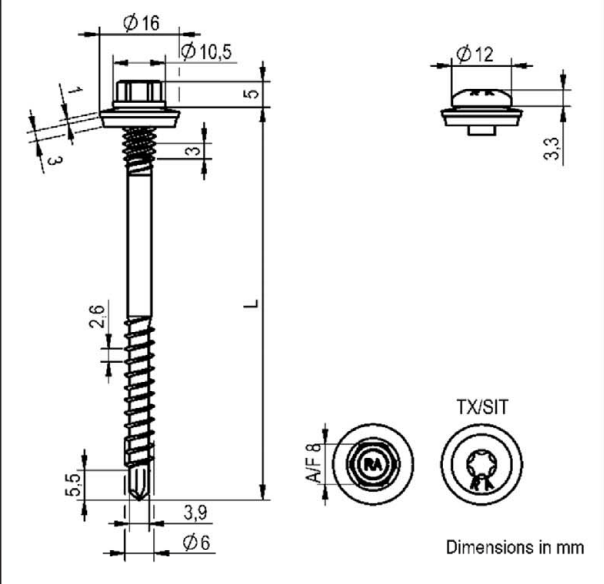
	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346</p>
<p>Drilling performance: <math>\Sigma t_i \leq 3.0</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	4.00	5.00	6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	-	-	-	-	-	-	-
	0.50	-	0.93	0.93	0.93	-	-	-	-	-	-	-
	0.55	-	1.09	1.09	1.09	-	-	-	-	-	-	-
	0.63	-	1.35	1.35	1.35	-	-	-	-	-	-	-
	0.75	-	1.91	1.91	1.91	-	-	-	-	-	-	-
	0.88	-	2.30	2.30	2.30	-	-	-	-	-	-	-
	1.00	-	2.81	2.81	2.81	-	-	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.00	1.00	1.00	-	-	-	-	-	-	-
	0.45	-	1.12	1.12	1.12	-	-	-	-	-	-	-
	0.50	-	1.23	1.23	1.23	-	-	-	-	-	-	-
	0.55	-	1.57	1.57	1.57	-	-	-	-	-	-	-
	0.60	-	1.91	1.91	1.91	-	-	-	-	-	-	-
	0.63	-	2.11	2.11	2.11	-	-	-	-	-	-	-
	0.70	-	2.66	2.66	2.66	-	-	-	-	-	-	-
	0.75	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.88	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	1.00	-	2.84	2.84	2.84	-	-	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	2.84	2.84	2.84	-	-	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.2	5.3	4.6	-	-	-	-	-	-	-
	40	-	8.2	7.0	6.1	-	-	-	-	-	-	-
	50	-	10.3	8.8	7.7	-	-	-	-	-	-	-
	60	-	12.3	10.5	9.2	-	-	-	-	-	-	-
	70	-	14.4	12.3	10.7	-	-	-	-	-	-	-
	80	-	16.4	14.0	12.2	-	-	-	-	-	-	-
	100	-	20.5	17.5	15.3	-	-	-	-	-	-	-
	120	-	24.7	21.1	18.4	-	-	-	-	-	-	-
	≥140	-	28.8	24.6	21.4	-	-	-	-	-	-	-

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-r-(FK-)(P-)6,0xL  
with sealing washer  $\geq \varnothing 14$  mm

Annex 4

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346</p>
<p>Drilling performance: <math>\Sigma t_i \leq 3.0</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

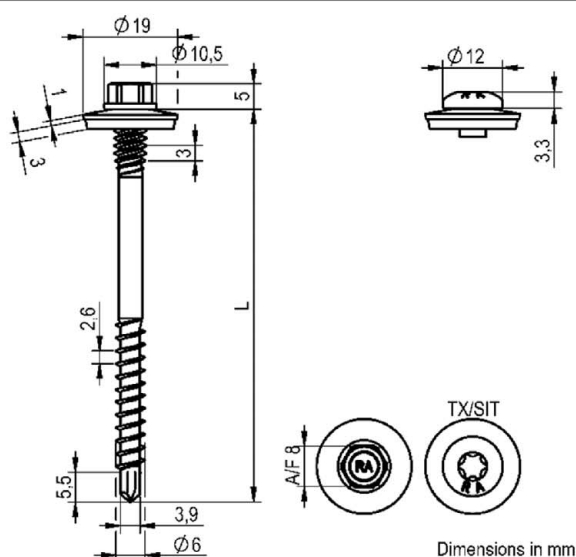
$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	4.00	5.00	6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	-	-	-	-	-	-	-
	0.50	-	0.93	0.93	0.93	-	-	-	-	-	-	-
	0.55	-	1.09	1.09	1.09	-	-	-	-	-	-	-
	0.63	-	1.35	1.35	1.35	-	-	-	-	-	-	-
	0.75	-	1.91	1.91	1.91	-	-	-	-	-	-	-
	0.88	-	2.30	2.30	2.30	-	-	-	-	-	-	-
	1.00	-	2.81	2.81	2.81	-	-	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	-	-	-	-	-	-	-
	0.45	-	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	-	-	-	-	-	-	-
	0.50	-	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	-	-	-	-	-	-	-
	0.55	-	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	-	-	-	-	-	-	-
	0.60	-	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	-	-	-	-	-	-	-
	0.63	-	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	-	-	-	-	-	-	-
	0.70	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.75	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.88	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	1.00	-	2.84	2.84	2.84	-	-	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	2.84	2.84	2.84	-	-	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.2	5.3	4.6	-	-	-	-	-	-	-
	40	-	8.2	7.0	6.1	-	-	-	-	-	-	-
	50	-	10.3	8.8	7.7	-	-	-	-	-	-	-
	60	-	12.3	10.5	9.2	-	-	-	-	-	-	-
	70	-	14.4	12.3	10.7	-	-	-	-	-	-	-
	80	-	16.4	14.0	12.2	-	-	-	-	-	-	-
	100	-	20.5	17.5	15.3	-	-	-	-	-	-	-
	120	-	24.7	21.1	18.4	-	-	-	-	-	-	-
	≥140	-	28.8	24.6	21.4	-	-	-	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-r-(FK-)(P-)6,0xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 5



Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
Component I:	S280GD to S550GD – EN 10346
Component II:	S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346

Drilling performance:  $\Sigma t_i \leq 3.0 \text{ mm}$

Timber substructure:	Performance not assessed
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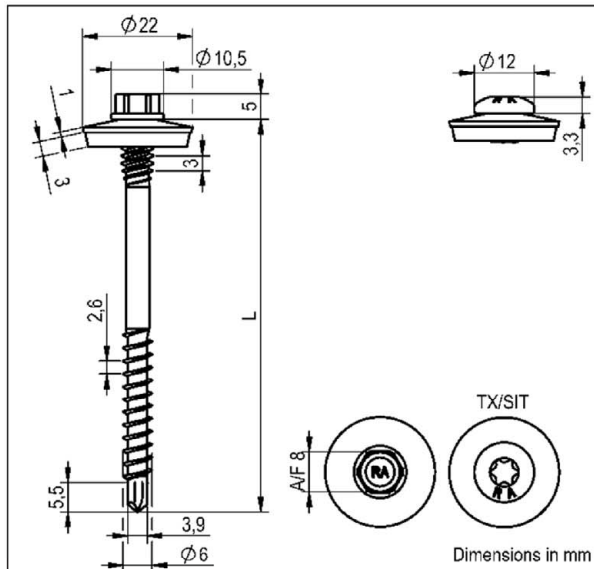
$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	4.00	5.00	6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	-	-	-	-	-	-	-
	0.50	-	0.93	0.93	0.93	-	-	-	-	-	-	-
	0.55	-	1.09	1.09	1.09	-	-	-	-	-	-	-
	0.63	-	1.35	1.35	1.35	-	-	-	-	-	-	-
	0.75	-	1.91	1.91	1.91	-	-	-	-	-	-	-
	0.88	-	2.30	2.30	2.30	-	-	-	-	-	-	-
	1.00	-	2.81	2.81	2.81	-	-	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.59	1.59	1.59	-	-	-	-	-	-	-
	0.45	-	1.79	1.79	1.79	-	-	-	-	-	-	-
	0.50	-	1.98	1.98	1.98	-	-	-	-	-	-	-
	0.55	-	2.18	2.18	2.18	-	-	-	-	-	-	-
	0.60	-	2.39	2.39	2.39	-	-	-	-	-	-	-
	0.63	-	2.51	2.51	2.51	-	-	-	-	-	-	-
	0.70	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.75	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.88	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	1.00	-	2.84	2.84	2.84	-	-	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	2.84	2.84	2.84	-	-	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.2	5.3	4.6	-	-	-	-	-	-	-
	40	-	8.2	7.0	6.1	-	-	-	-	-	-	-
	50	-	10.3	8.8	7.7	-	-	-	-	-	-	-
	60	-	12.3	10.5	9.2	-	-	-	-	-	-	-
	70	-	14.4	12.3	10.7	-	-	-	-	-	-	-
	80	-	16.4	14.0	12.2	-	-	-	-	-	-	-
	100	-	20.5	17.5	15.3	-	-	-	-	-	-	-
	120	-	24.7	21.1	18.4	-	-	-	-	-	-	-
	≥140	-	28.8	24.6	21.4	-	-	-	-	-	-	-

### Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

**RP-r-(FK-)(P)-6,0xL**  
with sealing washer  $\geq \varnothing 19 \text{ mm}$

## Annex 6





Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: S235 to S275 – EN 10025-1  
S280GD to S350GD – EN 10346

Drilling performance:  $\Sigma t_i \leq 3.0$  mm

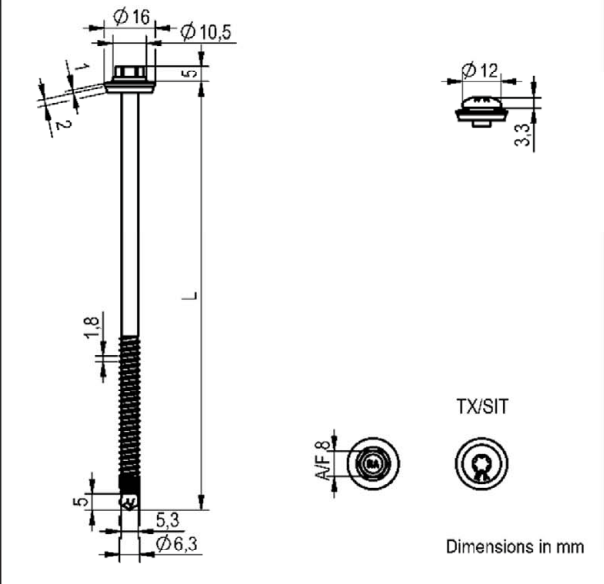
Timber substructure: Performance not assessed

$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	4.00	5.00	6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	-	-	-	-	-	-	-
	0.50	-	0.93	0.93	0.93	-	-	-	-	-	-	-
	0.55	-	1.09	1.09	1.09	-	-	-	-	-	-	-
	0.63	-	1.35	1.35	1.35	-	-	-	-	-	-	-
	0.75	-	1.91	1.91	1.91	-	-	-	-	-	-	-
	0.88	-	2.30	2.30	2.30	-	-	-	-	-	-	-
	1.00	-	2.81	2.81	2.81	-	-	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.70	1.70	1.70	-	-	-	-	-	-	-
	0.45	-	1.84	1.84	1.84	-	-	-	-	-	-	-
	0.50	-	1.98	1.98	1.98	-	-	-	-	-	-	-
	0.55	-	2.33	2.33	2.33	-	-	-	-	-	-	-
	0.60	-	2.82	2.82	2.82	-	-	-	-	-	-	-
	0.63	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.70	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.75	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	0.88	-	2.84	2.84	2.84	-	-	-	-	-	-	-
	1.00	-	2.84	2.84	2.84	-	-	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	2.84	2.84	2.84	-	-	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.2	5.3	4.6	-	-	-	-	-	-	-
	40	-	8.2	7.0	6.1	-	-	-	-	-	-	-
	50	-	10.3	8.8	7.7	-	-	-	-	-	-	-
	60	-	12.3	10.5	9.2	-	-	-	-	-	-	-
	70	-	14.4	12.3	10.7	-	-	-	-	-	-	-
	80	-	16.4	14.0	12.2	-	-	-	-	-	-	-
	100	-	20.5	17.5	15.3	-	-	-	-	-	-	-
	120	-	24.7	21.1	18.4	-	-	-	-	-	-	-
	≥140	-	28.8	24.6	21.4	-	-	-	-	-	-	-

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-r-(FK-)(P-)6,0xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 7

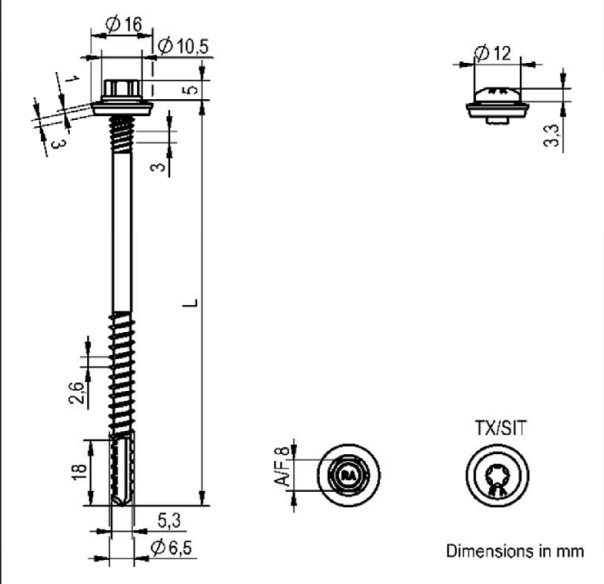
	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346 S450GD ≤ 3.0 mm – EN 10346</p>
<p>Drilling performance: <math>\Sigma t \leq 4.0</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.25	1.50	2.00	2.50	3.00	4.00	6.00	-	-	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	-	0.86	0.86	0.86	-	-	-	-	-	-
	0.50	-	-	1.35	1.35	1.35	-	-	-	-	-	-
	0.55	-	-	1.60	1.60	1.60	-	-	-	-	-	-
	0.63	-	-	2.00	2.00	2.00	-	-	-	-	-	-
	0.75	-	-	2.60	2.60	2.60	-	-	-	-	-	-
	0.88	-	-	3.50	3.50	3.50	-	-	-	-	-	-
	1.00	-	-	3.50	3.50	3.50	-	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	-	1.59	1.59	1.59	-	-	-	-	-	-
	0.45	-	-	1.79	1.79	1.79	-	-	-	-	-	-
	0.50	-	-	1.88	1.88	1.88	-	-	-	-	-	-
	0.55	-	-	2.00	2.00	2.00	-	-	-	-	-	-
	0.60	-	-	2.50	2.50	2.50	-	-	-	-	-	-
	0.63	-	-	2.80	2.80	2.80	-	-	-	-	-	-
	0.70	-	-	3.26	3.26	3.26	-	-	-	-	-	-
	0.75	-	-	3.60	3.60	3.60	-	-	-	-	-	-
	0.88	-	-	3.60	3.60	3.60	-	-	-	-	-	-
	1.00	-	-	3.60	3.60	3.60	-	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	-	3.60	3.60	3.60	-	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	-	8.0	8.0	8.0	-	-	-	-	-	-
	40	-	-	11.0	11.0	11.0	-	-	-	-	-	-
	50	-	-	15.0	15.0	15.0	-	-	-	-	-	-
	60	-	-	17.5	17.5	17.5	-	-	-	-	-	-
	70	-	-	20.0	20.0	20.0	-	-	-	-	-	-
	≥80	-	-	23.0	23.0	23.0	-	-	-	-	-	-

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-C3-(FK)-6,3  
with sealing washer  $\geq \varnothing 16$  mm

Annex 8

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346</p>
<p>Drilling performance: <math>\Sigma t_i \leq 5.0</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	-	-
	0.50	-	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	-	-
	0.55	-	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	-	-
	0.63	-	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	-	-
	0.75	-	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	-	-
	0.88	-	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	-	-
	1.00	-	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	-	-
	0.45	-	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	-	-
	0.50	-	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	-	-
	0.55	-	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	-	-
	0.60	-	1.80	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	-	-
	0.63	-	1.80	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	-	-
	0.70	-	1.80	2.49 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	-	-
	0.75	-	1.80	2.49 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	-	-
	0.88	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	-	-
	1.00	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]		-	1.80	2.49 <sup>c)</sup>	3.17 <sup>c)</sup>	4.52 <sup>c)</sup>	5.86 <sup>c)</sup>	6.54 <sup>c)</sup>	7.21 <sup>c)</sup>	8.17 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	-	6.0	5.1	4.5	3.6	3.0	2.6	2.3	2.1	-	-
	40	-	8.0	6.9	6.0	4.8	4.0	3.4	3.0	2.8	-	-
	50	-	10.0	8.6	7.5	6.0	5.0	4.3	3.8	3.5	-	-
	60	-	12.0	10.3	9.0	7.2	6.0	5.1	4.5	4.2	-	-
	70	-	14.0	12.0	10.5	8.4	7.0	6.0	5.3	4.9	-	-
	80	-	16.0	13.7	12.0	9.6	8.0	6.9	6.0	5.6	-	-
	100	-	20.0	17.1	15.0	12.0	10.0	8.6	7.5	7.0	-	-
	120	-	24.0	20.6	18.0	14.4	12.0	10.3	9.0	8.4	-	-
	≥140	-	28.0	24.0	21.0	16.8	14.0	12.0	10.5	9.8	-	-

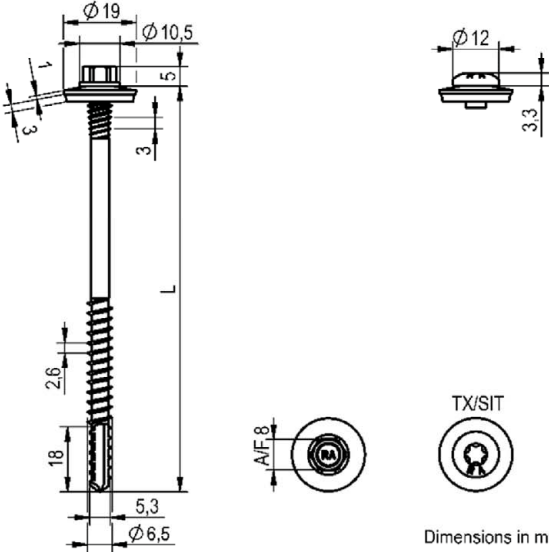
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-WS-(FK-)(P-)6,5xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 12

	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S350GD – EN 10346
Component II:		
S235 to S275 – EN 10025-1		
S280GD to S350GD – EN 10346		
Drilling performance: $\Sigma t \leq 5.0$ mm		
Timber substructure: Performance not assessed		

$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	-	-
	0.50	-	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	-	-
	0.55	-	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	-	-
	0.63	-	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	-	-
	0.75	-	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	-	-
	0.88	-	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	-	-
	1.00	-	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-
	0.45	-	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	-	-
	0.50	-	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	-	-
	0.55	-	1.80	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	-	-
	0.60	-	1.80	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	-	-
	0.63	-	1.80	2.49 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	-	-
	0.70	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	-	-
	0.75	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	-	-
	0.88	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	-	-
	1.00	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]		-	1.80	2.49 <sup>c)</sup>	3.17 <sup>c)</sup>	4.52 <sup>c)</sup>	5.86 <sup>c)</sup>	6.54 <sup>c)</sup>	7.21 <sup>c)</sup>	8.17 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	-	6.0	5.1	4.5	3.6	3.0	2.6	2.3	2.1	-	-
	40	-	8.0	6.9	6.0	4.8	4.0	3.4	3.0	2.8	-	-
	50	-	10.0	8.6	7.5	6.0	5.0	4.3	3.8	3.5	-	-
	60	-	12.0	10.3	9.0	7.2	6.0	5.1	4.5	4.2	-	-
	70	-	14.0	12.0	10.5	8.4	7.0	6.0	5.3	4.9	-	-
	80	-	16.0	13.7	12.0	9.6	8.0	6.9	6.0	5.6	-	-
	100	-	20.0	17.1	15.0	12.0	10.0	8.6	7.5	7.0	-	-
	120	-	24.0	20.6	18.0	14.4	12.0	10.3	9.0	8.4	-	-
	≥140	-	28.0	24.0	21.0	16.8	14.0	12.0	10.5	9.8	-	-

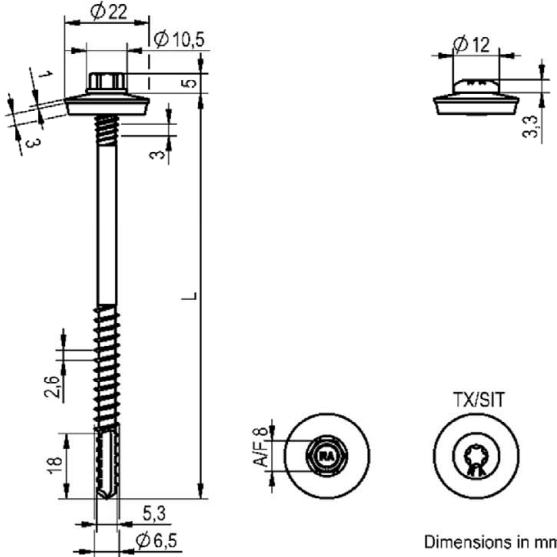
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-WS-(FK-)(P)-6,5xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 13

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346</p>
<p>Drilling performance: <math>\Sigma t \leq 5.0</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	-	-
	0.50	-	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	-	-
	0.55	-	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	-	-
	0.63	-	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	-	-
	0.75	-	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	-	-
	0.88	-	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	-	-
	1.00	-	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	-	-
	0.45	-	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	-	-
	0.50	-	1.80	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	-	-
	0.55	-	1.80	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	-	-
	0.60	-	1.80	2.49 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	-	-
	0.63	-	1.80	2.49 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	-	-
	0.70	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	-	-
	0.75	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	-	-
	0.88	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.52 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	-	-
	1.00	-	1.80	2.49 <sup>a)</sup>	3.17 <sup>a)</sup>	4.52 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]		-	1.80	2.49 <sup>c)</sup>	3.17 <sup>c)</sup>	4.52 <sup>c)</sup>	5.86 <sup>c)</sup>	6.54 <sup>c)</sup>	7.21 <sup>c)</sup>	8.17 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	-	6.0	5.1	4.5	3.6	3.0	2.6	2.3	2.1	-	-
	40	-	8.0	6.9	6.0	4.8	4.0	3.4	3.0	2.8	-	-
	50	-	10.0	8.6	7.5	6.0	5.0	4.3	3.8	3.5	-	-
	60	-	12.0	10.3	9.0	7.2	6.0	5.1	4.5	4.2	-	-
	70	-	14.0	12.0	10.5	8.4	7.0	6.0	5.3	4.9	-	-
	80	-	16.0	13.7	12.0	9.6	8.0	6.9	6.0	5.6	-	-
	100	-	20.0	17.1	15.0	12.0	10.0	8.6	7.5	7.0	-	-
	120	-	24.0	20.6	18.0	14.4	12.0	10.3	9.0	8.4	-	-
	≥140	-	28.0	24.0	21.0	16.8	14.0	12.0	10.5	9.8	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

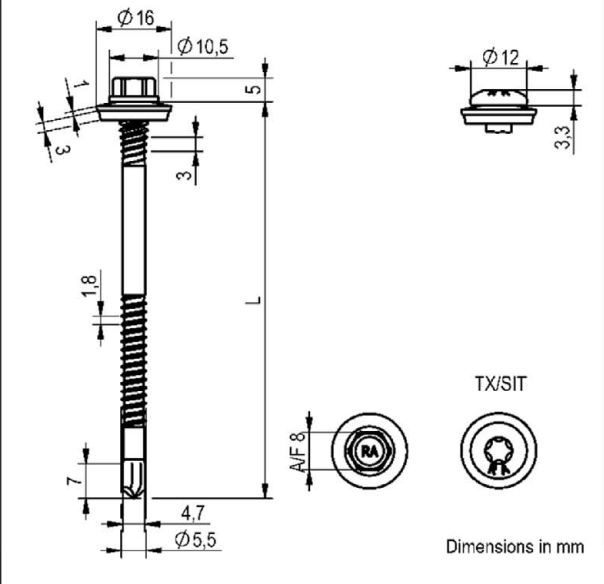
Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-WS-(FK-)(P)-6,5xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 14



	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346 S450GD ≤ 3.0 mm – EN 10346</p>
<p>Drilling performance: <math>\Sigma t_i \leq 5.25</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	≥6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.63	0.63	0.63	0.63	0.63	0.63	0.63	-	-	-	-
	0.50	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-	-	-	-
	0.55	1.30	1.30	1.30	1.40	1.40	1.40	1.40	-	-	-	-
	0.63	1.52	1.52	1.60	1.70	1.80	1.80	2.00	-	-	-	-
	0.75	1.84	1.84	1.90	2.10	2.30	2.30	2.60	-	-	-	-
	0.88	2.52	2.52	2.70	2.90	3.10	3.10	3.40	-	-	-	-
	1.00	3.20	3.20	3.50	3.70	3.90	3.90	4.20	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.05	1.05	1.05	1.05	1.05	1.05	1.05	-	-	-	-
	0.45	1.34	1.34	1.34	1.34	1.34	1.34	1.34	-	-	-	-
	0.50	1.63	1.63	1.63	1.63	1.63	1.63	1.63	-	-	-	-
	0.55	1.68	1.82	1.82	1.82	1.82	1.82	1.82	-	-	-	-
	0.60	1.68	1.94	2.00	2.00	2.00	2.00	2.00	-	-	-	-
	0.63	1.68	1.94	2.11	2.11	2.11	2.11	2.11	-	-	-	-
	0.70	1.68	1.94	2.20	2.38	2.38	2.38	2.38	-	-	-	-
	0.75	1.68	1.94	2.20	2.57	2.57	2.57	2.57	-	-	-	-
	0.88	1.68	1.94	2.20	3.05	3.05	3.05	3.05	-	-	-	-
	1.00	1.68	1.94	2.20	3.25	3.51	3.51	3.51	-	-	-	-
$N_{R,k,II}$ [kN]		1.68	1.94	2.20	3.25	4.30	5.63	6.95 <sup>c)</sup>	-	-	-	-
max. U [mm] d, D [mm]	30	14.0	12.0	12.0	8.4	7.2	6.4	6.4	-	-	-	-
	40	17.5	15.0	15.0	10.4	9.2	7.6	7.6	-	-	-	-
	50	21.0	18.0	18.0	12.4	11.2	8.8	8.8	-	-	-	-
	60	24.5	21.0	21.0	13.6	12.8	10.8	10.8	-	-	-	-
	70	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-
	≥80	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-(7)K-(FK-)(P-)5,5xL  
with sealing washer ≥ ø 16 mm

Annex 15

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346 S450GD ≤ 3.0 mm – EN 10346</p>
<p>Drilling performance: <math>\Sigma t \leq 5.25</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	≥6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.63	0.63	0.63	0.63	0.63	0.63	0.63	-	-	-	-
	0.50	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-	-	-	-
	0.55	1.30	1.30	1.30	1.40	1.40	1.40	1.40	-	-	-	-
	0.63	1.52	1.52	1.60	1.70	1.80	1.80	2.00	-	-	-	-
	0.75	1.84	1.84	1.90	2.10	2.30	2.30	2.60	-	-	-	-
	0.88	2.52	2.52	2.70	2.90	3.10	3.10	3.40	-	-	-	-
	1.00	3.20	3.20	3.50	3.70	3.90	3.90	4.20	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	-	-	-	-
	0.45	1.68	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	-	-	-	-
	0.50	1.68	1.94	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	-	-	-	-
	0.55	1.68	1.94	2.18	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	-	-	-	-
	0.60	1.68	1.94	2.20	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	-	-	-	-
	0.63	1.68	1.94	2.20	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	-	-	-	-
	0.70	1.68	1.94	2.20	3.25	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	-	-	-	-
	0.75	1.68	1.94	2.20	3.25	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	-	-	-	-
	0.88	1.68	1.94	2.20	3.25	4.30	4.62 <sup>a)</sup>	4.62 <sup>a)</sup>	-	-	-	-
	1.00	1.68	1.94	2.20	3.25	4.30	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	-	-	-	-
$N_{R,k,II}$ [kN]		1.68	1.94	2.20	3.25	4.30	5.63	6.95 <sup>c)</sup>	-	-	-	-
max. U [mm] d, D [mm]	30	14.0	12.0	12.0	8.4	7.2	6.4	6.4	-	-	-	-
	40	17.5	15.0	15.0	10.4	9.2	7.6	7.6	-	-	-	-
	50	21.0	18.0	18.0	12.4	11.2	8.8	8.8	-	-	-	-
	60	24.5	21.0	21.0	13.6	12.8	10.8	10.8	-	-	-	-
	70	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-
	≥80	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-

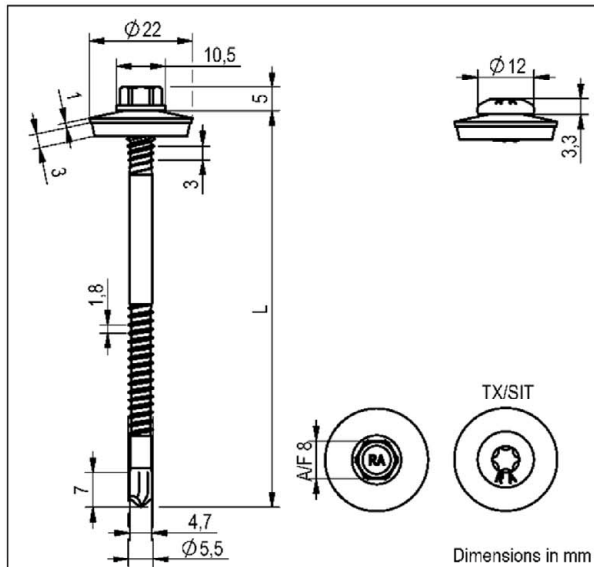
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-(7)K-(FK-)(P)-5,5xL  
with sealing washer ≥ Ø 19 mm

Annex 16



Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: S235 to S275 – EN 10025-1  
S280GD to S350GD – EN 10346  
S450GD ≤ 3.0 mm – EN 10346

Drilling performance:  $\Sigma t \leq 5.25$  mm

Timber substructure: Performance not assessed

$t_{II}$ [mm]		1.50	1.75	2.00	2.50	3.00	3.50	4.00	5.00	≥6.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.63	0.63	0.63	0.63	0.63	0.63	0.63	-	-	-	-
	0.50	1.08	1.08	1.08	1.08	1.08	1.08	1.08	-	-	-	-
	0.55	1.30	1.30	1.30	1.40	1.40	1.40	1.40	-	-	-	-
	0.63	1.52	1.52	1.60	1.70	1.80	1.80	2.00	-	-	-	-
	0.75	1.84	1.84	1.90	2.10	2.30	2.30	2.60	-	-	-	-
	0.88	2.52	2.52	2.70	2.90	3.10	3.10	3.40	-	-	-	-
	1.00	3.20	3.20	3.50	3.70	3.90	3.90	4.20	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.68	1.70	1.70	1.70	1.70	1.70	1.70	-	-	-	-
	0.45	1.68	1.84	1.84	1.84	1.84	1.84	1.84	-	-	-	-
	0.50	1.68	1.94	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	-	-	-	-
	0.55	1.68	1.94	2.20	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	-	-	-	-
	0.60	1.68	1.94	2.20	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	-	-	-	-
	0.63	1.68	1.94	2.20	3.12	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	-	-	-	-
	0.70	1.68	1.94	2.20	3.25	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	-	-	-	-
	0.75	1.68	1.94	2.20	3.25	4.30	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	-	-	-	-
	0.88	1.68	1.94	2.20	3.25	4.30	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	-	-	-	-
	1.00	1.68	1.94	2.20	3.25	4.30	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	-	-	-	-
$N_{R,k,II}$ [kN]		1.68	1.94	2.20	3.25	4.30	5.63	6.95 <sup>c)</sup>				
max. U [mm] d, D [mm]	30	14.0	12.0	12.0	8.4	7.2	6.4	6.4	-	-	-	-
	40	17.5	15.0	15.0	10.4	9.2	7.6	7.6	-	-	-	-
	50	21.0	18.0	18.0	12.4	11.2	8.8	8.8	-	-	-	-
	60	24.5	21.0	21.0	13.6	12.8	10.8	10.8	-	-	-	-
	70	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-
	≥80	28.0	24.0	24.0	19.0	18.0	16.0	16.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-(7)K-(FK-)(P)-5,5xL  
with sealing washer ≥ Ø 22 mm

Annex 17



	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
Component II:		
S235 to S275 – EN 10025-1		
S280GD to S350GD – EN 10346		
S450GD ≤ 3.0 mm – EN 10346		
Drilling performance: $\Sigma t \leq 6.0$ mm		
Timber substructure: Performance not assessed		

$t_{II}$ [mm]		1.50	2.00	2.50	3.00	4.00	5.00	-	-	-	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	-	-	-	-	-
	0.50	1.35	1.35	1.35	1.35	1.35	1.35	-	-	-	-	-
	0.55	1.60	1.60	1.60	1.60	1.60	1.60	-	-	-	-	-
	0.63	2.00	2.00	2.00	2.00	2.00	2.00	-	-	-	-	-
	0.75	2.60	2.60	2.60	2.60	2.60	2.60	-	-	-	-	-
	0.88	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
	1.00	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	-	-	-	-	-
	0.45	1.70	1.74 <sup>a)</sup>	1.74 <sup>a)</sup>	1.74 <sup>a)</sup>	1.74 <sup>a)</sup>	1.74 <sup>a)</sup>	-	-	-	-	-
	0.50	1.70	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	-	-	-	-	-
	0.55	1.70	2.00	2.00	2.00	2.00	2.00	-	-	-	-	-
	0.60	1.70	2.10	2.97	2.97	2.97	2.97	-	-	-	-	-
	0.63	1.70	2.10	3.30	3.30	3.30	3.30	-	-	-	-	-
	0.70	1.70	2.10	3.35	3.59	3.59	3.59	-	-	-	-	-
	0.75	1.70	2.10	3.35	3.80	3.80	3.80	-	-	-	-	-
	0.88	1.70	2.10	3.35	4.40	4.40	4.40	-	-	-	-	-
	1.00	1.70	2.10	3.35	4.60	4.90	4.90	-	-	-	-	-
$N_{R,k,II}$ [kN]		1.70	2.10	3.35	4.60	6.60	6.60	-	-	-	-	-
max. U [mm] d, D [mm]	30	12.0	8.0	8.0	8.0	5.0	5.0	-	-	-	-	-
	40	13.5	11.0	11.0	11.0	7.0	7.0	-	-	-	-	-
	50	15.0	15.0	15.0	15.0	11.0	9.0	-	-	-	-	-
	60	17.5	17.5	17.5	17.5	13.0	10.0	-	-	-	-	-
	70	20.0	20.0	20.0	20.0	15.0	10.5	-	-	-	-	-
	80	23.0	23.0	23.0	23.0	17.0	12.0	-	-	-	-	-
	≥100	23.0	23.0	23.0	23.0	17.0	13.5	-	-	-	-	-

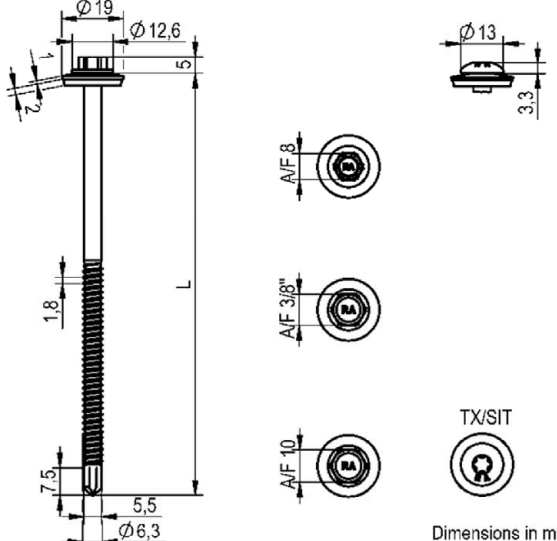
Index a): For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index b): For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-K-(FK-)(P)-6,3xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 18

	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
Component II:		
S235 to S275 – EN 10025-1		
S280GD to S350GD – EN 10346		
S450GD ≤ 3.0 mm – EN 10346		
Drilling performance: $\Sigma t \leq 6.0$ mm		
Timber substructure: Performance not assessed		

$t_{II}$ [mm]		1.50	2.00	2.50	3.00	4.00	5.00	-	-	-	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	-	-	-	-	-
	0.50	1.35	1.35	1.35	1.35	1.35	1.35	-	-	-	-	-
	0.55	1.60	1.60	1.60	1.60	1.60	1.60	-	-	-	-	-
	0.63	2.00	2.00	2.00	2.00	2.00	2.00	-	-	-	-	-
	0.75	2.60	2.60	2.60	2.60	2.60	2.60	-	-	-	-	-
	0.88	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
	1.00	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.70	1.83	1.83	1.83	1.83	1.83	-	-	-	-	-
	0.45	1.70	1.91	1.91	1.91	1.91	1.91	-	-	-	-	-
	0.50	1.70	1.99 <sup>a)</sup>	1.99 <sup>a)</sup>	1.99 <sup>a)</sup>	1.99 <sup>a)</sup>	1.99 <sup>a)</sup>	-	-	-	-	-
	0.55	1.70	2.10	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	-	-	-	-	-
	0.60	1.70	2.10	3.06 <sup>a)</sup>	3.06 <sup>a)</sup>	3.06 <sup>a)</sup>	3.06 <sup>a)</sup>	-	-	-	-	-
	0.63	1.70	2.10	3.35	3.38 <sup>a)</sup>	3.38 <sup>a)</sup>	3.38 <sup>a)</sup>	-	-	-	-	-
	0.70	1.70	2.10	3.35	3.89 <sup>a)</sup>	3.89 <sup>a)</sup>	3.89 <sup>a)</sup>	-	-	-	-	-
	0.75	1.70	2.10	3.35	4.26 <sup>a)</sup>	4.26 <sup>a)</sup>	4.26 <sup>a)</sup>	-	-	-	-	-
	0.88	1.70	2.10	3.35	4.60	4.79 <sup>a)</sup>	4.79 <sup>a)</sup>	-	-	-	-	-
	1.00	1.70	2.10	3.35	4.60	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	-	-	-	-	-
$N_{R,k,II}$ [kN]		1.70	2.10	3.35	4.60	6.60	6.60					
max. U [mm] d, D [mm]	30	12.0	8.0	8.0	8.0	5.0	5.0	-	-	-	-	-
	40	13.5	11.0	11.0	11.0	7.0	7.0	-	-	-	-	-
	50	15.0	15.0	15.0	15.0	11.0	9.0	-	-	-	-	-
	60	17.5	17.5	17.5	17.5	13.0	10.0	-	-	-	-	-
	70	20.0	20.0	20.0	20.0	15.0	10.5	-	-	-	-	-
	80	23.0	23.0	23.0	23.0	17.0	12.0	-	-	-	-	-
	≥100	23.0	23.0	23.0	23.0	17.0	13.5	-	-	-	-	-

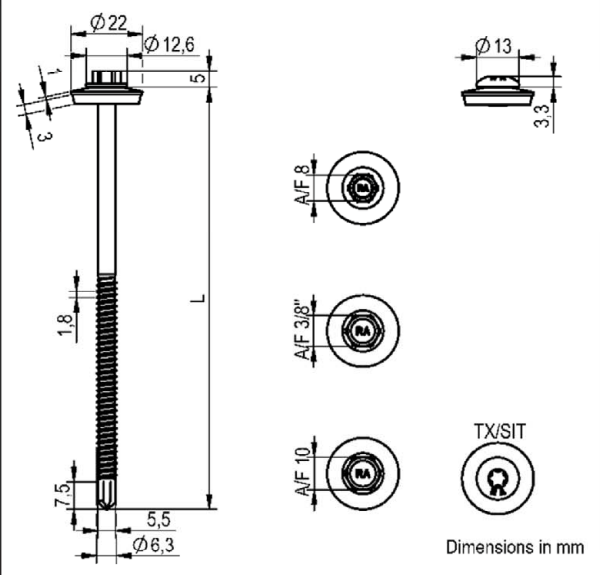
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K-(FK-)(P)-6,3xL  
with sealing washer ≥ Ø 19 mm

Annex 19

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346 S450GD ≤ 3.0 mm – EN 10346</p>
<p>Drilling performance: <math>\Sigma t \leq 6.0</math> mm</p>	
<p>Timber substructure: Performance not assessed</p>	

$t_{II}$ [mm]		1.50	2.00	2.50	3.00	4.00	5.00	-	-	-	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	-	-	-	-	-
	0.50	1.35	1.35	1.35	1.35	1.35	1.35	-	-	-	-	-
	0.55	1.60	1.60	1.60	1.60	1.60	1.60	-	-	-	-	-
	0.63	2.00	2.00	2.00	2.00	2.00	2.00	-	-	-	-	-
	0.75	2.60	2.60	2.60	2.60	2.60	2.60	-	-	-	-	-
	0.88	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
	1.00	3.20	3.50	3.50	3.50	3.50	3.50	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.70	2.07	2.07	2.07	2.07	2.07	-	-	-	-	-
	0.45	1.70	2.09	2.09	2.09	2.09	2.09	-	-	-	-	-
	0.50	1.70	2.10	2.11 <sup>a)</sup>	2.11 <sup>a)</sup>	2.11 <sup>a)</sup>	2.11 <sup>a)</sup>	-	-	-	-	-
	0.55	1.70	2.10	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	-	-	-	-	-
	0.60	1.70	2.10	3.15	3.15 <sup>a)</sup>	3.15 <sup>a)</sup>	3.15 <sup>a)</sup>	-	-	-	-	-
	0.63	1.70	2.10	3.35	3.46 <sup>a)</sup>	3.46 <sup>a)</sup>	3.46 <sup>a)</sup>	-	-	-	-	-
	0.70	1.70	2.10	3.35	4.20 <sup>a)</sup>	4.20 <sup>a)</sup>	4.20 <sup>a)</sup>	-	-	-	-	-
	0.75	1.70	2.10	3.35	4.60	4.72 <sup>a)</sup>	4.72 <sup>a)</sup>	-	-	-	-	-
	0.88	1.70	2.10	3.35	4.60	5.18 <sup>a)</sup>	5.18 <sup>a)</sup>	-	-	-	-	-
	1.00	1.70	2.10	3.35	4.60	5.60 <sup>a)</sup>	5.60 <sup>a)</sup>	-	-	-	-	-
$N_{R,k,II}$ [kN]		1.70	2.10	3.35	4.60	6.60	6.60					
max. U [mm] d, D [mm]	30	12.0	8.0	8.0	8.0	5.0	5.0	-	-	-	-	-
	40	13.5	11.0	11.0	11.0	7.0	7.0	-	-	-	-	-
	50	15.0	15.0	15.0	15.0	11.0	9.0	-	-	-	-	-
	60	17.5	17.5	17.5	17.5	13.0	10.0	-	-	-	-	-
	70	20.0	20.0	20.0	20.0	15.0	10.5	-	-	-	-	-
	80	23.0	23.0	23.0	23.0	17.0	12.0	-	-	-	-	-
	≥100	23.0	23.0	23.0	23.0	17.0	13.5	-	-	-	-	-

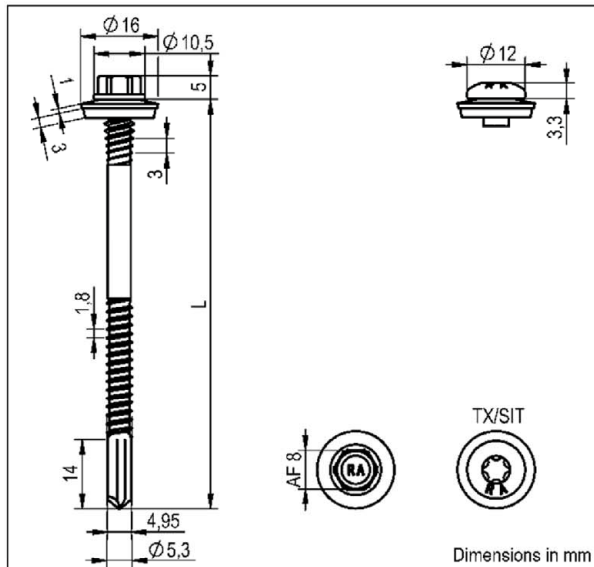
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K-(FK-)(P)-6,3xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 20



Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: S235 to S275 – EN 10025-1  
S280GD to S350GD – EN 10346

Drilling performance:  $\Sigma t \leq 11.25$  mm

Timber substructure: Performance not assessed

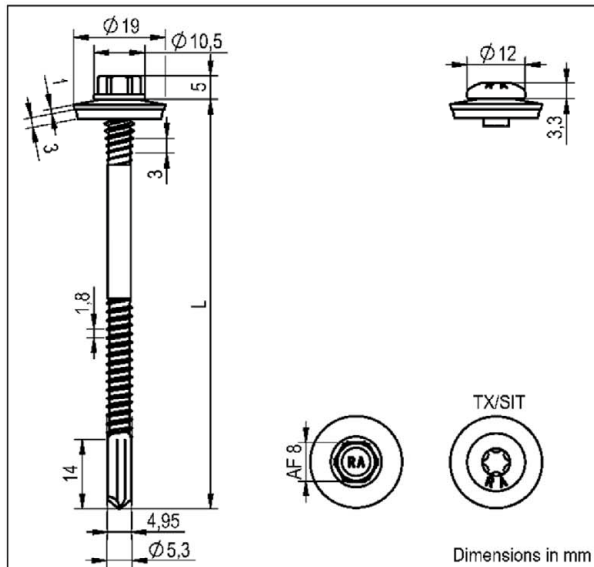
$t_{II}$ [mm]	3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	$\geq 16.00$	-	-
$V_{R,k}$ [kN]	0.40	-	0.77	0.77	0.77	0.77	0.77	-	-	-	-
$t_{N2}$ [mm]	0.50	-	1.19	1.19	1.19	1.19	1.19	-	-	-	-
	0.55	-	1.40	1.40	1.40	1.40	1.40	-	-	-	-
	0.63	-	1.80	1.80	1.80	1.80	1.80	-	-	-	-
	0.75	-	2.40	2.40	2.40	2.40	2.40	-	-	-	-
	0.88	-	3.20	3.20	3.20	3.20	3.20	-	-	-	-
	1.00	-	4.00	4.00	4.00	4.00	4.00	-	-	-	-
$N_{R,k}$ [kN]	0.40	-	1.05	1.05	1.05	1.05	1.05	-	-	-	-
$t_{N1}$ [mm]	0.45	-	1.34	1.34	1.34	1.34	1.34	-	-	-	-
	0.50	-	1.63	1.63	1.63	1.63	1.63	-	-	-	-
	0.55	-	1.82	1.82	1.82	1.82	1.82	-	-	-	-
	0.60	-	2.00	2.00	2.00	2.00	2.00	-	-	-	-
	0.63	-	2.11	2.11	2.11	2.11	2.11	-	-	-	-
	0.70	-	2.38	2.38	2.38	2.38	2.38	-	-	-	-
	0.75	-	2.57	2.57	2.57	2.57	2.57	-	-	-	-
	0.88	-	3.05	3.05	3.05	3.05	3.05	-	-	-	-
	1.00	-	3.51	3.51	3.51	3.51	3.51	-	-	-	-
$N_{R,k,II}$ [kN]	-	-	5.19	5.84	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	-	-	-	-
max. U [mm]	30	-	6.4	4.8	4.8	4.0	3.0	-	-	-	-
d, D [mm]	40	-	7.6	5.6	5.6	4.8	4.0	-	-	-	-
	50	-	8.8	6.8	6.8	5.6	4.8	-	-	-	-
	60	-	10.8	8.8	8.8	7.2	5.6	-	-	-	-
	70	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-
	$\geq 80$	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K12-(FK-)(P-)5,5xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 21



Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: S235 to S275 – EN 10025-1  
S280GD to S350GD – EN 10346

Drilling performance:  $\Sigma t \leq 11.25$  mm

Timber substructure: Performance not assessed

$t_{II}$ [mm]		3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	$\geq 16.00$	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.77	0.77	0.77	0.77	0.77	-	-	-	-	-
	0.50	-	1.19	1.19	1.19	1.19	1.19	-	-	-	-	-
	0.55	-	1.40	1.40	1.40	1.40	1.40	-	-	-	-	-
	0.63	-	1.80	1.80	1.80	1.80	1.80	-	-	-	-	-
	0.75	-	2.40	2.40	2.40	2.40	2.40	-	-	-	-	-
	0.88	-	3.20	3.20	3.20	3.20	3.20	-	-	-	-	-
	1.00	-	4.00	4.00	4.00	4.00	4.00	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	-	-	-	-	-
	0.45	-	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	-	-	-	-	-
	0.50	-	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	-	-	-	-	-
	0.55	-	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	-	-	-	-	-
	0.60	-	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	-	-	-	-	-
	0.63	-	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	-	-	-	-	-
	0.70	-	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	-	-	-	-	-
	0.75	-	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	-	-	-	-	-
	0.88	-	4.62 <sup>a)</sup>	4.62 <sup>a)</sup>	4.62 <sup>a)</sup>	4.62 <sup>a)</sup>	4.62 <sup>a)</sup>	-	-	-	-	-
	1.00	-	5.19	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	5.19	5.84	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.4	4.8	4.8	4.0	3.0	-	-	-	-	-
	40	-	7.6	5.6	5.6	4.8	4.0	-	-	-	-	-
	50	-	8.8	6.8	6.8	5.6	4.8	-	-	-	-	-
	60	-	10.8	8.8	8.8	7.2	5.6	-	-	-	-	-
	70	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-	-
	$\geq 80$	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

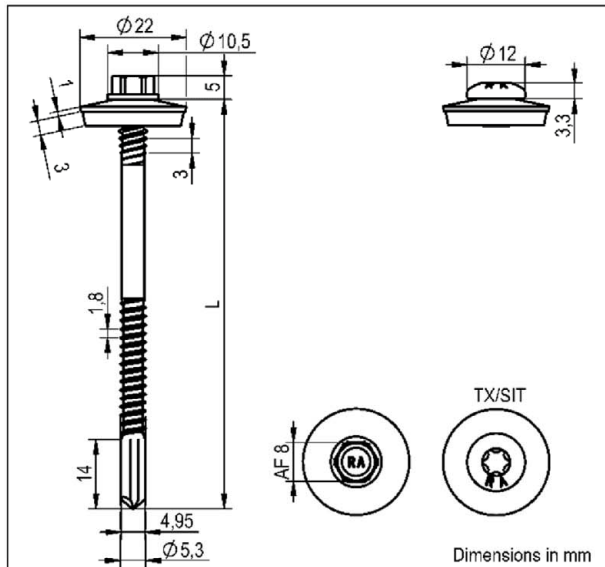
Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-K12-(FK-)(P-)5,xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 22





Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: S235 to S275 – EN 10025-1  
S280GD to S350GD – EN 10346

Drilling performance:  $\Sigma t \leq 11.25$  mm

Timber substructure: Performance not assessed

$t_{II}$ [mm]		3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	≥16.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	-	0.77	0.77	0.77	0.77	0.77	-	-	-	-	-
	0.50	-	1.19	1.19	1.19	1.19	1.19	-	-	-	-	-
	0.55	-	1.40	1.40	1.40	1.40	1.40	-	-	-	-	-
	0.63	-	1.80	1.80	1.80	1.80	1.80	-	-	-	-	-
	0.75	-	2.40	2.40	2.40	2.40	2.40	-	-	-	-	-
	0.88	-	3.20	3.20	3.20	3.20	3.20	-	-	-	-	-
	1.00	-	4.00	4.00	4.00	4.00	4.00	-	-	-	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	-	1.70	1.70	1.70	1.70	1.70	-	-	-	-	-
	0.45	-	1.84	1.84	1.84	1.84	1.84	-	-	-	-	-
	0.50	-	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	-	-	-	-	-
	0.55	-	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	-	-	-	-	-
	0.60	-	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	-	-	-	-	-
	0.63	-	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	-	-	-	-	-
	0.70	-	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	-	-	-	-	-
	0.75	-	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	-	-	-	-	-
	0.88	-	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	-	-	-	-	-
	1.00	-	4.94 <sup>a)</sup>	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	5.25 <sup>a)</sup>	-	-	-	-	-
$N_{R,k,II}$ [kN]		-	5.19	5.84	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	6.49 <sup>c)</sup>	-	-	-	-	-
max. U [mm] d, D [mm]	30	-	6.4	4.8	4.8	4.0	3.0	-	-	-	-	-
	40	-	7.6	5.6	5.6	4.8	4.0	-	-	-	-	-
	50	-	8.8	6.8	6.8	5.6	4.8	-	-	-	-	-
	60	-	10.8	8.8	8.8	7.2	5.6	-	-	-	-	-
	70	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-	-
	≥80	-	16.0	13.0	13.0	10.5	8.0	-	-	-	-	-

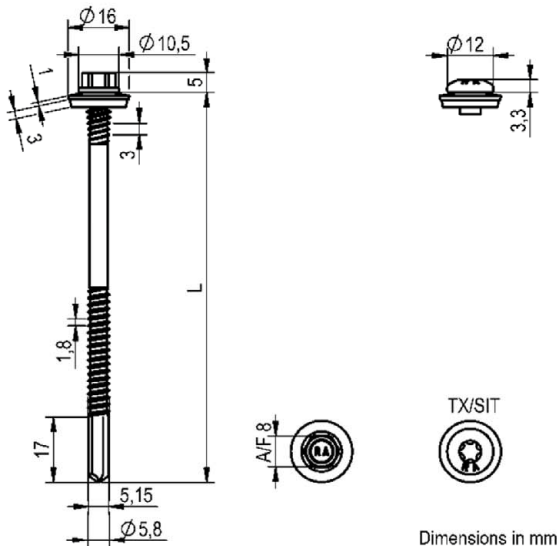
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-K12-(FK-)(P-)5,5xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 23

 <p>Dimensions in mm</p>	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
	Component II:	S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346
	Drilling performance:	$\Sigma t \leq 15.00$ mm
	Timber substructure:	Performance not assessed

$t_{II}$ [mm]	4.00	5.00	6.00	7.00	8.00	10.00	12.00	$\geq 15.00$	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.77	0.77	0.77	0.77	0.77	0.77	0.77	-	-
	0.50	1.19	1.19	1.19	1.19	1.19	1.19	1.19	-	-
	0.55	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-
	0.63	1.80	1.80	1.80	1.80	1.80	1.80	1.80	-	-
	0.75	2.40	2.40	2.40	2.40	2.40	2.40	2.40	-	-
	0.88	3.20	3.20	3.20	3.20	3.20	3.20	3.20	-	-
	1.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.11	1.11	1.11	1.11	1.11	1.11	1.11	-	-
	0.45	1.15	1.15	1.15	1.15	1.15	1.15	1.15	-	-
	0.50	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	-	-
	0.55	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	-	-
	0.60	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	-	-
	0.63	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	-	-
	0.70	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	-	-
	0.75	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	-	-
	0.88	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	-	-
	1.00	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]	4.78 <sup>c)</sup>	6.75 <sup>c)</sup>	8.72 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	2.3	2.1	2.1	2.1	2.1	2.1	2.1	-	-
	40	6.4	4.8	4.8	4.4	4.0	3.0	3.0	-	-
	50	7.6	5.6	5.6	5.2	4.8	4.0	4.0	-	-
	60	8.8	6.8	6.8	6.2	5.6	4.8	4.8	-	-
	70	10.8	8.8	8.8	8.0	7.2	5.6	5.6	-	-
	$\geq 80$	16.0	13.0	13.0	11.7	10.5	8.0	8.0	-	-

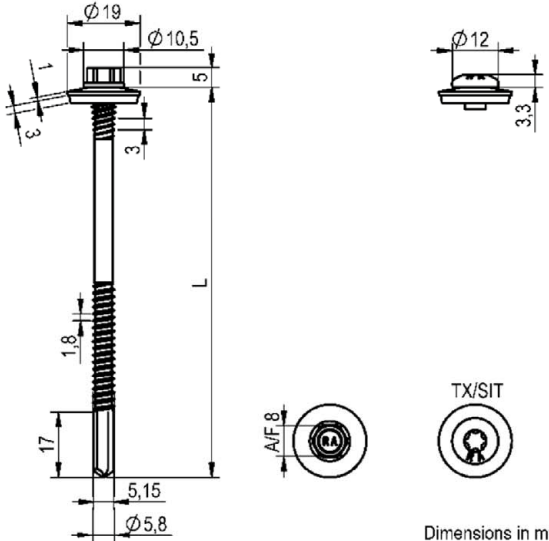
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K15-(FK-)(P)-5,8xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 24

 <p>Dimensions in mm</p>	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
	Component II:	S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346
	Drilling performance:	$\Sigma t \leq 15.00$ mm
	Timber substructure:	Performance not assessed

$t_{II}$ [mm]	4.00	5.00	6.00	7.00	8.00	10.00	12.00	$\geq 15.00$	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.77	0.77	0.77	0.77	0.77	0.77	0.77	-	-
	0.50	1.19	1.19	1.19	1.19	1.19	1.19	1.19	-	-
	0.55	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-
	0.63	1.80	1.80	1.80	1.80	1.80	1.80	1.80	-	-
	0.75	2.40	2.40	2.40	2.40	2.40	2.40	2.40	-	-
	0.88	3.20	3.20	3.20	3.20	3.20	3.20	3.20	-	-
	1.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-
	0.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	-	-
	0.50	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	-	-
	0.55	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	-	-
	0.60	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	-	-
	0.63	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	-	-
	0.70	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	-	-
	0.75	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	-	-
	0.88	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	-	-
	1.00	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]	4.78 <sup>c)</sup>	6.75 <sup>c)</sup>	8.72 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	2.3	2.1	2.1	2.1	2.1	2.1	2.1	-	-
	40	6.4	4.8	4.8	4.4	4.0	3.0	3.0	-	-
	50	7.6	5.6	5.6	5.2	4.8	4.0	4.0	-	-
	60	8.8	6.8	6.8	6.2	5.6	4.8	4.8	-	-
	70	10.8	8.8	8.8	8.0	7.2	5.6	5.6	-	-
	$\geq 80$	16.0	13.0	13.0	11.7	10.5	8.0	8.0	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

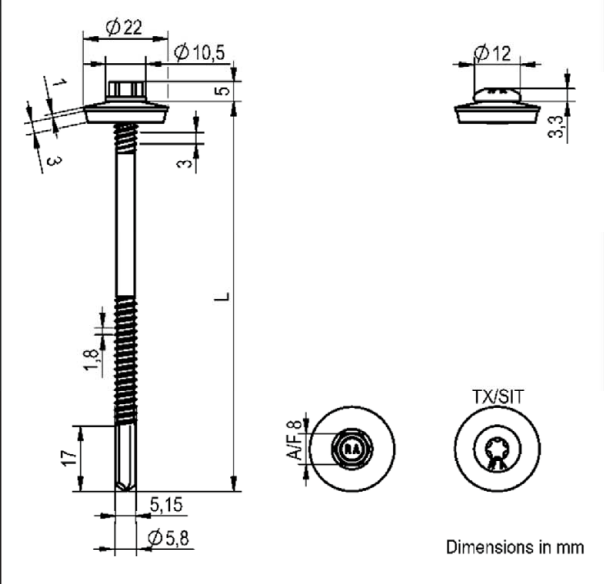
Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K15-(FK-)(P)-5,8xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 25



	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346</p>
<p>Drilling performance: <math>\Sigma t \leq 15.00</math> mm</p>	<p>Timber substructure: Performance not assessed</p>

$t_{II}$ [mm]		4.00	5.00	6.00	7.00	8.00	10.00	12.00	≥15.00	-	-
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	-	-
	0.50	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	-	-
	0.55	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-
	0.63	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	-	-
	0.75	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	-	-
	0.88	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	-	-
	1.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	-	-
	0.45	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	-	-
	0.50	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	-	-
	0.55	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	-	-
	0.60	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	-	-
	0.63	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	-	-
	0.70	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	-	-
	0.75	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	-	-
	0.88	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	-	-
	1.00	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>	-	-
$N_{R,k,II}$ [kN]		4.78 <sup>c)</sup>	6.75 <sup>c)</sup>	8.72 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	8.90 <sup>c)</sup>	-	-
max. U [mm] d, D [mm]	30	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	-	-
	40	6.4	4.8	4.8	4.4	4.0	3.0	3.0	3.0	-	-
	50	7.6	5.6	5.6	5.2	4.8	4.0	4.0	4.0	-	-
	60	8.8	6.8	6.8	6.2	5.6	4.8	4.8	4.8	-	-
	70	10.8	8.8	8.8	8.0	7.2	5.6	5.6	5.6	-	-
	≥80	16.0	13.0	13.0	11.7	10.5	8.0	8.0	8.0	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>c)</sup>: For  $t_{II}$  of least S320GD the indicated values of  $N_{R,k,II}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-K15-(FK-)(P-)5,8xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 26

<p>Dimensions in mm</p>	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
	Component II:	S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346
	Drilling performance:	Performance not assessed
	Timber substructure:	Performance not assessed

$t_{II}$ [mm]		1.50	2.00	2.50	3.00	4.00	5.00	6.00	8.00	$\geq 10.00$	-	-
$d_{pd}$ [mm]		$\varnothing 5.0$	$\varnothing 5.3$					$\varnothing 5.5$ ( $\varnothing 5.7$ bei $t_{II} \geq 7.00$ )				
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	0.86 <sup>b)</sup>	-	-
	0.50	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	-	-
	0.55	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	-	-
	0.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-	-
	0.75	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	-	-
	0.88	3.20	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	-	-
	1.00	3.20	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	-	-
	0.45	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	-	-
	0.50	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	-	-
	0.55	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-	-
	0.60	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	-	-
	0.63	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	-	-
	0.70	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	-	-
	0.75	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	-	-
	0.88	3.60	4.10	4.40	4.40	4.40	4.40	4.40	4.40	4.40	-	-
	1.00	3.60	4.10	4.45	4.80	4.90	4.90	4.90	4.90	4.90	-	-
$N_{R,k,II}$ [kN]		3.60	4.10	4.45	4.80	4.90	4.90	4.90	4.90	4.90	-	-
max. U [mm] d, D [mm]	30	12.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	-	-
	40	13.5	7.0	7.0	7.0	5.0	5.0	5.0	4.5	4.5	-	-
	50	15.0	9.0	9.0	9.0	6.0	6.0	6.0	6.0	6.0	-	-
	60	17.5	11.0	11.0	11.0	7.0	7.0	7.0	7.0	7.0	-	-
	70	20.0	13.0	13.0	13.0	8.0	8.0	8.0	8.0	8.0	-	-
	$\geq 80$	22.5	14.5	14.5	14.5	9.0	9.0	9.0	9.0	9.0	-	-

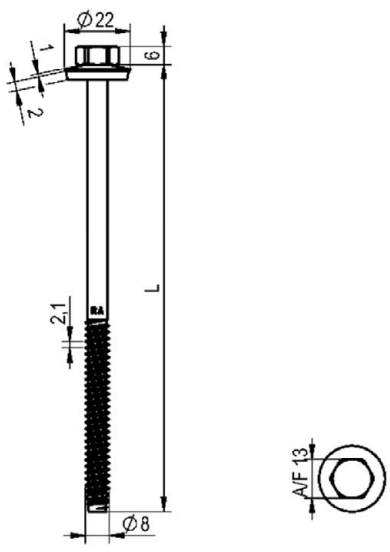
Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

FABA-BZ-(FK)-6,3xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 27

 <p>Dimensions in mm</p>	Fastener:	stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578
	Washer:	stainless steel – EN 10088 steel grade 1.4301 or 1.4401
	Component I:	S280GD to S550GD – EN 10346
	Component II:	S235 to S275 – EN 10025-1 S280GD to S350GD – EN 10346
	Drilling performance:	Performance not assessed
	Timber substructure:	Performance not assessed

$t_{II}$ [mm]		1.50	2.00	2.50	3.00	4.00	5.00	6.00	8.00	≥10.00	-	-
$d_{pd}$ [mm]		ø6.8					ø7.0		ø7.2	ø7.4		
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	0.92 <sup>b)</sup>	-	-
	0.50	1.30 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	1.44 <sup>b)</sup>	-	-
	0.55	1.52 <sup>b)</sup>	1.56 <sup>b)</sup>	1.58 <sup>b)</sup>	1.60 <sup>b)</sup>	1.62 <sup>b)</sup>	1.64 <sup>b)</sup>	1.65 <sup>b)</sup>	1.65 <sup>b)</sup>	1.65 <sup>b)</sup>	-	-
	0.63	1.86 <sup>b)</sup>	2.04 <sup>b)</sup>	2.14 <sup>b)</sup>	2.25 <sup>b)</sup>	2.33 <sup>b)</sup>	2.42 <sup>b)</sup>	2.50 <sup>b)</sup>	2.50 <sup>b)</sup>	2.50 <sup>b)</sup>	-	-
	0.75	2.41 <sup>b)</sup>	2.63 <sup>b)</sup>	2.84 <sup>b)</sup>	3.06 <sup>b)</sup>	3.22 <sup>b)</sup>	3.39 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	-	-
	0.88	2.41 <sup>b)</sup>	2.63 <sup>b)</sup>	2.84 <sup>b)</sup>	3.06 <sup>b)</sup>	3.22 <sup>b)</sup>	3.39 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	-	-
	1.00	2.41 <sup>b)</sup>	2.63 <sup>b)</sup>	2.84 <sup>b)</sup>	3.06 <sup>b)</sup>	3.22 <sup>b)</sup>	3.39 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	3.55 <sup>b)</sup>	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	-	-
	0.45	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	-	-
	0.50	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	-	-
	0.55	2.61	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	-	-
	0.60	2.61	3.83	3.91	3.91	3.91	3.91	3.91	3.91	3.91	-	-
	0.63	2.61	4.26	4.40	4.40	4.40	4.40	4.40	4.40	4.40	-	-
	0.70	2.61	4.26	4.92	4.92	4.92	4.92	4.92	4.92	4.92	-	-
	0.75	2.61	4.26	5.30	5.30	5.30	5.30	5.30	5.30	5.30	-	-
	0.88	2.61	4.26	5.70	5.70	5.70	5.70	5.70	5.70	5.70	-	-
	1.00	2.61	4.26	5.79	6.20	6.20	6.20	6.20	6.20	6.20	-	-
$N_{R,k,II}$ [kN]		2.61	4.26	5.79	6.20	6.20	6.20	6.20	6.20	6.20	-	-
max. U [mm] d, D [mm]	30	18.0	15.0	10.0	10.0	-	-	-	-	-	-	-
	40	22.0	17.0	13.0	13.0	4.0	4.0	4.0	4.0	4.0	-	-
	50	26.0	20.0	16.0	16.0	5.0	5.0	5.0	5.0	5.0	-	-
	60	31.0	22.0	19.0	19.0	6.0	6.0	6.0	6.0	6.0	-	-
	70	35.0	25.0	22.0	22.0	7.0	7.0	7.0	7.0	7.0	-	-
	≥80	40.0	28.0	25.0	25.0	9.0	9.0	9.0	9.0	9.0	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

FABA-BZ-(FK)-8,0xL  
with sealing washer ≥ ø 22 mm

Annex 28

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, <math>\geq</math> C24 BauBuche – ETA-14/0354 with <math>l_{ef} \leq 43</math> mm</p>
	<p>Drilling performance: <math>\sum t_i \leq 2.00</math> mm</p>
	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 7.68</math> Nm <math>f_{ax,k} = 9.80</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 11$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.16	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.16	2.23	2.29	2.36	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	0.45	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
	0.50	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
	0.55	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
	0.60	1.59	1.85	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.63	1.59	1.85	2.12	2.11	2.11	2.11	2.11	2.11	2.11	2.11
	0.70	1.59	1.85	2.12	2.38	2.65	2.66	2.66	2.66	2.66	2.66
	0.75	1.59	1.85	2.12	2.38	2.65	2.91	3.05	3.05	3.05	3.05
	0.88	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.66	3.66
	1.00	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
$N_{R,k,II}$ [kN]		1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,0xL  
with sealing washer  $\geq \varnothing 14$  mm

Annex 29



	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, <math>\geq</math> C24 BauBuche – ETA-14/0354 with <math>l_{ef} \leq 43</math> mm</p>
<p>Drilling performance: <math>\Sigma t_i \leq 2.00</math> mm</p>	
<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 7.68</math> Nm <math>f_{ax,k} = 9.80</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>	

$l_g = l_{ef} + 11$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.16	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.16	2.23	2.29	2.36	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>
	0.45	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>
	0.50	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>
	0.55	1.59	1.85	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>
	0.60	1.59	1.85	2.12	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>
	0.63	1.59	1.85	2.12	2.38	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>
	0.70	1.59	1.85	2.12	2.38	2.65	2.91	3.05	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>
	0.75	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.50	3.50 <sup>a)</sup>
	0.88	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
	1.00	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
$N_{R,k,II}$ [kN]		1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,0xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 30

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, <math>\geq</math> C24 BauBuche – ETA-14/0354 with <math>l_{ef} \leq 43</math> mm</p>
<p>Drilling performance: <math>\sum t_i \leq 2.00</math> mm</p>	
<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 7.68</math> Nm <math>f_{ax,k} = 9.80</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>	

$l_g = l_{ef} + 11$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.16	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.16	2.23	2.29	2.36	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>
	0.45	1.59	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>
	0.50	1.59	1.85	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>
	0.55	1.59	1.85	2.12	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>
	0.60	1.59	1.85	2.12	2.38	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>
	0.63	1.59	1.85	2.12	2.38	2.51	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>
	0.70	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.37	3.37	3.37
	0.75	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
	0.88	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
	1.00	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
$N_{R,k,II}$ [kN]		1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

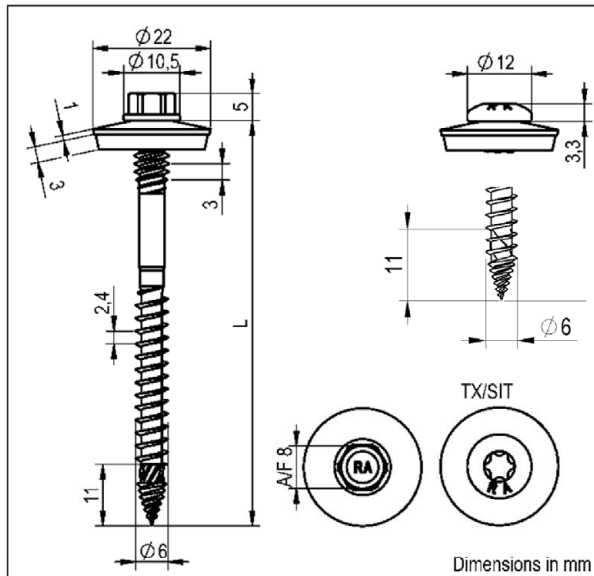
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,0xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 31



Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: structural timber – EN 14081,  $\geq$  C24  
BauBuche – ETA-14/0354 with  $l_{ef} \leq 43$  mm

Drilling performance:  $\sum t_i \leq 2.00$  mm

Timber substructure: Performance determined with

$M_{y,Rk} = 7.68$  Nm

$f_{ax,k} = 9.80$  N/mm<sup>2</sup> for  $l_{ef} \geq 30.00$  mm

$l_g = l_{ef} + 11$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.16	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.16	2.23	2.29	2.36	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
	0.45	1.59	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>
	0.50	1.59	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>
	0.55	1.59	1.85	2.12	2.33	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>
	0.60	1.59	1.85	2.12	2.38	2.65	2.82	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>
	0.63	1.59	1.85	2.12	2.38	2.65	2.91	3.12	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>
	0.70	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.81 <sup>a)</sup>
	0.75	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
	0.88	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
	1.00	1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
$N_{R,k,II}$ [kN]		1.59	1.85	2.12	2.38	2.65	2.91	3.18	3.44	3.70	3.97
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

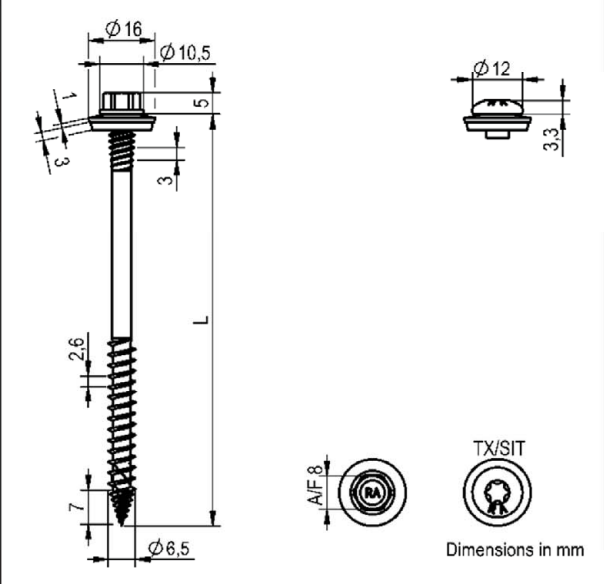
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,0xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 32

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
<p>Drilling performance: <math>\sum t_i \leq 2.00</math> mm</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 7$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.39	1.61	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.39	1.63	1.85	2.09	2.19	2.19 <sup>a)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.39	1.63	1.85	2.09	2.32	2.43	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
	0.45	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
	0.50	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>	1.72 <sup>a)</sup>
	0.55	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>	2.06 <sup>a)</sup>
	0.60	2.40	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>	2.40 <sup>a)</sup>
	0.63	2.46	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>	2.60 <sup>a)</sup>
	0.70	2.46	2.87	3.08	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>	3.08 <sup>a)</sup>
	0.75	2.46	2.87	3.28	3.42	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>
	0.88	2.46	2.87	3.28	3.40	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>
	1.00	2.46	2.87	3.28	3.40	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>	3.42 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	≥80	-	-	-	-
max. U [mm]		2.1	5.0	5.5	7.0	11.0	15.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

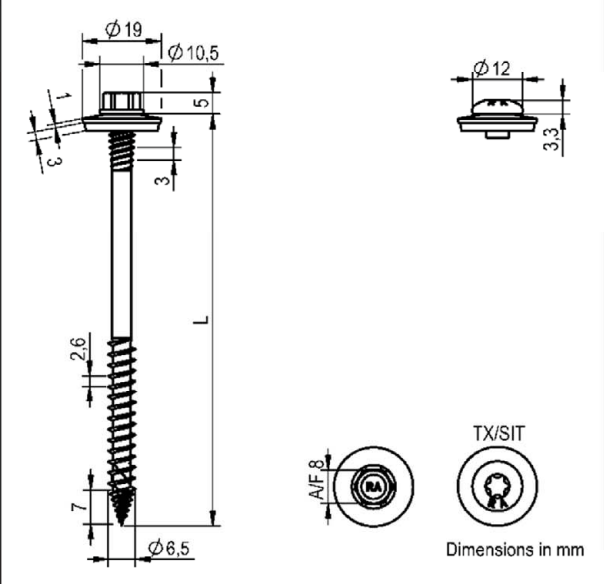
The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,5xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 33



	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
<p>Drilling performance: <math>\sum t_i \leq 2.00</math> mm</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 7$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.39	1.61	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.39	1.63	1.85	2.09	2.19	2.19 <sup>a)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.39	1.63	1.85	2.09	2.32	2.43	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
	0.45	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92
	0.50	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
	0.55	2.27	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37
	0.60	2.46	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77
	0.63	2.46	2.87	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	0.70	2.46	2.87	3.28	3.55	3.55	3.55	3.55	3.55	3.55	3.55
	0.75	2.46	2.87	3.28	3.69	3.95	3.95 <sup>a)</sup>	3.95 <sup>a)</sup>	3.95 <sup>a)</sup>	3.95 <sup>a)</sup>	3.95 <sup>a)</sup>
	0.88	2.46	2.87	3.28	3.69	4.00	4.00 <sup>a)</sup>	4.00 <sup>a)</sup>	4.00 <sup>a)</sup>	4.00 <sup>a)</sup>	4.00 <sup>a)</sup>
	1.00	2.46	2.87	3.28	3.69	4.05	4.05 <sup>a)</sup>	4.05 <sup>a)</sup>	4.05 <sup>a)</sup>	4.05 <sup>a)</sup>	4.05 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
Sandwich panel thickness, d, D [mm]											
		30	40	50	60	70	≥80	-	-	-	-
max. U [mm]		2.1	5.0	5.5	7.0	11.0	15.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,5xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 34

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, <math>\geq</math> C24</p>
<p>Drilling performance: <math>\sum t_i \leq 2.00</math> mm</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 7$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.39	1.61	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.39	1.63	1.85	2.09	2.19	2.19 <sup>a)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.39	1.63	1.85	2.09	2.32	2.43	2.43	2.43	2.43	2.43
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
	0.45	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
	0.50	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
	0.55	2.46	2.65	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69
	0.60	2.46	2.65	3.02	3.13	3.13	3.13	3.13	3.13	3.13	3.13
	0.63	2.46	2.87	3.28	3.40	3.40	3.40	3.40	3.40	3.40	3.40
	0.70	2.46	2.87	3.28	3.69	4.02	4.16	4.02	4.02	4.02	4.02
	0.75	2.46	2.87	3.28	3.69	4.10	4.47	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>
	0.88	2.46	2.87	3.28	3.69	4.10	4.50	4.58	4.58 <sup>a)</sup>	4.58 <sup>a)</sup>	4.58 <sup>a)</sup>
	1.00	2.46	2.87	3.28	3.69	4.10	4.50	4.69	4.69 <sup>a)</sup>	4.69 <sup>a)</sup>	4.69 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
Sandwich panel thickness, d, D [mm]											
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		2.1	5.0	5.5	7.0	11.0	15.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

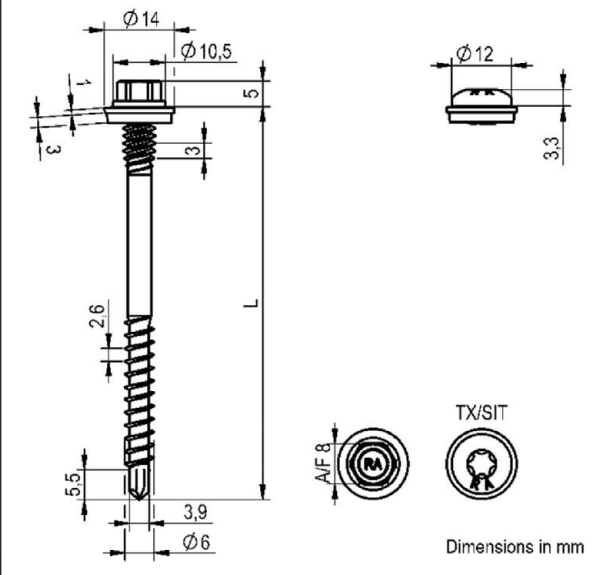
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-TD-(FK-)(P)-J6,5xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 35

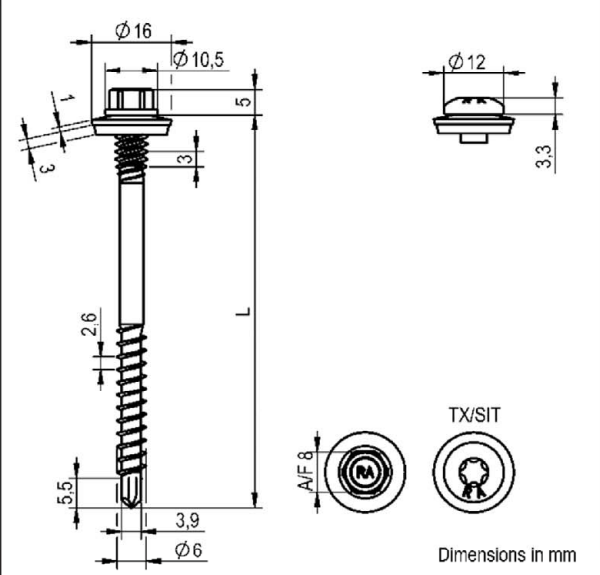
	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, <math>\geq</math> C24 BauBuche – ETA-14/0354 with <math>l_{ef} \leq 43</math> mm</p>
<p>Drilling performance: <math>\sum t_i \leq 3.00</math> mm</p>	
<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.90</math> Nm <math>f_{ax,k} = 12.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>	

$l_g = l_{ef} + 5$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.33	2.58	2.66	2.74	2.77	2.77	2.77	2.77
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	0.45	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
	0.50	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
	0.55	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
	0.60	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.63	1.94	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
	0.70	1.94	2.27	2.59	2.66	2.66	2.66	2.66	2.66	2.66	2.66
	0.75	1.94	1.85	2.12	2.92	3.05	2.91	3.05	3.05	3.05	3.05
	0.88	1.94	1.85	2.12	2.92	3.24	3.56	3.66	3.66	3.66	3.66
	1.00	1.94	1.85	2.12	2.92	3.24	3.56	3.89	3.97	3.97	3.97
$N_{R,k,II}$ [kN]		1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

<p>Thread-forming screws for connecting sandwich panels with steel or timber supporting structures</p>	<p>Annex 36</p>
<p>RP-r-(FK-)(P-)6,0xL with sealing washer <math>\geq \varnothing 14</math> mm</p>	

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24 BauBuche – ETA-14/0354 with <math>l_{ef} \leq 43</math> mm</p>
<p>Drilling performance: <math>\sum t_i \leq 3.00</math> mm</p>	
<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.90</math> Nm <math>f_{ax,k} = 12.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>	

$l_g = l_{ef} + 5$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.33	2.58	2.66	2.74	2.77	2.77	2.77	2.77
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>	1.24 <sup>a)</sup>
	0.45	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>	1.37 <sup>a)</sup>
	0.50	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>	1.49 <sup>a)</sup>
	0.55	1.85	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>	1.85 <sup>a)</sup>
	0.60	1.94	2.21	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>	2.21 <sup>a)</sup>
	0.63	1.94	2.27	2.43	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>	2.43 <sup>a)</sup>
	0.70	1.94	2.27	2.59	2.92	3.05	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>	3.05 <sup>a)</sup>
	0.75	1.94	2.27	2.59	2.92	3.24	3.50	3.50 <sup>a)</sup>	3.50 <sup>a)</sup>	3.50 <sup>a)</sup>	3.50 <sup>a)</sup>
	0.88	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.57 <sup>a)</sup>
	1.00	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
$N_{R,k,II}$ [kN]		1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	≥80	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

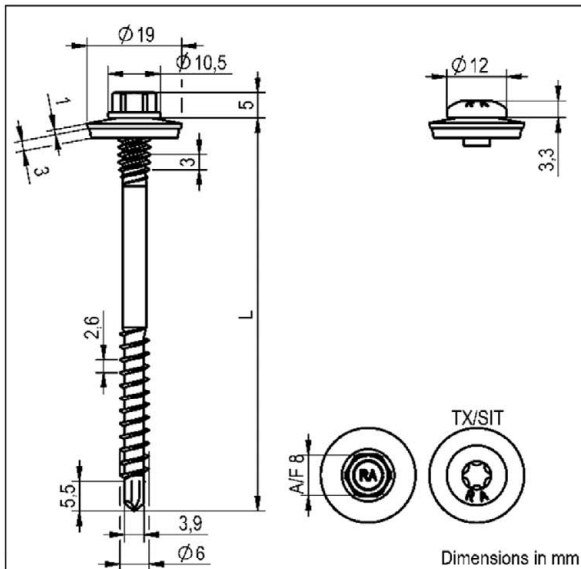
The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-r-(FK-)(P-)6,0xL  
with sealing washer  $\geq \varnothing 16$  mm

Annex 37





Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: structural timber – EN 14081,  $\geq$  C24  
BauBuche – ETA-14/0354 with  $l_{ef} \leq 43$  mm

Drilling performance:  $\Sigma t_i \leq 3.00$  mm

Timber substructure: Performance determined with  
 $M_{y,Rk} = 9.90$  Nm  
 $f_{ax,k} = 12.00$  N/mm<sup>2</sup> for  $l_{ef} \geq 30.00$  mm

$l_g = l_{ef} + 5$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.33	2.58	2.66	2.74	2.77	2.77	2.77	2.77
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>
	0.45	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>	1.79 <sup>a)</sup>
	0.50	1.94	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>
	0.55	1.94	2.18	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>	2.18 <sup>a)</sup>
	0.60	1.94	2.27	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>	2.39 <sup>a)</sup>
	0.63	1.94	2.27	2.51	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>	2.51 <sup>a)</sup>
	0.70	1.94	2.27	2.59	2.92	3.24	3.37	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>	3.37 <sup>a)</sup>
	0.75	1.94	2.27	2.59	2.92	3.24	3.56	3.89	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>	3.98 <sup>a)</sup>
	0.88	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.62 <sup>a)</sup>
	1.00	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
$N_{R,k,II}$ [kN]		1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%  
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

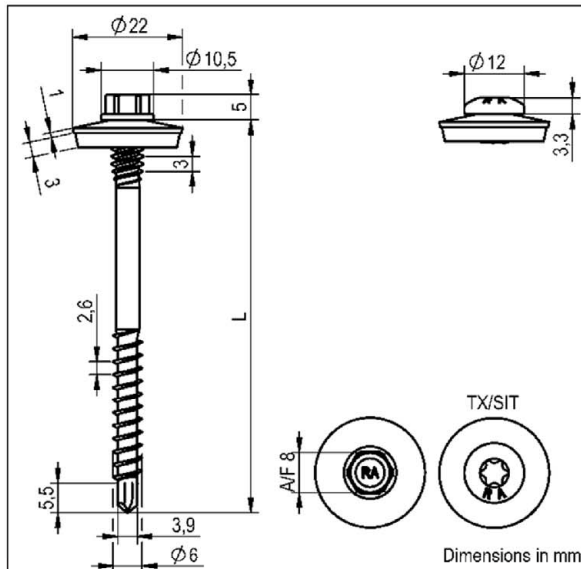
The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber  
supporting structures

RP-r-(FK-)(P)-6,0xL  
with sealing washer  $\geq \varnothing 19$  mm

Annex 38





Fastener: stainless steel – EN 10088  
steel grade 1.4301, 1.4401, 1.4567, 1.4578

Washer: stainless steel – EN 10088  
steel grade 1.4301 or 1.4401

Component I: S280GD to S550GD – EN 10346

Component II: structural timber – EN 14081,  $\geq$  C24  
BauBuche – ETA-14/0354 with  $l_{ef} \leq 43$  mm

Drilling performance:  $\sum t_i \leq 3.00$  mm

Timber substructure: Performance determined with  
 $M_{y,Rk} = 9.90$  Nm  
 $f_{ax,k} = 12.00$  N/mm<sup>2</sup> for  $l_{ef} \geq 30.00$  mm

$l_g = l_{ef} + 5$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>	0.65 <sup>b)</sup>
	0.50	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>	1.00 <sup>b)</sup>
	0.55	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>	1.07 <sup>b)</sup>
	0.63	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>	1.19 <sup>b)</sup>
	0.75	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>	1.61 <sup>b)</sup>
	0.88	1.75	2.04	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>	2.19 <sup>b)</sup>
	1.00	1.75	2.04	2.33	2.58	2.66	2.74	2.77	2.77	2.77	2.77
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>	1.70 <sup>a)</sup>
	0.45	1.84	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>	1.84 <sup>a)</sup>
	0.50	1.94	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>	1.98 <sup>a)</sup>
	0.55	1.94	2.27	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>
	0.60	1.94	2.27	2.59	2.82	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>
	0.63	1.94	2.27	2.59	2.92	3.12	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>
	0.70	1.94	2.27	2.59	2.92	3.24	3.56	3.81	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>
	0.75	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.31	4.31 <sup>a)</sup>
	0.88	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.64
	1.00	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
$N_{R,k,II}$ [kN]		1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.21	4.54	4.86
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	$\geq 80$	-	-	-	-
max. U [mm]		4.0	5.0	8.0	9.3	10.7	12.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

Thread-forming screws for connecting sandwich panels with steel or timber supporting structures

RP-r-(FK-)(P)-6,0xL  
with sealing washer  $\geq \varnothing 22$  mm

Annex 39

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
	<p>Drilling performance: <math>\Sigma t_i \leq 5.00</math> mm</p>
	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 18$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
	0.50	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
	0.55	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
	0.63	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
	0.75	1.39	1.63	1.85	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.88	1.39	1.63	1.85	2.09	2.30	2.30	2.30	2.30	2.30	2.30
	1.00	1.39	1.63	1.85	2.09	2.32	2.81	2.81	2.81	2.81	2.81
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
	0.45	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
	0.50	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>	1.18 <sup>a)</sup>
	0.55	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>	1.55 <sup>a)</sup>
	0.60	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>	1.92 <sup>a)</sup>
	0.63	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>	2.14 <sup>a)</sup>
	0.70	2.46	2.65	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>	2.65 <sup>a)</sup>
	0.75	2.46	2.65	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>	3.02 <sup>a)</sup>
	0.88	2.46	2.65	3.02 <sup>a)</sup>	3.53	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>	3.53 <sup>a)</sup>
	1.00	2.46	2.65	3.02 <sup>a)</sup>	3.69	4.01	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>	4.01 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	80	100	120	≥140	-
max. U [mm]		2.1	2.8	3.5	4.2	4.9	5.6	7.0	8.4	9.8	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $p_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

<p>Thread-forming screws for connecting sandwich panels with steel or timber supporting structures</p>	<p>Annex 43</p>
<p>RP-WS-(FK-)(P-)6,5xL with sealing washer <math>\geq \varnothing 16</math> mm</p>	

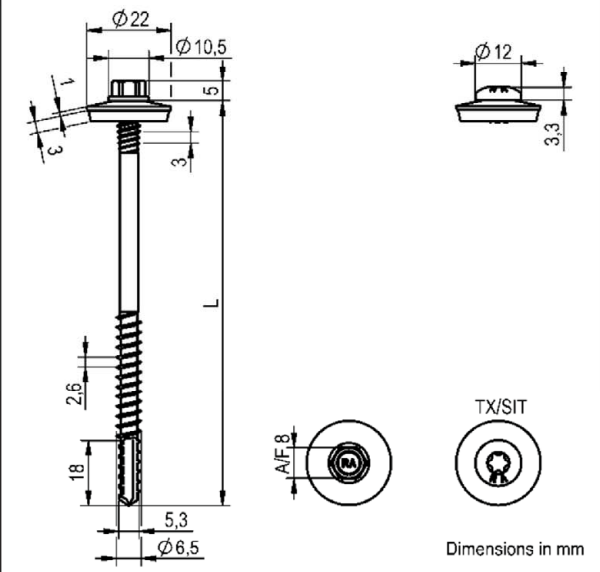
	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
<p>Drilling performance: <math>\Sigma t_i \leq 5.00</math> mm</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 18$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
	0.50	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
	0.55	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
	0.63	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
	0.75	1.39	1.63	1.85	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.88	1.39	1.63	1.85	2.09	2.30	2.30	2.30	2.30	2.30	2.30
	1.00	1.39	1.63	1.85	2.09	2.32	2.81	2.81	2.81	2.81	2.81
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
	0.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
	0.50	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>	1.51 <sup>a)</sup>
	0.55	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>	1.94 <sup>a)</sup>
	0.60	2.37	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>	2.37 <sup>a)</sup>
	0.63	2.46	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>	2.63 <sup>a)</sup>
	0.70	2.46	2.87	3.23	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>	3.23 <sup>a)</sup>
	0.75	2.46	2.87	3.28	3.66	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>	3.66 <sup>a)</sup>
	0.88	2.46	2.87	3.28	3.69	4.08	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>	4.08 <sup>a)</sup>
	1.00	2.46	2.87	3.28	3.69	4.10	4.47	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>	4.47 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	80	100	120	≥140	-
max. U [mm]		2.1	2.8	3.5	4.2	4.9	5.6	7.0	8.4	9.8	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $p_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

<p>Thread-forming screws for connecting sandwich panels with steel or timber supporting structures</p>	<p>Annex 44</p>
<p>RP-WS-(FK-)(P-)6,5xL with sealing washer <math>\geq \varnothing 19</math> mm</p>	

	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
<p>Drilling performance: <math>\Sigma t_i \leq 5.00</math> mm</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 9.9</math> Nm</p> <p><math>f_{ax,k} = 14.00</math> N/mm<sup>2</sup> for <math>l_{ef} \geq 30.00</math> mm</p>

$l_g = l_{ef} + 18$ mm		Effective screw-in length $l_{ef}$ [mm]									
		30	35	40	45	50	55	60	65	70	75
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
	0.50	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
	0.55	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
	0.63	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
	0.75	1.39	1.63	1.85	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.88	1.39	1.63	1.85	2.09	2.30	2.30	2.30	2.30	2.30	2.30
	1.00	1.39	1.63	1.85	2.09	2.32	2.81	2.81	2.81	2.81	2.81
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
	0.45	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76
	0.50	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>	1.83 <sup>a)</sup>
	0.55	2.33	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>	2.33 <sup>a)</sup>
	0.60	2.46	2.82	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>	2.82 <sup>a)</sup>
	0.63	2.46	2.87	3.12	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>	3.12 <sup>a)</sup>
	0.70	2.46	2.87	3.28	3.69	3.81	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>	3.81 <sup>a)</sup>
	0.75	2.46	2.87	3.28	3.69	4.10	4.31	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>	4.31 <sup>a)</sup>
	0.88	2.46	2.87	3.28	3.69	4.10	4.50	4.64	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>	4.64 <sup>a)</sup>
	1.00	2.46	2.87	3.28	3.69	4.10	4.50	4.91	4.94	4.94 <sup>a)</sup>	4.94 <sup>a)</sup>
$N_{R,k,II}$ [kN]		2.46	2.87	3.28	3.69	4.10	4.50	4.91	5.32	5.73	6.14
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	80	100	120	≥140	-
max. U [mm]		2.1	2.8	3.5	4.2	4.9	5.6	7.0	8.4	9.8	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $p_k = 350$  kg/m<sup>3</sup>).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

<p>Thread-forming screws for connecting sandwich panels with steel or timber supporting structures</p>	<p>Annex 45</p>
<p>RP-WS-(FK-)(P-)6,5xL with sealing washer <math>\geq \varnothing 22</math> mm</p>	



<p>Dimensions in mm</p>	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
<p>Drilling performance: Performance not assessed</p>	<p>Timber substructure: Performance determined with</p> <p><math>M_{y,Rk} = 20.0 \text{ Nm}</math> <math>f_{ax,k} = 13.40 \text{ N/mm}^2 \text{ for } l_{ef} \geq 26.00 \text{ mm}</math></p>

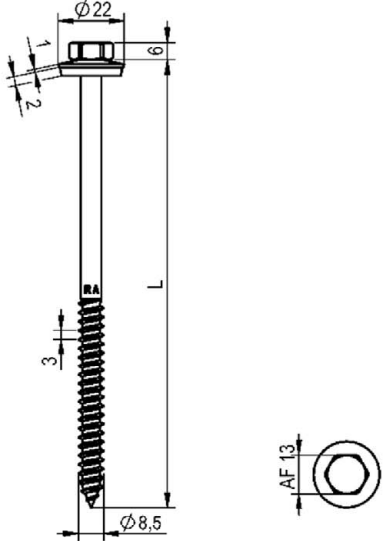
$l_g = l_{ef} + 6 \text{ mm}$		Effective screw-in length $l_{ef}$ [mm]									
		26	32	38	44	50	56	62	≥ 68	-	-
dp [mm]		Ø 4,8									
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	0.77 <sup>b)</sup>	-	-
	0.50	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	-	-
	0.55	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	-	-
	0.63	1.63	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-	-
	0.75	1.63	2.01	2.39	2.40	2.40	2.40	2.40	2.40	-	-
	0.88	1.63	2.01	2.39	2.40	2.40	2.40	2.40	2.40	-	-
	1.00	1.63	2.01	2.39	2.40	2.40	2.40	2.40	2.40	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	1.59 <sup>a)</sup>	-	-
	0.45	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	1.73 <sup>a)</sup>	-	-
	0.50	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	1.88 <sup>a)</sup>	-	-
	0.55	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-	-
	0.60	2.04	2.12	2.12	2.12	2.12	2.12	2.12	2.12	-	-
	0.63	2.04	2.20	2.20	2.20	2.20	2.20	2.20	2.20	-	-
	0.70	2.04	2.51	2.55	2.55	2.55	2.55	2.55	2.55	-	-
	0.75	2.04	2.51	2.80	2.80	2.80	2.80	2.80	2.80	-	-
	0.88	2.04	2.51	2.80	2.80	2.80	2.80	2.80	2.80	-	-
	1.00	2.04	2.51	2.80	2.80	2.80	2.80	2.80	2.80	-	-
$N_{R,k,II}$ [kN]		2.04	2.51	2.98	3.45	3.92	4.39	4.86	5.33	-	-
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	70	≥ 80	-	-	-	-
max. U [mm]		-	5.0	5.5	7.0	11.0	15.0	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%  
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

<p><b>Thread-forming screws for connecting sandwich panels with steel or timber supporting structures</b></p>	<p><b>Annex 46</b></p>
<p><b>FABA-A-(FK-)6,5xL</b> with sealing washer ≥ Ø16 mm</p>	



 <p>Dimensions in mm</p>	<p>Fastener: stainless steel – EN 10088 steel grade 1.4301, 1.4401, 1.4567, 1.4578</p> <p>Washer: stainless steel – EN 10088 steel grade 1.4301 or 1.4401</p> <p>Component I: S280GD to S550GD – EN 10346</p> <p>Component II: structural timber – EN 14081, ≥ C24</p>
	<p><u>Drilling performance:</u> Performance not assessed</p>
	<p><u>Timber substructure:</u> Performance determined with</p> <p><math>M_{y,Rk} = 26.35 \text{ Nm}</math> <math>f_{ax,k} = 9.80 \text{ N/mm}^2</math> for <math>l_{ef} \geq 34.00 \text{ mm}</math></p>

$l_g = l_{ef} + 8 \text{ mm}$		Effective screw-in length $l_{ef}$ [mm]									
		34	42	50	58	66	74	82	≥ 90	-	-
dp [mm]		ø6.0									
$V_{R,k}$ [kN] $t_{N2}$ [mm]	0.40	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	1.15 <sup>b)</sup>	-	-
	0.50	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	1.58 <sup>b)</sup>	-	-
	0.55	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	1.77 <sup>b)</sup>	-	-
	0.63	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	2.06 <sup>b)</sup>	-	-
	0.75	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	-	-
	0.88	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	-	-
	1.00	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	2.54 <sup>b)</sup>	-	-
$N_{R,k}$ [kN] $t_{N1}$ [mm]	0.40	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	1.78 <sup>a)</sup>	-	-
	0.45	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	2.04 <sup>a)</sup>	-	-
	0.50	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	2.31 <sup>a)</sup>	-	-
	0.55	2.52	3.10	3.10	3.10	3.10	3.10	3.10	3.10	-	-
	0.60	2.52	3.11	3.70	3.91	3.91	3.91	3.91	3.91	-	-
	0.63	2.52	3.11	3.70	4.30	4.40	4.40	4.40	4.40	-	-
	0.70	2.52	3.11	3.70	4.30	4.89	4.95	4.95	4.95	-	-
	0.75	2.52	3.11	3.70	4.30	4.89	5.30	5.30	5.30	-	-
	0.88	2.52	3.11	3.70	4.30	4.89	5.48	5.70	5.70	-	-
	1.00	2.52	3.11	3.70	4.30	4.89	5.48	6.08	6.20	-	-
$N_{R,k,II}$ [kN]		2.52	3.11	3.70	4.30	4.89	5.48	6.08	6.67	-	-
		Sandwich panel thickness, d, D [mm]									
		30	40	50	60	≥70	-	-	-	-	-
max. U [mm]		3.0	4.0	5.0	6.0	8.0	-	-	-	-	-

Index <sup>a)</sup>: For  $t_{N1}$  of least S320GD the indicated values of  $N_{R,k}$  can be increased by 8,3%  
Index <sup>b)</sup>: For  $t_{N2}$  of least S320GD the indicated values of  $V_{R,k}$  can be increased by 8,3%

The values indicated above depending on the screw depth  $l_{ef}$  shall apply for  $k_{mod} = 0.90$  and the timber strength class C24 ( $\rho_k = 350 \text{ kg/m}^3$ ).  
For other values of  $k_{mod}$  and timber strength classes see Annex 3.

**Thread-forming screws for connecting sandwich panels with steel or timber supporting structures**

**FABA-A-(FK-)8,4xL**  
with sealing washer  $\geq \text{ø}22 \text{ mm}$

**Annex 47**