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Członek EOTA

European Technical Approval

ETA-12/0580

English language translation - the original version is in Polish language

Nazwa handlowa

Trade name

GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB

GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB

Właściciel aprobaty

Holder of approval

Gbo Fastening Systems sp. z o.o.

**Al. Jana Pawła II 1
PL 81-345 Gdynia
Poland**

Rodzaj i przeznaczenie wyrobu

*Generic type and use
of construction products*

Wkręty do mocowania elementów metalowych i blach

Fastening screws for metal members and sheeting

Termin ważności

Valid

od

from

do

to

28. 12. 2012

28. 12. 2017

Zakład produkcyjny

Manufacturing plant

1. Gbo Fastening Systems sp. z o.o.

**ul. Olsztyńska 30
PL 11-130 Orneta**

- 2. Plant 1**
- 3. Plant 2**
- 4. Plant 3**
- 5. Plant 4**
- 6. Plant 5**

Niniejsza Europejska

Aprobata Techniczna zawiera

*This European Technical
Approval contains*

55 stron, w tym 46 Załączników

55 pages including 46 Annexes



Europejska Organizacja ds. Aprobatach Technicznych

European Organisation for Technical Approvals

I LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by Instytut Techniki Budowlanej in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC of July 1993² and Regulation (EC) № 1882/2003 of the European Parliament and of the Council³;
 - ustawa z dnia 16 kwietnia 2004 r. o wyrobach budowlanych (law on construction products from 16th April 2004)⁴;
 - rozporządzenie Ministra Infrastruktury z dnia 14 października 2004 r. w sprawie europejskich aprobat technicznych oraz polskich jednostek organizacyjnych upoważnionych do ich wydawania (regulation of Ministry of Infrastructure of 14th October 2004 on the European Technical Approvals and Polish bodies entitled to issue them)⁵;
 - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex of Commission Decision 94/23/EC⁶.
2. Instytut Techniki Budowlanej is authorized to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.
3. This European Technical Approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European Technical Approval.
4. This European Technical Approval may be withdrawn by Instytut Techniki Budowlanej, in particular after information by the Commission on the basis of Article 5 (1) of Council Directive 89/106/EEC.
5. Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Instytut Techniki Budowlanej. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.
6. The European Technical Approval is issued by the approval body in its official language. This version corresponds to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities № L 40, 11.02.1989, p. 12

² Official Journal of the European Communities № L 220, 30.08.1993, p. 1

³ Official Journal of the European Union L 284, 31 October 2003, p. 25

⁴ Official Journal of Polish Republic № 92/2004, pos. 881

⁵ Official Journal of Polish Republic № 237/2004, pos. 2375

⁶ Official Journal of the European Communities № L 17, 20.01.1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the construction product

The fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB are a self-drilling and self-tapping screws listed in Table 1. The fastening screws GT02, GTO3FH, GT3, GT5, GT5FH, GT6, GT8, GT12, GT12FH, GTA, GTB are made of galvanized carbon steel. The fastening screws GTR3, GTR5, GTR8, GTR12, GTR16 are made of galvanized carbon steel additionally protected by ceramic coating. The fastening screws GTX3, GTX3 AL, GTX5, GTX12 are made of stainless steel (bi-metal). Screws are supplied with a metallic washer and an EPDM sealing ring or without it.

The fastening screw and the corresponding connections are subject to tension and shear forces.

Table 1

No.	Screw	Description	Annex
1	GT02 4,8 x 20	self-drilling screw with hexagon head	Annex 1
2	GT02 4,8 x 20	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 2
3	GT03 FH 6,3 x 22	self-drilling screw with hexagon flange head	Annex 3
4	GT3 4,8 x L	self-drilling screw with hexagon head	Annex 4
5	GT3 4,8 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 5
6	GTR3 4,8 x L	self-drilling screw with hexagon head	Annex 6
7	GTR3 4,8 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 7
8	GTR3 4,8 x L	self-drilling screw with hexagon head and aluminum sealing washer Ø14 mm	Annex 8
9	GTR3 4,8 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 9
10	GTX3 4,8 x L	self-drilling screw with hexagon head	Annex 10
11	GTX3 4,8 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 11
12	GTX3 AL 5,5 x L	self-drilling screw with hexagon head	Annex 12
13	GTX3 AL 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 13
14	GT5 5,5 x L	self-drilling screw with hexagon head	Annex 14
15	GT5 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 15
16	GT5 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 16
17	GTR5 5,5 x L	self-drilling screw with hexagon head	Annex 17
18	GTR5 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 18
19	GTR5 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 19
20	GT5 FH 5,5 x L	self-drilling screw with hexagon flange head	Annex 20

21	GTX5 5,5 x L	self-drilling screw with hexagon head	Annex 21
22	GTX5 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 22
23	GT6 6,3 x L	self-drilling screw with hexagon head	Annex 23
24	GT6 6,3 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 24
25	GT8 5,5 x L	self-drilling screw with hexagon head	Annex 25
26	GT8 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 26
27	GT8 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 27
28	GTR8 5,5 x L	self-drilling screw with hexagon head	Annex 28
29	GTR8 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 29
30	GTR8 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 30
31	GT12 5,5 x L	self-drilling screw with hexagon head	Annex 31
32	GT12 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 32
33	GT12 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 33
34	GTR12 5,5 x L	self-drilling screw with hexagon head	Annex 34
35	GTR12 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø14 mm	Annex 35
36	GTR12 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 36
37	GTR12 5,5 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 37
38	GTR12 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø16 mm	Annex 38
39	GT12 FH 5,5 x L	self-drilling screw with hexagon flange head	Annex 39
40	GTX12 5,5 x L	self-drilling screw with hexagon head	Annex 40
41	GTX12 5,5 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø14 mm	Annex 41
42	GTR16 6,3 x L	self-drilling screw with hexagon head	Annex 42
43	GTR16 6,3 x L	self-drilling screw with hexagon head and steel sealing washer Ø16 mm	Annex 43
44	GTR16 6,3 x L	self-drilling screw with hexagon head and stainless steel sealing washer Ø16 mm	Annex 44
45*)	GTA 6,5 x L	self-tapping screw with hexagon head and steel sealing washer Ø16 mm	Annex 45
46	GTB 6,3 x L	self-tapping screw with hexagon head and steel sealing washer Ø16 mm	Annex 46

*) This self-tapping screw is applicable for fastening steel sheet to timber

1.2 Intended use

The fastening screw is intended to be used for fastening steel sheet to steel sheet and for fastening steel sheeting to steel substructures (screw given in Table 1) or to timber substructures (screw given in the line 45 in Table 1). The sheeting can either be used as wall or roof cladding or as load bearing wall and roof element.

The fastening screw can also be used for fastening of other thin gauge steel members.

The component to be fastened is component I and the substructure is component II. The intended use comprises fastening screws and connections for indoor and outdoor applications. The fastening screws made of stainless steel are intended to be used in external environments with high corrosion category.

Furthermore the intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European Technical Approval are based on an assumed working life of the fastening screws of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or approval body, 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.

2 Characteristics of product and methods of verification

2.1 Characteristics of product

The fastening screw shall correspond to the drawing given in the Annexes 1 to 46.

The characteristic material values, dimensions and tolerances of the fastening screw not indicated in this Annexes shall correspond to the respective values laid down in the technical documentation⁷ to this European Technical Approval.

The fastening screw is considered to satisfy the requirements of performance class A1 of the reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

2.2 Methods of verification

The assessment of the fitness of the fastening screw for the intended use in relation to the Essential Requirements ER 1 (Mechanical resistance and stability), ER 2 (Safety in case of fire), ER 4 (Safety in use) and additional aspects of durability has been made in accordance with section 3.2 of the Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.

The assessment of the resistance to fire performance is only relevant to the assembled system (fastening screws, sheeting, substructure) which is not part of the ETA.

Concerning Essential Requirements No. 1 (Mechanical resistance and stability) and No. 4 (Safety in use) the following applies:

- the characteristic values of resistance given in Annexes were determined by shear and tension tests,
- the formulas to calculate the design resistance are given in clause 4.2.1.

3 Evaluation and attestation of conformity and CE-marking

3.1 Attestation of conformity system

According to the Decision 99/92 of the European Commission⁸ system 3 of the attestation of conformity applies.

⁷ Official Journal of the European Communities № L 17, 20.01.1994, p. 34

⁸ Official Journal of the European Communities № L 80 of 18.03.1998.

This system of attestation of conformity provides declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:

(1) factory production control;

(b) Tasks for the notified body:

(2) initial type-testing of the product.

3.2 Responsibilities

3.2.1 Tasks for the manufacturer; factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the products are in conformity with this European Technical Approval.

The manufacturer shall only use raw materials stated in the technical documentation of this ETA.

The factory production control shall be in accordance with the control plan⁹ which is a part of the technical documentation of this ETA. The control plan has been agreed between the manufacturer and Instytut Techniki Budowlanej and is laid down in the context of the factory production control system operated by the manufacturer and deposited with Instytut Techniki Budowlanej.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

The manufacturer shall make a declaration of conformity, stating that the fastening screws for metal members and sheeting are in conformity with the provisions of the ETA.

3.2.2 Tasks for the notified body

The notified body shall perform the initial type-testing of the product.

The notified body shall retain the essential points of its actions referred to above and state the results obtained and conclusion drawn in written report.

3.3 CE marking

The CE marking shall be affixed on the product itself, the attached label, or the accompanying commercial documents. The letters „CE” shall be followed by the following additional information:

- the name or identification mark of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE-marking was affixed,
- the number of the European Technical Approval,
- the name of the product.

⁹ The control plan has been deposited with Instytut Techniki Budowlanej and may be handed over only to the notified body involved in the procedure of attestation of conformity.

4 Assumptions under which the fitness of the product for the intended use was favorably assessed

4.1 Manufacturing

The ETA is issued on the basis of agreed data/information, deposited with Instytut Techniki Budowlanej, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Instytut Techniki Budowlanej before the changes are introduced. Instytut Techniki Budowlanej will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

4.2 Design

4.2.1 General

Fastening screws completely or partly exposed to external weather are made of stainless steel or are protected against corrosion. For the corrosion protection the rules given in EN 1090-2:2008 and EN 1993-1-3:2006 and EN 1995-1-1:2004 + A1:2008 are to be taken into account. For connections the effect of constraints due to temperature shall be considered for design unless constraining forces due to temperature do not occur or are not significant (e.g. sufficient flexibility of the structure). The loading is predominantly static (for instance wind loads are regarded as predominantly static).

Dimensions, material properties, torque moments $M_{t, norm}$, minimum effective screw-in length l_{ef} and nominal fastened material thicknesses t_N as stated in the ETA are observed. The verification concept stated in EN 1990:2002 is used for the design of the connections made with the fastening screw. The characteristic values of shear and tension resistance, stated in Annexes are to be used for the design of the entire connections.

The following formulas are to be used to calculate the values of design resistance:

$$N_{R,d} = \frac{N_{R,k}}{\gamma_M}$$

$$V_{R,d} = \frac{V_{R,k}}{\gamma_M}$$

The recommended partial safety factor $\gamma_M = 1,33$ is used in order to determine the corresponding design resistances, provided no values are given in national regulations of the member state in which the fastening screws are used or in the respective National Annex to Eurocode 3.

In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3:2006, section 8.3 (8) is taken into account.

$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \leq 1,0$$

The possibly required reduction of the tension resistance due to the position of the fastening screw is to be taken into account in accordance with EN 1993-1-3:2006, section 8.3 (7) and Fig. 8.2.

4.2.2 Additional rules for connections with timber substructures

As far as no other provisions are made the following EN 1995-1-1:2004 + A1:2008 applies.

The following terms are used:

l_g – screw-in length – part of thread screwed in to component II including drill point

l_b – length of the drill-point

l_{ef} – effective screw-in length $l_{ef} = l_g - l_b$

$N_{R,k} = F_{ax,Rk} \cdot k_{mod}$

$V_{R,k} = F_{v,Rk} \cdot k_{mod}$

$F_{ax,Rk}$ according to EN 1995-1-1:2004 + A1:2008, equation (8.40a)

Remark: $F_{ax,Rk} = F_{ax,\alpha,Rk}$ with $\alpha = 90^\circ$

$F_{v,Rk}$ according to EN 1995-1-1:2004 + A1:2008, clause 8.2.3

k_{mod} according to EN 1995-1-1:2004 + A1:2008, Table 3.1

$M_{y,Rk}$ moment in equation (8.9) of EN 1995-1-1:2004 + A1:2008 is given in Annexes of this ETA

$f_{ax,k}$ steel stress in equation (8.40a) of EN 1995-1-1:2004 + A1:2008 is given in Annexes of this ETA.

The characteristic values for fastening screw (pull out and bearing resistance, timber structure) calculated according to EN 1995-1-1:2004 + A1:2008 are compared with the characteristic values for component I (pull over and bearing resistance) stated in the last column of the tables in the appropriate Annexes. The lower value is used for further calculations.

4.3 Installation

The fitness for use of the fastening screw can only be assumed if the following conditions of installation are met:

- the installation is to be only carried out according to the manufacturer's instructions. The manufacturer hands over the assembly instructions to the assembler.
- it is guaranteed by the execution that no bimetallic corrosion will occur,
- for regular shear forces (without lever arm) the components I and II are directly connected to each other so that the fastening screws do not get additional bending. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed,
- the fastening screws are fixed rectangular to the surface of the components to guarantee a correct load bearing and if necessary rain-proof connection,
- fastening screws for steel substructures are screwed-in to the substructure with the cylindrical part of the thread,
- the conformity of the installed fastening screws with the provisions of the ETA is confirmed by the executing company.

5 Recommendations for the manufacturer

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (and in Annexes) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European Technical Approval. In addition all installation data (torque moment, application limits) shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

On behalf of Instytut Techniki Budowlanej

A handwritten signature in blue ink, appearing to read 'M. Kaproń', is written over a light blue rectangular background.

Marek Kaproń
Deputy Director of ITB

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24	
$M_{t,norm}$	3 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	1,05	1,05	—	—	/
	0,55	1,05	1,05	1,05	1,05	1,05	1,05	—	—	
	0,63	1,05	1,05	1,42	1,42	1,42	1,42	—	—	
	0,75	1,05	1,05	1,42	2,02	2,02	2,02	—	—	
	0,88	1,05	1,05	1,42	2,02	2,21	2,21	—	—	
	1,00	1,05	1,05	1,42	2,02	2,21	2,53	—	—	
	1,13	—	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	0,51	0,51	—	—	/
	0,55	0,51	0,51	0,51	0,51	0,51	0,51	—	—	
	0,63	0,55	0,55	0,73	0,76	0,76	0,76	—	—	
	0,75	0,55	0,55	0,73	0,84	0,84	0,84	—	—	
	0,88	0,55	0,55	0,73	0,84	0,84	0,84	—	—	
	1,00	0,55	0,55	0,73	0,84	0,94	0,94	—	—	
	1,13	—	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 1</p> <p>of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT02 4,8 x 20 with hexagon head</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <hr/> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class ≥ C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	1,05	1,05	1,05	
	0,55	1,05	1,05	1,05	1,05	1,05	1,05	1,05	
	0,63	1,05	1,05	1,42	1,42	1,42	1,42	1,42	
	0,75	1,05	1,05	1,42	2,02	2,02	2,02	2,02	
	0,88	1,05	1,05	1,42	2,02	2,21	2,21	2,21	
	1,00	1,05	1,05	1,42	2,02	2,21	2,53	2,53	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	0,55	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	0,63	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	0,75	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	0,88	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	1,00	0,55	0,55	0,73	0,86	1,04	1,59	1,59	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 2 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT02 4,8 x 20 with hexagon head and steel sealing washer $\varnothing 14$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: Integrated collar</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,25 \text{ mm}$</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	4 Nm								
$V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	1,53 — 1,53	1,53 — 1,53	1,53 — 1,88	1,53 — 1,88	1,53 — 1,88	1,53 — 1,88	1,53 — 1,88	1,53 — 1,88
	0,55	1,53 — 1,53	1,53 — 1,53	1,53 — 1,88	1,53 — 2,92	1,53 — 2,92	1,53 — 2,92	1,53 — 2,92	1,53 — 2,92
	0,63	1,53 — 1,53	1,53 — 1,88	1,88 — 1,88	1,88 — 2,92	1,88 — 3,21	1,88 — 3,21	1,88 — 3,21	1,88 — 3,21
	0,75	1,53 — 1,53	1,53 — 1,88	1,88 — 2,92	2,92 — 2,92	2,92 — 3,66	2,92 — 3,66	2,92 — 3,66	2,92 — 3,66
	0,88	1,53 — 1,53	1,53 — 1,88	1,88 — 2,92	2,92 — 3,21	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66
	1,00	1,53 — 1,53	1,53 — 1,88	1,88 — 2,92	2,92 — 3,21	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66
	1,13	1,53 — 1,53	1,53 — 1,88	1,88 — 2,92	2,92 — 3,21	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66
	1,25	1,53 — 1,53	1,53 — 1,88	1,88 — 2,92	2,92 — 3,21	3,21 — 3,66	3,21 — 3,66	3,21 — 3,66	3,21 — 3,69
	1,50	— —	— —	— —	— —	— —	— —	— —	— —
	1,75	— —	— —	— —	— —	— —	— —	— —	— —
	2,00	— —	— —	— —	— —	— —	— —	— —	— —
$N_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	0,55	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	0,63	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	0,75	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	0,88	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	1,00	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	1,13	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	1,25	0,53 — 0,53	0,53 — 0,69	0,69 — 0,84	0,84 — 1,02	1,02 — 1,77	1,02 — 1,77	1,02 — 1,77	1,02 — 2,01
	1,50	— —	— —	— —	— —	— —	— —	— —	— —
	1,75	— —	— —	— —	— —	— —	— —	— —	— —
	2,00	— —	— —	— —	— —	— —	— —	— —	— —

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 3 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT03FH 6,3 x 22 with hexagon flange head</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class ≥ C24
$M_{i,norm}$	3 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	—
	0,55	1,08	1,08	1,08	1,08	—	—	—	—
	0,63	1,38	1,38	1,38	1,38	—	—	—	—
	0,75	2,11	2,11	2,11	2,11	—	—	—	—
	0,88	2,29	2,29	2,29	2,29	—	—	—	—
	1,00	2,59	2,59	2,59	2,59	—	—	—	—
	1,13	2,59	2,59	2,59	—	—	—	—	—
	1,25	2,59	2,74	2,74	—	—	—	—	—
	1,50	2,59	2,74	3,41	—	—	—	—	—
	1,75	2,59	2,74	—	—	—	—	—	—
2,00	2,59	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	—	—	—	—
	0,55	0,51	0,51	0,51	0,51	—	—	—	—
	0,63	0,76	0,76	0,76	0,76	—	—	—	—
	0,75	0,84	0,84	0,84	0,84	—	—	—	—
	0,88	0,78	0,78	0,78	0,78	—	—	—	—
	1,00	0,94	0,94	0,94	0,94	—	—	—	—
	1,13	0,94	0,94	0,94	—	—	—	—	—
	1,25	0,94	0,94	0,94	—	—	—	—	—
	1,50	0,94	0,94	0,94	—	—	—	—	—
	1,75	0,94	0,94	—	—	—	—	—	—
2,00	0,94	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 4 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT3 4,8 x L with hexagon head</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	1,08	1,08	1,08	1,08	—	—	—	—	
0,50	1,08	1,08	1,08	1,08	—	—	—	—	
0,55	1,08	1,08	1,08	1,08	—	—	—	—	
0,63	1,38	1,38	1,38	1,38	—	—	—	—	
0,75	2,11	2,11	2,11	2,11	—	—	—	—	
0,88	2,29	2,29	2,29	2,29	—	—	—	—	
1,00	2,59	2,59	2,59	2,59	—	—	—	—	
1,13	2,59	2,59	2,59	—	—	—	—	—	
1,25	2,59	2,74	2,74	—	—	—	—	—	
1,50	2,59	2,74	3,41	—	—	—	—	—	
1,75	2,59	2,74	—	—	—	—	—	—	
2,00	2,59	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,51	0,51	0,51	0,51	—	—	—	—	
0,50	0,51	0,51	0,51	0,51	—	—	—	—	
0,55	0,51	0,51	0,51	0,51	—	—	—	—	
0,63	0,76	0,76	0,76	0,76	—	—	—	—	
0,75	0,84	0,84	0,84	0,84	—	—	—	—	
0,88	0,78	0,78	0,78	0,78	—	—	—	—	
1,00	0,94	0,94	0,94	0,94	—	—	—	—	
1,13	0,94	0,94	0,94	—	—	—	—	—	
1,25	0,94	0,94	0,94	—	—	—	—	—	
1,50	0,94	0,94	0,94	—	—	—	—	—	
1,75	0,94	0,94	—	—	—	—	—	—	
2,00	0,94	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 6 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR3 4,8 x L with hexagon head</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma ti \leq 3,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,norm}$	3 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,08 —	1,08 —	1,08 —	1,08 —	— —	— —	— —	
	0,55	1,08 —	1,08 —	1,08 —	1,08 —	— —	— —	— —	
	0,63	1,38 —	1,38 —	1,38 —	1,38 —	— —	— —	— —	
	0,75	2,11 —	2,11 —	2,11 —	2,11 —	— —	— —	— —	
	0,88	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	— —	
	1,00	2,59 —	2,59 —	2,59 —	2,59 —	— —	— —	— —	
	1,13	2,59 —	2,59 —	2,59 —	— —	— —	— —	— —	
	1,25	2,59 —	2,74 —	2,74 —	— —	— —	— —	— —	
	1,50	2,59 —	2,74 —	3,41 —	— —	— —	— —	— —	
	1,75	2,59 —	2,74 —	— —	— —	— —	— —	— —	
2,00	2,59 —	— —	— —	— —	— —	— —	— —		
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	0,97 —	1,43 —	1,69 —	2,19 —	— —	— —	— —	
	0,55	0,97 —	1,43 —	1,69 —	2,19 —	— —	— —	— —	
	0,63	0,97 —	1,43 —	1,69 —	2,76 —	— —	— —	— —	
	0,75	0,97 —	1,43 —	1,69 —	2,76 —	— —	— —	— —	
	0,88	0,97 —	1,43 —	1,69 —	2,76 —	— —	— —	— —	
	1,00	0,97 —	1,43 —	1,69 —	2,76 —	— —	— —	— —	
	1,13	0,97 —	1,43 —	1,69 —	— —	— —	— —	— —	
	1,25	0,97 —	1,43 —	1,69 —	— —	— —	— —	— —	
	1,50	0,97 —	1,43 —	1,69 —	— —	— —	— —	— —	
	1,75	0,97 —	1,43 —	— —	— —	— —	— —	— —	
2,00	0,97 —	— —	— —	— —	— —	— —	— —		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 7 of European Technical Approval ETA-12/0580
Self-drilling screw GTR3 4,8 x L with hexagon head and steel sealing washer $\varnothing 14$	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <hr/> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t, nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	—
	0,55	1,08	1,08	1,08	1,08	—	—	—	—
	0,63	1,38	1,38	1,38	1,38	—	—	—	—
	0,75	2,11	2,11	2,11	2,11	—	—	—	—
	0,88	2,29	2,29	2,29	2,29	—	—	—	—
	1,00	2,59	2,59	2,59	2,59	—	—	—	—
	1,13	2,59	2,59	2,59	—	—	—	—	—
	1,25	2,59	2,74	2,74	—	—	—	—	—
	1,50	2,59	2,74	3,41	—	—	—	—	—
	1,75	2,59	2,74	—	—	—	—	—	—
2,00	2,59	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97	1,43	1,69	2,19	—	—	—	—
	0,55	0,97	1,43	1,69	2,19	—	—	—	—
	0,63	0,97	1,43	1,69	2,76	—	—	—	—
	0,75	0,97	1,43	1,69	2,76	—	—	—	—
	0,88	0,97	1,43	1,69	2,76	—	—	—	—
	1,00	0,97	1,43	1,69	2,76	—	—	—	—
	1,13	0,97	1,43	1,69	—	—	—	—	—
	1,25	0,97	1,43	1,69	—	—	—	—	—
	1,50	0,97	1,43	1,69	—	—	—	—	—
	1,75	0,97	1,43	—	—	—	—	—	—
2,00	0,97	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 8 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR3 4,8 x L with hexagon head and aluminum sealing washer $\varnothing 14$</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating Washer: EPDM sealing washer with metal top made of stainless steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 3,00$ mm	
Timber substructure No performance determined	

$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	—
	0,55	1,08	1,08	1,08	1,08	—	—	—	—
	0,63	1,38	1,38	1,38	1,38	—	—	—	—
	0,75	2,11	2,11	2,11	2,11	—	—	—	—
	0,88	2,29	2,29	2,29	2,29	—	—	—	—
	1,00	2,59	2,59	2,59	2,59	—	—	—	—
	1,13	2,59	2,59	2,59	—	—	—	—	—
	1,25	2,59	2,74	2,74	—	—	—	—	—
	1,50	2,59	2,74	3,41	—	—	—	—	—
	1,75	2,59	2,74	—	—	—	—	—	—
2,00	2,59	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97	1,43	1,69	2,19	—	—	—	—
	0,55	0,97	1,43	1,69	2,19	—	—	—	—
	0,63	0,97	1,43	1,69	2,76	—	—	—	—
	0,75	0,97	1,43	1,69	2,76	—	—	—	—
	0,88	0,97	1,43	1,69	2,76	—	—	—	—
	1,00	0,97	1,43	1,69	2,76	—	—	—	—
	1,13	0,97	1,43	1,69	—	—	—	—	—
	1,25	0,97	1,43	1,69	—	—	—	—	—
	1,50	0,97	1,43	1,69	—	—	—	—	—
	1,75	0,97	1,43	—	—	—	—	—	—
2,00	0,97	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 9 of European Technical Approval ETA-12/0580
Self-drilling screw GTR3 4,8 x L with hexagon head and stainless steel sealing washer $\varnothing 14$	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma ti \leq 3,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	
	0,55	1,08	1,08	1,08	1,08	—	—	—	
	0,63	1,38	1,38	1,38	1,38	—	—	—	
	0,75	2,11	2,11	2,11	2,11	—	—	—	
	0,88	2,29	2,29	2,29	2,29	—	—	—	
	1,00	2,59	2,59	2,59	2,59	—	—	—	
	1,13	2,59	2,59	2,59	—	—	—	—	
	1,25	2,59	2,74	2,74	—	—	—	—	
	1,50	2,59	2,74	3,41	—	—	—	—	
	1,75	2,59	2,74	—	—	—	—	—	
2,00	2,59	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	—	—	—	
	0,55	0,51	0,51	0,51	0,51	—	—	—	
	0,63	0,76	0,76	0,76	0,76	—	—	—	
	0,75	0,84	0,84	0,84	0,84	—	—	—	
	0,88	0,78	0,78	0,78	0,78	—	—	—	
	1,00	0,94	0,94	0,94	0,94	—	—	—	
	1,13	0,94	0,94	0,94	—	—	—	—	
	1,25	0,94	0,94	0,94	—	—	—	—	
	1,50	0,94	0,94	0,94	—	—	—	—	
	1,75	0,94	0,94	—	—	—	—	—	
2,00	0,94	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 10 of European Technical Approval ETA-12/0580
Self-drilling screw GTX3 4,8 x L with hexagon head	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304, Bi-metal</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <hr/> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{k,norm}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	—
	0,55	1,08	1,08	1,08	1,08	—	—	—	—
	0,63	1,38	1,38	1,38	1,38	—	—	—	—
	0,75	2,11	2,11	2,11	2,11	—	—	—	—
	0,88	2,29	2,29	2,29	2,29	—	—	—	—
	1,00	2,59	2,59	2,59	2,59	—	—	—	—
	1,13	2,59	2,59	2,59	—	—	—	—	—
	1,25	2,59	2,74	2,74	—	—	—	—	—
	1,50	2,59	2,74	3,41	—	—	—	—	—
	1,75	2,59	2,74	—	—	—	—	—	—
2,00	2,59	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,02	1,24	1,69	2,19	—	—	—	—
	0,55	1,02	1,24	1,69	2,19	—	—	—	—
	0,63	1,02	1,24	1,69	2,52	—	—	—	—
	0,75	1,02	1,24	1,69	2,52	—	—	—	—
	0,88	1,02	1,24	1,69	2,52	—	—	—	—
	1,00	1,02	1,24	1,69	2,52	—	—	—	—
	1,13	1,02	1,24	1,69	—	—	—	—	—
	1,25	1,02	1,24	1,69	—	—	—	—	—
	1,50	1,02	1,24	1,69	—	—	—	—	—
	1,75	1,02	1,24	—	—	—	—	—	—
2,00	1,02	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 11 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTX3 4,8 x L with hexagon head and stainless steel sealing washer $\varnothing 14$</p>	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 3,00$ mm	
Timber substructure No performance determined	

$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood: class \geq C24
$M_{t,norm}$	3 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	
	0,55	1,08	1,08	1,08	1,08	—	—	—	
	0,63	1,38	1,38	1,38	1,38	—	—	—	
	0,75	2,11	2,11	2,11	2,11	—	—	—	
	0,88	2,29	2,29	2,29	2,29	—	—	—	
	1,00	2,59	2,59	2,59	2,59	—	—	—	
	1,13	2,59	2,59	2,59	—	—	—	—	
	1,25	2,59	2,74	2,74	—	—	—	—	
	1,50	2,59	2,74	3,41	—	—	—	—	
	1,75	2,59	2,74	—	—	—	—	—	
2,00	2,59	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	—	—	—	
	0,55	0,61	0,61	0,61	0,61	—	—	—	
	0,63	0,90	0,90	0,90	0,90	—	—	—	
	0,75	0,96	0,99	0,99	0,99	—	—	—	
	0,88	0,96	0,99	0,99	0,99	—	—	—	
	1,00	0,96	1,13	1,13	1,13	—	—	—	
	1,13	0,96	1,13	1,13	—	—	—	—	
	1,25	0,96	1,13	1,13	—	—	—	—	
	1,50	0,96	1,13	1,13	—	—	—	—	
	1,75	0,96	1,13	—	—	—	—	—	
2,00	0,96	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 12 of European Technical Approval ETA-12/0580
Self-drilling screw GTX3 AL 5,5 x L with hexagon head	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: EPDM sealing washer with metal top made of stainless steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 3,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,norm}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,08	1,08	1,08	1,08	—	—	—	—
	0,55	1,08	1,08	1,08	1,08	—	—	—	—
	0,63	1,38	1,38	1,38	1,38	—	—	—	—
	0,75	2,11	2,11	2,11	2,11	—	—	—	—
	0,88	2,29	2,29	2,29	2,29	—	—	—	—
	1,00	2,59	2,59	2,59	2,59	—	—	—	—
	1,13	2,59	2,59	2,59	—	—	—	—	—
	1,25	2,59	2,74	2,74	—	—	—	—	—
	1,50	2,59	2,74	3,41	—	—	—	—	—
	1,75	2,59	2,74	—	—	—	—	—	—
	2,00	2,59	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	1,42	1,85	2,63	—	—	—	—
	0,55	0,96	1,42	1,85	2,63	—	—	—	—
	0,63	0,96	1,42	1,85	2,78	—	—	—	—
	0,75	0,96	1,42	1,85	2,78	—	—	—	—
	0,88	0,96	1,42	1,85	2,78	—	—	—	—
	1,00	0,96	1,42	1,85	2,78	—	—	—	—
	1,13	0,96	1,42	1,85	—	—	—	—	—
	1,25	0,96	1,42	1,85	—	—	—	—	—
	1,50	0,96	1,42	1,85	—	—	—	—	—
	1,75	0,96	1,42	—	—	—	—	—	—
	2,00	0,96	—	—	—	—	—	—	—

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 13 of European Technical Approval ETA-12/0580
Self-drilling screw GTX3 AL 5,5 x L with hexagon head and stainless steel sealing washer $\varnothing 14$	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 5,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{L,norm}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,55	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,63	1,18 —	1,18 —	1,18 —	1,18 —	— —	— —	— —	
	0,75	1,70 —	1,70 —	1,70 —	1,70 —	— —	— —	— —	
	0,88	2,07 —	2,07 —	2,07 —	2,07 —	— —	— —	— —	
	1,00	2,32 —	2,32 —	2,32 —	2,32 —	— —	— —	— —	
	1,13	2,32 —	2,32 —	2,32 —	— —	— —	— —	— —	
	1,25	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,50	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,75	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
2,00	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —	
	0,55	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —	
	0,63	0,90 —	0,90 —	0,90 —	0,90 —	— —	— —	— —	
	0,75	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —	
	0,88	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —	
	1,00	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —	
	1,13	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,25	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,50	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,75	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
2,00	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 14 of European Technical Approval ETA-12/0580
Self-drilling screw GT5 5,5 x L with hexagon head	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm				—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25	1,25	1,25	1,25	—	—	—	—
	0,55	1,25	1,25	1,25	1,25	—	—	—	—
	0,63	1,18	1,18	1,18	1,18	—	—	—	—
	0,75	1,70	1,70	1,70	1,70	—	—	—	—
	0,88	2,07	2,07	2,07	2,07	—	—	—	—
	1,00	2,32	2,32	2,32	2,32	—	—	—	—
	1,13	2,32	2,32	2,32	—	—	—	—	—
	1,25	3,41	3,41	3,41	—	—	—	—	—
	1,50	3,41	3,41	3,41	—	—	—	—	—
	1,75	3,41	3,41	3,41	—	—	—	—	—
2,00	3,41	3,41	3,41	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,78	2,55	2,63	2,63	—	—	—	—
	0,55	1,78	2,55	2,63	2,63	—	—	—	—
	0,63	1,78	2,55	3,59	3,59	—	—	—	—
	0,75	1,78	2,55	4,13	4,13	—	—	—	—
	0,88	1,78	2,55	4,14	4,14	—	—	—	—
	1,00	1,78	2,55	4,71	4,71	—	—	—	—
	1,13	1,78	2,55	4,71	—	—	—	—	—
	1,25	1,78	2,55	4,71	—	—	—	—	—
	1,50	1,78	2,55	4,71	—	—	—	—	—
	1,75	1,78	2,55	4,71	—	—	—	—	—
2,00	1,78	2,55	4,71	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 15 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT5 5,5 x L with hexagon head and steel sealing washer $\varnothing 14$</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 5,00$ mm		
Timber substructure No performance determined		

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25	1,25	1,25	1,25	—	—	—	
	0,55	1,25	1,25	1,25	1,25	—	—	—	
	0,63	1,18	1,18	1,18	1,18	—	—	—	
	0,75	1,70	1,70	1,70	1,70	—	—	—	
	0,88	2,07	2,07	2,07	2,07	—	—	—	
	1,00	2,32	2,32	2,32	2,32	—	—	—	
	1,13	2,32	2,32	2,32	—	—	—	—	
	1,25	3,41	3,41	3,41	—	—	—	—	
	1,50	3,41	3,41	3,41	—	—	—	—	
	1,75	3,41	3,41	3,41	—	—	—	—	
2,00	3,41	3,41	3,41	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,78	2,55	3,16	3,16	—	—	—	
	0,55	1,78	2,55	3,16	3,16	—	—	—	
	0,63	1,78	2,55	3,63	3,63	—	—	—	
	0,75	1,78	2,55	4,17	4,17	—	—	—	
	0,88	1,78	2,55	4,18	4,18	—	—	—	
	1,00	1,78	2,55	4,75	4,75	—	—	—	
	1,13	1,78	2,55	4,75	—	—	—	—	
	1,25	1,78	2,55	4,75	—	—	—	—	
	1,50	1,78	2,55	4,75	—	—	—	—	
	1,75	1,78	2,55	4,75	—	—	—	—	
2,00	1,78	2,55	4,75	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 16 of European Technical Approval ETA-12/0580
Self-drilling screw GT5 5,5 x L with hexagon head and steel sealing washer Ø16	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 5,00$ mm	
Timber substructure No performance determined	

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood: class \geq C24
$M_{t,nom}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25	1,25	1,25	1,25	—	—	—	
	0,55	1,25	1,25	1,25	1,25	—	—	—	
	0,63	1,18	1,18	1,18	1,18	—	—	—	
	0,75	1,70	1,70	1,70	1,70	—	—	—	
	0,88	2,07	2,07	2,07	2,07	—	—	—	
	1,00	2,32	2,32	2,32	2,32	—	—	—	
	1,13	2,32	2,32	2,32	—	—	—	—	
	1,25	3,41	3,41	3,41	—	—	—	—	
	1,50	3,41	3,41	3,41	—	—	—	—	
	1,75	3,41	3,41	3,41	—	—	—	—	
2,00	3,41	3,41	3,41	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,61	0,61	0,61	—	—	—	
	0,55	0,51	0,61	0,61	0,61	—	—	—	
	0,63	0,90	0,90	0,90	0,90	—	—	—	
	0,75	0,99	0,99	0,99	0,99	—	—	—	
	0,88	0,99	0,99	0,99	0,99	—	—	—	
	1,00	1,13	1,13	1,13	1,13	—	—	—	
	1,13	1,13	1,13	1,13	—	—	—	—	
	1,25	1,13	1,13	1,13	—	—	—	—	
	1,50	1,13	1,13	1,13	—	—	—	—	
	1,75	1,13	1,13	1,13	—	—	—	—	
2,00	1,13	1,13	1,13	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 17 of European Technical Approval ETA-12/0580
Self-drilling screw GTR5 5,5 x L with hexagon head	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{I,nom}$	5 Nm				—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,55	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,63	1,18 —	1,18 —	1,18 —	1,18 —	— —	— —	— —	
	0,75	1,70 —	1,70 —	1,70 —	1,70 —	— —	— —	— —	
	0,88	2,07 —	2,07 —	2,07 —	2,07 —	— —	— —	— —	
	1,00	2,32 —	2,32 —	2,32 —	2,32 —	— —	— —	— —	
	1,13	2,32 —	2,32 —	2,32 —	— —	— —	— —	— —	
	1,25	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,50	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,75	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
2,00	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,78 —	2,55 —	2,63 —	2,63 —	— —	— —	— —	
	0,55	1,78 —	2,55 —	2,63 —	2,63 —	— —	— —	— —	
	0,63	1,78 —	2,55 —	3,59 —	3,59 —	— —	— —	— —	
	0,75	1,78 —	2,55 —	4,13 —	4,13 —	— —	— —	— —	
	0,88	1,78 —	2,55 —	4,14 —	4,14 —	— —	— —	— —	
	1,00	1,78 —	2,55 —	4,71 —	4,71 —	— —	— —	— —	
	1,13	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	
	1,25	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	
	1,50	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	
	1,75	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	
2,00	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 18 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR5 5,5 x L with hexagon head and steel sealing washer $\varnothing 14$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	— —
	0,55	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	— —
	0,63	1,18 —	1,18 —	1,18 —	1,18 —	— —	— —	— —	— —
	0,75	1,70 —	1,70 —	1,70 —	1,70 —	— —	— —	— —	— —
	0,88	2,07 —	2,07 —	2,07 —	2,07 —	— —	— —	— —	— —
	1,00	2,32 —	2,32 —	2,32 —	2,32 —	— —	— —	— —	— —
	1,13	2,32 —	2,32 —	2,32 —	— —	— —	— —	— —	— —
	1,25	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	— —
	1,50	3,41 —	3,41 —	— —	— —	— —	— —	— —	— —
	1,75	3,41 —	3,41 —	— —	— —	— —	— —	— —	— —
2,00	3,41 —	3,41 —	— —	— —	— —	— —	— —	— —	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,78 —	2,55 —	2,63 —	2,63 —	— —	— —	— —	— —
	0,55	1,78 —	2,55 —	2,63 —	2,63 —	— —	— —	— —	— —
	0,63	1,78 —	2,55 —	3,59 —	3,59 —	— —	— —	— —	— —
	0,75	1,78 —	2,55 —	4,13 —	4,13 —	— —	— —	— —	— —
	0,88	1,78 —	2,55 —	4,14 —	4,14 —	— —	— —	— —	— —
	1,00	1,78 —	2,55 —	4,71 —	4,71 —	— —	— —	— —	— —
	1,13	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	— —
	1,25	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	— —
	1,50	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	— —
	1,75	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	— —
2,00	1,78 —	2,55 —	4,71 —	— —	— —	— —	— —	— —	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 19 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR5 5,5 x L with hexagon head and stainless steel sealing washer $\varnothing 14$</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 5,00$ mm Timber substructure No performance determined		
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$t_{n,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class ≥ C24
$M_{i,nom}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	1,25	1,25	1,25	1,25	—	—	—	
	0,55	1,25	1,25	1,25	1,25	—	—	—	
	0,63	1,18	1,18	1,18	1,18	—	—	—	
	0,75	1,70	1,70	1,70	1,70	—	—	—	
	0,88	2,07	2,07	2,07	2,07	—	—	—	
	1,00	2,32	2,32	2,32	2,32	—	—	—	
	1,13	2,32	2,32	2,32	—	—	—	—	
	1,25	3,41	3,41	3,41	—	—	—	—	
	1,50	3,41	3,41	3,41	—	—	—	—	
	1,75	3,41	3,41	3,41	—	—	—	—	
2,00	3,41	3,41	3,41	—	—	—	—		
$N_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	1,78	2,55	2,76	2,76	—	—	—	
	0,55	1,78	2,55	2,76	2,76	—	—	—	
	0,63	1,78	2,55	3,77	3,77	—	—	—	
	0,75	1,78	2,55	4,34	4,34	—	—	—	
	0,88	1,78	2,55	4,35	4,35	—	—	—	
	1,00	1,78	2,55	4,94	4,94	—	—	—	
	1,13	1,78	2,55	4,94	—	—	—	—	
	1,25	1,78	2,55	4,94	—	—	—	—	
	1,50	1,78	2,55	4,94	—	—	—	—	
	1,75	1,78	2,55	4,94	—	—	—	—	
2,00	1,78	2,55	4,94	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 20 of European Technical Approval ETA-12/0580
Self-drilling screw GT5FH 5,5 x L with hexagon flange head	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 5,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,55	1,25 —	1,25 —	1,25 —	1,25 —	— —	— —	— —	
	0,63	1,18 —	1,18 —	1,18 —	1,18 —	— —	— —	— —	
	0,75	1,70 —	1,70 —	1,70 —	1,70 —	— —	— —	— —	
	0,88	2,07 —	2,07 —	2,07 —	2,07 —	— —	— —	— —	
	1,00	2,32 —	2,32 —	2,32 —	2,32 —	— —	— —	— —	
	1,13	2,32 —	2,32 —	2,32 —	— —	— —	— —	— —	
	1,25	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,50	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
	1,75	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —	
2,00	3,41 —	3,41 —	3,41 —	— —	— —	— —	— —		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —	
	0,55	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —	
	0,63	0,90 —	0,90 —	0,90 —	0,90 —	— —	— —	— —	
	0,75	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —	
	0,88	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —	
	1,00	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —	
	1,13	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,25	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,50	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
	1,75	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —	
2,00	1,13 —	1,13 —	1,13 —	— —	— —	— —	— —		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 21 of European Technical Approval ETA-12/0580
Self-drilling screw GTX5 5,5 x L with hexagon head	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304, Bi-metal</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,norm}$	5 Nm				—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25	1,25	1,25	1,25	—	—	—	
	0,55	1,25	1,25	1,25	1,25	—	—	—	
	0,63	1,18	1,18	1,18	1,18	—	—	—	
	0,75	1,70	1,70	1,70	1,70	—	—	—	
	0,88	2,07	2,07	2,07	2,07	—	—	—	
	1,00	2,32	2,32	2,32	2,32	—	—	—	
	1,13	2,32	2,32	2,32	—	—	—	—	
	1,25	3,41	3,41	3,41	—	—	—	—	
	1,50	3,41	3,41	3,41	—	—	—	—	
	1,75	3,41	3,41	3,41	—	—	—	—	
2,00	3,41	3,41	3,41	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,44	1,96	2,63	2,63	—	—	—	
	0,55	1,44	1,96	2,63	2,63	—	—	—	
	0,63	1,44	1,96	3,59	3,59	—	—	—	
	0,75	1,44	1,96	4,13	4,13	—	—	—	
	0,88	1,44	1,96	4,14	4,14	—	—	—	
	1,00	1,44	1,96	4,40	4,71	—	—	—	
	1,13	1,44	1,96	4,40	—	—	—	—	
	1,25	1,44	1,96	4,40	—	—	—	—	
	1,50	1,44	1,96	4,40	—	—	—	—	
	1,75	1,44	1,96	4,40	—	—	—	—	
2,00	1,44	1,96	4,40	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 22 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTX5 5,5 x L with hexagon head and stainless steel sealing washer $\varnothing 14$</p>	

<p>Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 6,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	10,00	Wood; class ≥ C24
$M_{t,nom}$	3 Nm			—	—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	1,33	1,33	—	—	—	—	
	0,55	—	1,33	1,33	—	—	—	—	
	0,63	—	1,48	1,48	—	—	—	—	
	0,75	—	2,03	2,03	—	—	—	—	
	0,88	—	2,44	2,44	—	—	—	—	
	1,00	—	2,97	2,97	—	—	—	—	
	1,13	—	2,97	—	—	—	—	—	
	1,25	—	2,97	—	—	—	—	—	
	1,50	—	2,97	—	—	—	—	—	
	1,75	—	2,97	—	—	—	—	—	
2,00	—	2,97	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,72	0,72	0,72	—	—	—	—	
	0,55	0,72	0,72	0,72	—	—	—	—	
	0,63	1,05	1,05	1,05	—	—	—	—	
	0,75	1,16	1,16	1,16	—	—	—	—	
	0,88	1,16	1,16	1,16	—	—	—	—	
	1,00	1,32	1,32	1,32	—	—	—	—	
	1,13	1,32	1,32	—	—	—	—	—	
	1,25	1,32	1,32	—	—	—	—	—	
	1,50	1,32	1,32	—	—	—	—	—	
	1,75	1,32	1,32	—	—	—	—	—	
2,00	1,32	1,32	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 23 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT6 6,3 x L with hexagon head</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346		
Drilling capacity: $\Sigma t_i \leq 6,00$ mm		
Timber substructure No performance determined		

$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	Wood; class \geq C24
$M_{t,norm}$	6 Nm			—	—	—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	1,33	1,33	—	—	—	—	
	0,55	—	1,33	1,33	—	—	—	—	
	0,63	—	1,48	1,48	—	—	—	—	
	0,75	—	2,03	2,03	—	—	—	—	
	0,88	—	2,44	2,44	—	—	—	—	
	1,00	—	2,97	2,97	—	—	—	—	
	1,13	—	2,97	—	—	—	—	—	
	1,25	—	2,97	—	—	—	—	—	
	1,50	—	2,97	—	—	—	—	—	
	1,75	—	2,97	—	—	—	—	—	
2,00	—	2,97	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,31	3,31	3,31	—	—	—	—	
	0,55	3,31	3,31	3,31	—	—	—	—	
	0,63	3,74	3,74	3,74	—	—	—	—	
	0,75	4,23	4,85	4,85	—	—	—	—	
	0,88	4,23	5,49	5,49	—	—	—	—	
	1,00	4,23	6,66	6,66	—	—	—	—	
	1,13	4,23	6,66	—	—	—	—	—	
	1,25	4,23	6,66	—	—	—	—	—	
	1,50	4,23	6,66	—	—	—	—	—	
	1,75	4,23	6,66	—	—	—	—	—	
2,00	4,23	6,66	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 24 of European Technical Approval ETA-12/0580
Self-drilling screw GT6 6,3 x L with hexagon head and steel sealing washer $\varnothing 16$	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 μm)</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class ≥ C24												
$M_{t,nom}$	5 Nm					—	—	—													
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29	—	1,29	—	1,29	—	1,29	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	1,29	—	1,29	—	1,29	—	1,29	—	—	—	—	—	—	—	—	—	—	—	—	
	0,63	1,63	—	1,63	—	1,63	—	1,63	—	—	—	—	—	—	—	—	—	—	—	—	
	0,75	1,75	—	1,75	—	1,75	—	1,75	—	—	—	—	—	—	—	—	—	—	—	—	
	0,88	2,14	—	2,14	—	2,14	—	2,14	—	—	—	—	—	—	—	—	—	—	—	—	
	1,00	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,13	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,25	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,50	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,75	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
2,00	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—	—	—	—	—	—	—	—	
	0,63	0,90	—	0,90	—	0,90	—	0,90	—	—	—	—	—	—	—	—	—	—	—	—	
	0,75	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—	—	—	—	—	—	—	—	
	0,88	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—	—	—	—	—	—	—	—	
	1,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,13	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,25	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,50	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,75	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
2,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 25 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT8 5,5 x L with hexagon head</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 8,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class ≥ C24	
$M_{t,nom}$	5 Nm						—	—		—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29	1,29	1,29	1,29	1,29	—	—	—	
	0,55	1,29	1,29	1,29	1,29	1,29	—	—	—	
	0,63	1,63	1,63	1,63	1,63	1,63	—	—	—	
	0,75	1,75	1,75	1,75	1,75	1,75	—	—	—	
	0,88	2,14	2,14	2,14	2,14	2,14	—	—	—	
	1,00	2,29	2,29	2,29	2,29	2,29	—	—	—	
	1,13	2,29	2,29	2,29	2,29	2,29	—	—	—	
	1,25	2,29	2,29	2,29	2,29	2,29	—	—	—	
	1,50	2,29	2,29	2,29	2,29	2,29	—	—	—	
	1,75	2,29	2,29	2,29	2,29	2,29	—	—	—	
2,00	2,29	2,29	2,29	2,29	2,29	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,57	2,63	2,63	2,63	2,63	—	—	—	
	0,55	2,57	2,63	2,63	2,63	2,63	—	—	—	
	0,63	2,57	3,59	3,59	3,59	3,59	—	—	—	
	0,75	2,57	4,13	4,13	4,13	4,13	—	—	—	
	0,88	2,57	4,14	4,14	4,14	4,14	—	—	—	
	1,00	2,57	4,71	4,71	4,71	4,71	—	—	—	
	1,13	2,57	4,71	4,71	4,71	4,71	—	—	—	
	1,25	2,57	4,71	4,71	4,71	4,71	—	—	—	
	1,50	2,57	4,71	4,71	4,71	4,71	—	—	—	
	1,75	2,57	4,71	4,71	4,71	4,71	—	—	—	
2,00	2,57	4,71	4,71	4,71	4,71	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GT8 5,5 x L
 with hexagon head and steel sealing washer Ø14

Annex 26
 of European
 Technical Approval
 ETA-12/0580

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class ≥ C24
$M_{t,norm}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29 —	1,29 —	1,29 —	1,29 —	1,29 —	— —	— —	
	0,55	1,29 —	1,29 —	1,29 —	1,29 —	1,29 —	— —	— —	
	0,63	1,63 —	1,63 —	1,63 —	1,63 —	1,63 —	— —	— —	
	0,75	1,75 —	1,75 —	1,75 —	1,75 —	1,75 —	— —	— —	
	0,88	2,14 —	2,14 —	2,14 —	2,14 —	2,14 —	— —	— —	
	1,00	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	
	1,13	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	
	1,25	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	
	1,50	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	
	1,75	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —	
2,00	2,29 —	2,29 —	2,29 —	2,29 —	2,29 —	— —	— —		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,57 —	3,16 —	3,16 —	3,16 —	3,16 —	— —	— —	
	0,55	2,57 —	3,16 —	3,16 —	3,16 —	3,16 —	— —	— —	
	0,63	2,57 —	3,63 —	3,63 —	3,63 —	3,63 —	— —	— —	
	0,75	2,57 —	4,17 —	4,17 —	4,17 —	4,17 —	— —	— —	
	0,88	2,57 —	4,18 —	4,18 —	4,18 —	4,18 —	— —	— —	
	1,00	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —	
	1,13	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —	
	1,25	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —	
	1,50	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —	
	1,75	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —	
2,00	2,57 —	4,75 —	4,75 —	4,75 —	4,75 —	— —	— —		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 27 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT 8 5,5 x L with hexagon head and steel sealing washer Ø16</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24												
$M_{t,nom}$	5 Nm					—	—	—													
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29	—	1,29	—	1,29	—	1,29	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	1,29	—	1,29	—	1,29	—	1,29	—	—	—	—	—	—	—	—	—	—	—	—	
	0,63	1,63	—	1,63	—	1,63	—	1,63	—	—	—	—	—	—	—	—	—	—	—	—	
	0,75	1,75	—	1,75	—	1,75	—	1,75	—	—	—	—	—	—	—	—	—	—	—	—	
	0,88	2,14	—	2,14	—	2,14	—	2,14	—	—	—	—	—	—	—	—	—	—	—	—	
	1,00	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,13	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,25	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,50	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
	1,75	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—
2,00	2,29	—	2,29	—	2,29	—	2,29	—	—	—	—	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—	—	—	—	—	—	—	—	
	0,63	0,90	—	0,90	—	0,90	—	0,90	—	—	—	—	—	—	—	—	—	—	—	—	
	0,75	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—	—	—	—	—	—	—	—	
	0,88	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—	—	—	—	—	—	—	—	
	1,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,13	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,25	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,50	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
	1,75	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—	
2,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	—	—	—	—	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 28 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR8 5,5 x L with hexagon head</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24	
$M_{t,nom}$	5 Nm						—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29	1,29	1,29	1,29	1,29	—	—		
	0,55	1,29	1,29	1,29	1,29	1,29	—	—		
	0,63	1,63	1,63	1,63	1,63	1,63	—	—		
	0,75	1,75	1,75	1,75	1,75	1,75	—	—		
	0,88	2,14	2,14	2,14	2,14	2,14	—	—		
	1,00	2,29	2,29	2,29	2,29	2,29	—	—		
	1,13	2,29	2,29	2,29	2,29	2,29	—	—		
	1,25	2,29	2,29	2,29	2,29	2,29	—	—		
	1,50	2,29	2,29	2,29	2,29	2,29	—	—		
	1,75	2,29	2,29	2,29	2,29	2,29	—	—		
2,00	2,29	2,29	2,29	2,29	2,29	—	—			
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,57	2,63	2,63	2,63	2,63	—	—		
	0,55	2,57	2,63	2,63	2,63	2,63	—	—		
	0,63	2,57	3,59	3,59	3,59	3,59	—	—		
	0,75	2,57	4,13	4,13	4,13	4,13	—	—		
	0,88	2,57	4,14	4,14	4,14	4,14	—	—		
	1,00	2,57	4,71	4,71	4,71	4,71	—	—		
	1,13	2,57	4,71	4,71	4,71	4,71	—	—		
	1,25	2,57	4,71	4,71	4,71	4,71	—	—		
	1,50	2,57	4,71	4,71	4,71	4,71	—	—		
	1,75	2,57	4,71	4,71	4,71	4,71	—	—		
2,00	2,57	4,71	4,71	4,71	4,71	—	—			

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GTR8 5,5 x L
 with hexagon head and steel sealing washer $\varnothing 14$

Annex 29
 of European
 Technical Approval
 ETA-12/0580

Materials		
Fastener:	carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating	
Washer:	EPDM sealing washer with metal top made of stainless steel	
Component I:	S280GD, S320GD or S350GD – EN 10346	
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346	
Drilling capacity:	$\Sigma t_i \leq 8,00$ mm	
Timber substructure	No performance determined	

$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24	
$M_{t,nom}$	5 Nm						–	–	–	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,29	1,29	1,29	1,29	1,29	–	–		
	0,55	1,29	1,29	1,29	1,29	1,29	–	–		
	0,63	1,63	1,63	1,63	1,63	1,63	–	–		
	0,75	1,75	1,75	1,75	1,75	1,75	–	–		
	0,88	2,14	2,14	2,14	2,14	2,14	–	–		
	1,00	2,29	2,29	2,29	2,29	2,29	–	–		
	1,13	2,29	2,29	2,29	2,29	2,29	–	–		
	1,25	2,29	2,29	2,29	2,29	2,29	–	–		
	1,50	2,29	2,29	2,29	2,29	2,29	–	–		
	1,75	2,29	2,29	2,29	2,29	2,29	–	–		
	2,00	2,29	2,29	2,29	2,29	2,29	–	–		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,57	2,63	2,63	2,63	2,63	–	–		
	0,55	2,57	2,63	2,63	2,63	2,63	–	–		
	0,63	2,57	3,59	3,59	3,59	3,59	–	–		
	0,75	2,57	4,13	4,13	4,13	4,13	–	–		
	0,88	2,57	4,14	4,14	4,14	4,14	–	–		
	1,00	2,57	4,71	4,71	4,71	4,71	–	–		
	1,13	2,57	4,71	4,71	4,71	4,71	–	–		
	1,25	2,57	4,71	4,71	4,71	4,71	–	–		
	1,50	2,57	4,71	4,71	4,71	4,71	–	–		
	1,75	2,57	4,71	4,71	4,71	4,71	–	–		
	2,00	2,57	4,71	4,71	4,71	4,71	–	–		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GTR8 5,5 x L
 with hexagon head and stainless steel sealing washer $\varnothing 14$

Annex 30
 of European
 Technical Approval
 ETA-12/0580

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 12,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34 —	1,34 —	1,34 —	1,34 —	1,34 —	— —	— —	— —
	0,55	1,34 —	1,34 —	1,34 —	1,34 —	1,34 —	— —	— —	— —
	0,63	1,46 —	1,46 —	1,46 —	1,46 —	1,46 —	— —	— —	— —
	0,75	1,93 —	1,93 —	1,93 —	1,93 —	1,93 —	— —	— —	— —
	0,88	2,35 —	2,35 —	2,35 —	2,35 —	2,35 —	— —	— —	— —
	1,00	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —
	1,13	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —
	1,25	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —
	1,50	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —
	1,75	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —
2,00	2,82 —	2,82 —	2,82 —	2,82 —	2,82 —	— —	— —	— —	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61 —	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —
	0,55	0,61 —	0,61 —	0,61 —	0,61 —	0,61 —	— —	— —	— —
	0,63	0,90 —	0,90 —	0,90 —	0,90 —	0,90 —	— —	— —	— —
	0,75	0,99 —	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —
	0,88	0,99 —	0,99 —	0,99 —	0,99 —	0,99 —	— —	— —	— —
	1,00	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —
	1,13	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —
	1,25	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —
	1,50	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —
	1,75	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —
2,00	1,13 —	1,13 —	1,13 —	1,13 —	1,13 —	— —	— —	— —	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GT12 5,5 x L
 with hexagon head

Annex 31
 of European
 Technical Approval
 ETA-12/0580

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{i, nom}$	5 Nm					—	—	—	
$V_{R,K}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	—	—	—	
	0,55	1,34	1,34	1,34	1,34	—	—	—	
	0,63	1,46	1,46	1,46	1,46	—	—	—	
	0,75	1,93	1,93	1,93	1,93	—	—	—	
	0,88	2,35	2,35	2,35	2,35	—	—	—	
	1,00	2,82	2,82	2,82	2,82	—	—	—	
	1,13	2,82	2,82	2,82	2,82	—	—	—	
	1,25	2,82	2,82	2,82	2,82	—	—	—	
	1,50	2,82	2,82	2,82	2,82	—	—	—	
	1,75	2,82	2,82	2,82	2,82	—	—	—	
2,00	2,82	2,82	2,82	2,82	—	—	—		
$N_{R,K}$ [kN] for $t_{N,I}$ [mm]	0,50	2,63	2,63	2,63	2,63	—	—	—	
	0,55	2,63	2,63	2,63	2,63	—	—	—	
	0,63	3,59	3,59	3,59	3,59	—	—	—	
	0,75	4,13	4,13	4,13	4,13	—	—	—	
	0,88	4,14	4,14	4,14	4,14	—	—	—	
	1,00	4,71	4,71	4,71	4,71	—	—	—	
	1,13	4,71	4,71	4,71	4,71	—	—	—	
	1,25	4,71	4,71	4,71	4,71	—	—	—	
	1,50	4,71	4,71	4,71	4,71	—	—	—	
	1,75	4,71	4,71	4,71	4,71	—	—	—	
2,00	4,71	4,71	4,71	4,71	—	—	—		

If both components I and II are made of S320GD the values $V_{R,K}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,K}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GT12 5,5 x L
 with hexagon head and steel sealing washer $\varnothing 14$

Annex 32
 of European
 Technical Approval
 ETA-12/0580

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma ti \leq 12,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t, nom}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	—	—	—	
	0,55	1,34	1,34	1,34	1,34	—	—	—	
	0,63	1,46	1,46	1,46	1,46	—	—	—	
	0,75	1,93	1,93	1,93	1,93	—	—	—	
	0,88	2,35	2,35	2,35	2,35	—	—	—	
	1,00	2,82	2,82	2,82	2,82	—	—	—	
	1,13	2,82	2,82	2,82	2,82	—	—	—	
	1,25	2,82	2,82	2,82	2,82	—	—	—	
	1,50	2,82	2,82	2,82	2,82	—	—	—	
	1,75	2,82	2,82	2,82	2,82	—	—	—	
2,00	2,82	2,82	2,82	2,82	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,16	3,16	3,16	3,16	—	—	—	
	0,55	3,16	3,16	3,16	3,16	—	—	—	
	0,63	3,63	3,63	3,63	3,63	—	—	—	
	0,75	4,17	4,17	4,17	4,17	—	—	—	
	0,88	4,18	4,18	4,18	4,18	—	—	—	
	1,00	4,75	4,75	4,75	4,75	—	—	—	
	1,13	4,75	4,75	4,75	4,75	—	—	—	
	1,25	4,75	4,75	4,75	4,75	—	—	—	
	1,50	4,75	4,75	4,75	4,75	—	—	—	
	1,75	4,75	4,75	4,75	4,75	—	—	—	
2,00	4,75	4,75	4,75	4,75	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GT12 5,5 x L
 with hexagon head and steel sealing washer $\varnothing 16$

Annex 33
 of European
 Technical Approval
 ETA-12/0580

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood: class \geq C24				
$M_{i,nom}$	5 Nm								—	—	—		
$V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	1,34	—	1,34	—	1,34	—	1,34	—	—	—	—	—
	0,55	1,34	—	1,34	—	1,34	—	1,34	—	—	—	—	—
	0,63	1,46	—	1,46	—	1,46	—	1,46	—	—	—	—	—
	0,75	1,93	—	1,93	—	1,93	—	1,93	—	—	—	—	—
	0,88	2,35	—	2,35	—	2,35	—	2,35	—	—	—	—	—
	1,00	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,13	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,25	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,50	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,75	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
2,00	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—
	0,55	0,61	—	0,61	—	0,61	—	0,61	—	—	—	—	—
	0,63	0,90	—	0,90	—	0,90	—	0,90	—	—	—	—	—
	0,75	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—
	0,88	0,99	—	0,99	—	0,99	—	0,99	—	—	—	—	—
	1,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—
	1,13	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—
	1,25	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—
	1,50	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—
	1,75	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—
2,00	1,13	—	1,13	—	1,13	—	1,13	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GTR12 5,5 x L
 with hexagon head

Annex 34
 of European
 Technical Approval
 ETA-12/0580

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24	
$M_{t, nom}$	5 Nm						—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	1,34	—	—	—	
	0,55	1,34	1,34	1,34	1,34	1,34	—	—	—	
	0,63	1,46	1,46	1,46	1,46	1,46	—	—	—	
	0,75	1,93	1,93	1,93	1,93	1,93	—	—	—	
	0,88	2,35	2,35	2,35	2,35	2,35	—	—	—	
	1,00	2,82	2,82	2,82	2,82	2,82	—	—	—	
	1,13	2,82	2,82	2,82	2,82	2,82	—	—	—	
	1,25	2,82	2,82	2,82	2,82	2,82	—	—	—	
	1,50	2,82	2,82	2,82	2,82	2,82	—	—	—	
	1,75	2,82	2,82	2,82	2,82	2,82	—	—	—	
2,00	2,82	2,82	2,82	2,82	2,82	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,63	2,63	2,63	2,63	2,63	—	—	—	
	0,55	2,63	2,63	2,63	2,63	2,63	—	—	—	
	0,63	3,59	3,59	3,59	3,59	3,59	—	—	—	
	0,75	4,13	4,13	4,13	4,13	4,13	—	—	—	
	0,88	4,14	4,14	4,14	4,14	4,14	—	—	—	
	1,00	4,71	4,71	4,71	4,71	4,71	—	—	—	
	1,13	4,71	4,71	4,71	4,71	4,71	—	—	—	
	1,25	4,71	4,71	4,71	4,71	4,71	—	—	—	
	1,50	4,71	4,71	4,71	4,71	4,71	—	—	—	
	1,75	4,71	4,71	4,71	4,71	4,71	—	—	—	
2,00	4,71	4,71	4,71	4,71	4,71	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GTR12 5,5 x L
 with hexagon head and steel sealing washer $\varnothing 14$

Annex 35
 of European
 Technical Approval
 ETA-12/0580

Materials Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating Washer: EPDM sealing washer with metal top made of stainless steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 12,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24				
$M_{t, nom}$	5 Nm								—	—	—		
$V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	1,34	—	1,34	—	1,34	—	1,34	—	—	—	—	—
	0,55	1,34	—	1,34	—	1,34	—	1,34	—	—	—	—	—
	0,63	1,46	—	1,46	—	1,46	—	1,46	—	—	—	—	—
	0,75	1,93	—	1,93	—	1,93	—	1,93	—	—	—	—	—
	0,88	2,35	—	2,35	—	2,35	—	2,35	—	—	—	—	—
	1,00	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,13	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,25	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,50	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
	1,75	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—
2,00	2,82	—	2,82	—	2,82	—	2,82	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	2,63	—	2,63	—	2,63	—	2,63	—	—	—	—	—
	0,55	2,63	—	2,63	—	2,63	—	2,63	—	—	—	—	—
	0,63	3,59	—	3,59	—	3,59	—	3,59	—	—	—	—	—
	0,75	4,13	—	4,13	—	4,13	—	4,13	—	—	—	—	—
	0,88	4,14	—	4,14	—	4,14	—	4,14	—	—	—	—	—
	1,00	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—
	1,13	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—
	1,25	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—
	1,50	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—
	1,75	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—
2,00	4,71	—	4,71	—	4,71	—	4,71	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting

Self-drilling screw GTR12 5,5 x L
 with hexagon head and stainless steel sealing washer $\varnothing 14$

Annex 36
 of European
 Technical Approval
 ETA-12/0580

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <hr/> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class ≥ C24		
$M_{t,nom}$	5 Nm									—	—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	1,34	—	—	—		
	0,55	1,34	1,34	1,34	1,34	1,34	—	—	—		
	0,63	1,46	1,46	1,46	1,46	1,46	—	—	—		
	0,75	1,93	1,93	1,93	1,93	1,93	—	—	—		
	0,88	2,35	2,35	2,35	2,35	2,35	—	—	—		
	1,00	2,82	2,82	2,82	2,82	2,82	—	—	—		
	1,13	2,82	2,82	2,82	2,82	2,82	—	—	—		
	1,25	2,82	2,82	2,82	2,82	2,82	—	—	—		
	1,50	2,82	2,82	2,82	2,82	2,82	—	—	—		
	1,75	2,82	2,82	2,82	2,82	2,82	—	—	—		
2,00	2,82	2,82	2,82	2,82	2,82	—	—	—			
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,16	3,16	3,16	3,16	3,16	—	—	—		
	0,55	3,16	3,16	3,16	3,16	3,16	—	—	—		
	0,63	3,63	3,63	3,63	3,63	3,63	—	—	—		
	0,75	4,17	4,17	4,17	4,17	4,17	—	—	—		
	0,88	4,18	4,18	4,18	4,18	4,18	—	—	—		
	1,00	4,75	4,75	4,75	4,75	4,75	—	—	—		
	1,13	4,75	4,75	4,75	4,75	4,75	—	—	—		
	1,25	4,75	4,75	4,75	4,75	4,75	—	—	—		
	1,50	4,75	4,75	4,75	4,75	4,75	—	—	—		
	1,75	4,75	4,75	4,75	4,75	4,75	—	—	—		
2,00	4,75	4,75	4,75	4,75	4,75	—	—	—			

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 37 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR12 5,5 x L with hexagon head and steel sealing washer Ø16</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	1,34	—	—	—
	0,55	1,34	1,34	1,34	1,34	1,34	—	—	—
	0,63	1,46	1,46	1,46	1,46	1,46	—	—	—
	0,75	1,93	1,93	1,93	1,93	1,93	—	—	—
	0,88	2,35	2,35	2,35	2,35	2,35	—	—	—
	1,00	2,82	2,82	2,82	2,82	2,82	—	—	—
	1,13	2,82	2,82	2,82	2,82	2,82	—	—	—
	1,25	2,82	2,82	2,82	2,82	2,82	—	—	—
	1,50	2,82	2,82	2,82	2,82	2,82	—	—	—
	1,75	2,82	2,82	2,82	2,82	2,82	—	—	—
2,00	2,82	2,82	2,82	2,82	2,82	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,08	3,08	3,08	3,08	3,08	—	—	—
	0,55	3,08	3,08	3,08	3,08	3,08	—	—	—
	0,63	4,20	4,20	4,20	4,20	4,20	—	—	—
	0,75	4,84	4,84	4,84	4,84	4,84	—	—	—
	0,88	4,84	4,84	4,84	4,84	4,84	—	—	—
	1,00	5,51	5,51	5,51	5,51	5,51	—	—	—
	1,13	5,51	5,51	5,51	5,51	5,51	—	—	—
	1,25	5,51	5,51	5,51	5,51	5,51	—	—	—
	1,50	5,51	5,51	5,51	5,51	5,51	—	—	—
	1,75	5,51	5,51	5,51	5,51	5,51	—	—	—
2,00	5,51	5,51	5,51	5,51	5,51	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 39 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GT12FH 5,5 x L with hexagon flange head</p>	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 12,00$ mm <u>Timber substructure</u> No performance determined	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{f,nom}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,34	1,34	1,34	1,34	1,34	—	—	
	0,55	1,34	1,34	1,34	1,34	1,34	—	—	
	0,63	1,46	1,46	1,46	1,46	1,46	—	—	
	0,75	1,93	1,93	1,93	1,93	1,93	—	—	
	0,88	2,35	2,35	2,35	2,35	2,35	—	—	
	1,00	2,82	2,82	2,82	2,82	2,82	—	—	
	1,13	2,82	2,82	2,82	2,82	2,82	—	—	
	1,25	2,82	2,82	2,82	2,82	2,82	—	—	
	1,50	2,82	2,82	2,82	2,82	2,82	—	—	
	1,75	2,82	2,82	2,82	2,82	2,82	—	—	
2,00	2,82	2,82	2,82	2,82	2,82	—	—		
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	—	—	
	0,55	0,61	0,61	0,61	0,61	0,61	—	—	
	0,63	0,90	0,90	0,90	0,90	0,90	—	—	
	0,75	0,99	0,99	0,99	0,99	0,99	—	—	
	0,88	0,99	0,99	0,99	0,99	0,99	—	—	
	1,00	1,13	1,13	1,13	1,13	1,13	—	—	
	1,13	1,13	1,13	1,13	1,13	1,13	—	—	
	1,25	1,13	1,13	1,13	1,13	1,13	—	—	
	1,50	1,13	1,13	1,13	1,13	1,13	—	—	
	1,75	1,13	1,13	1,13	1,13	1,13	—	—	
2,00	1,13	1,13	1,13	1,13	1,13	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 40 of European Technical Approval ETA-12/0580
Self-drilling screw GTX12 5,5 x L with hexagon head	

Materials Fastener: stainless steel – SAE 304, Bi-metal Washer: EPDM sealing washer with metal top made of stainless steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 12,00$ mm Timber substructure No performance determined	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm					—	—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,34	1,34	1,34	1,34	—	—	—	
	0,55	1,34	1,34	1,34	1,34	—	—	—	
	0,63	1,46	1,46	1,46	1,46	—	—	—	
	0,75	1,93	1,93	1,93	1,93	—	—	—	
	0,88	2,35	2,35	2,35	2,35	—	—	—	
	1,00	2,82	2,82	2,82	2,82	—	—	—	
	1,13	2,82	2,82	2,82	2,82	—	—	—	
	1,25	2,82	2,82	2,82	2,82	—	—	—	
	1,50	2,82	2,82	2,82	2,82	—	—	—	
	1,75	2,82	2,82	2,82	2,82	—	—	—	
2,00	2,82	2,82	2,82	2,82	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,63	2,63	2,63	2,63	—	—	—	
	0,55	2,63	2,63	2,63	2,63	—	—	—	
	0,63	3,59	3,59	3,59	3,59	—	—	—	
	0,75	4,13	4,13	4,13	4,13	—	—	—	
	0,88	4,14	4,14	4,14	4,14	—	—	—	
	1,00	4,71	4,71	4,71	4,71	—	—	—	
	1,13	4,71	4,71	4,71	4,71	—	—	—	
	1,25	4,71	4,71	4,71	4,71	—	—	—	
	1,50	4,71	4,71	4,71	4,71	—	—	—	
	1,75	4,71	4,71	4,71	4,71	—	—	—	
2,00	4,71	4,71	4,71	4,71	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 41 of European Technical Approval ETA-12/0580
Self-drilling screw GTX12 5,5 x L with hexagon head and stainless steel sealing washer $\varnothing 14$	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24	
$M_{t,nom}$	7 Nm									—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,42	1,42	1,42	1,42	1,42	1,42	—	—	
	0,55	1,42	1,42	1,42	1,42	1,42	1,42	—	—	
	0,63	1,54	1,54	1,54	1,54	1,54	1,54	—	—	
	0,75	2,10	2,10	2,10	2,10	2,10	2,10	—	—	
	0,88	2,49	2,49	2,49	2,49	2,49	2,49	—	—	
	1,00	3,00	3,00	3,00	3,00	3,00	3,00	—	—	
	1,13	3,00	3,00	3,00	3,00	3,00	3,00	—	—	
	1,25	3,00	3,00	3,00	3,00	3,00	3,00	—	—	
	1,50	3,00	3,00	3,00	3,00	3,00	3,00	—	—	
	1,75	3,00	3,00	3,00	3,00	3,00	3,00	—	—	
2,00	3,00	3,00	3,00	3,00	3,00	3,00	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	0,70	0,70	—	—	
	0,55	0,70	0,70	0,70	0,70	0,70	0,70	—	—	
	0,63	0,88	0,88	0,88	0,88	0,88	0,88	—	—	
	0,75	1,21	1,21	1,21	1,21	1,21	1,21	—	—	
	0,88	1,32	1,32	1,32	1,32	1,32	1,32	—	—	
	1,00	1,60	1,60	1,60	1,60	1,60	1,60	—	—	
	1,13	1,60	1,60	1,60	1,60	1,60	1,60	—	—	
	1,25	1,60	1,60	1,60	1,60	1,60	1,60	—	—	
	1,50	1,60	1,60	1,60	1,60	1,60	1,60	—	—	
	1,75	1,60	1,60	1,60	1,60	1,60	1,60	—	—	
2,00	1,60	1,60	1,60	1,60	1,60	1,60	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 42 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR16 6,3 x L with hexagon head</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24	
$M_{t,nom}$	7 Nm									—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,42	1,42	1,42	1,42	1,42	1,42	1,42	—	
	0,55	1,42	1,42	1,42	1,42	1,42	1,42	1,42	—	
	0,63	1,54	1,54	1,54	1,54	1,54	1,54	1,54	—	
	0,75	2,10	2,10	2,10	2,10	2,10	2,10	2,10	—	
	0,88	2,49	2,49	2,49	2,49	2,49	2,49	2,49	—	
	1,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
	1,13	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
	1,25	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
	1,50	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
	1,75	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
2,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	3,31	3,31	3,31	3,31	3,31	—	
	0,55	2,53	2,53	3,31	3,31	3,31	3,31	3,31	—	
	0,63	2,53	2,53	3,74	3,74	3,74	3,74	3,74	—	
	0,75	2,53	2,53	4,85	4,85	4,85	4,85	4,85	—	
	0,88	2,53	2,53	5,50	5,50	5,50	5,50	5,50	—	
	1,00	2,53	2,53	6,37	6,37	6,37	6,37	6,37	—	
	1,13	2,53	2,53	6,37	6,37	6,37	6,37	6,37	—	
	1,25	2,53	2,53	6,37	6,37	6,37	6,37	6,37	—	
	1,50	2,53	2,53	6,37	6,37	6,37	6,37	6,37	—	
	1,75	2,53	2,53	6,37	6,37	6,37	6,37	6,37	—	
2,00	2,53	2,53	6,37	6,37	6,37	6,37	6,37	6,37		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 43 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR16 6,3 x L with hexagon head and steel sealing washer $\varnothing 16$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered, galvanized, additional ceramic coating</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1</p> <p>S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <hr/> <p><u>Timber substructure</u></p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24				
$M_{t,nom}$	7 Nm									—	—		
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,42	—	1,42	—	1,42	—	1,42	—	—	—	—	—
	0,55	1,42	—	1,42	—	1,42	—	1,42	—	—	—	—	—
	0,63	1,54	—	1,54	—	1,54	—	1,54	—	—	—	—	—
	0,75	2,10	—	2,10	—	2,10	—	2,10	—	—	—	—	—
	0,88	2,49	—	2,49	—	2,49	—	2,49	—	—	—	—	—
	1,00	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—
	1,13	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—
	1,25	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—
	1,50	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—
	1,75	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—
2,00	3,00	—	3,00	—	3,00	—	3,00	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	—	2,53	—	3,31	—	3,31	—	3,31	—	3,31	—
	0,55	2,53	—	2,53	—	3,31	—	3,31	—	3,31	—	3,31	—
	0,63	2,53	—	2,53	—	3,74	—	3,74	—	3,74	—	3,74	—
	0,75	2,53	—	2,53	—	4,85	—	4,85	—	4,85	—	4,85	—
	0,88	2,53	—	2,53	—	5,50	—	5,50	—	5,50	—	5,50	—
	1,00	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—
	1,13	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—
	1,25	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—
	1,50	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—
	1,75	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—
2,00	2,53	—	2,53	—	6,37	—	6,37	—	6,37	—	6,37	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 44 of European Technical Approval ETA-12/0580</p>
<p>Self-drilling screw GTR16 6,3 x L with hexagon head and stainless steel sealing washer $\varnothing 16$</p>	

Materials Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm) Washer: EPDM sealing washer with metal top made of carbon steel Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber EN 14081	
Drilling capacity: -	
Timber substructure For timber substructures performance determined with $M_{y,Rk} = 6,500 \text{ Nm}$ $f_{ax,k} = 23,027 \text{ N/mm}^2$ for $l_{ef} \geq 30 \text{ mm}$	

$t_{N,II}$ [mm]	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	Wood; class ≥ C24	
Drill Ø	3,50	4,00	4,50	4,50	4,50	4,50	5,00	5,30		
$M_{t,nom}$	4,5 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—	bearing resistance of component I
	0,55	—	—	—	—	—	—	—	—	
	0,63	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	
	0,75	0,75	0,95	0,95	0,95	0,95	0,95	0,95	0,95	
	0,88	0,75	0,95	1,32	1,32	1,32	1,32	1,32	1,32	
	1,00	0,75	0,95	1,32	1,73	1,73	1,73	1,73	1,73	
	1,13	0,75	0,95	1,32	1,73	1,73	1,73	1,73	1,73	
	1,25	0,75	0,95	1,32	1,73	1,73	2,18	2,18	2,18	
	1,50	0,75	0,95	1,32	1,73	1,73	2,18	2,18	2,18	
	1,75	0,75	0,95	1,32	1,73	1,73	2,18	—	2,18	
2,00	0,75	0,95	1,32	1,73	1,73	—	—	2,18		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—	pull-through resistance of component I
	0,55	—	—	—	—	—	—	—	—	
	0,63	0,96	1,07	1,36	1,50	1,50	1,66	2,12	2,18	
	0,75	0,96	1,07	1,36	1,50	1,50	1,66	2,12	2,18	
	0,88	0,96	1,07	1,36	1,50	1,50	1,66	2,12	2,18	
	1,00	0,96	1,07	1,36	1,50	1,50	1,66	2,12	2,18	
	1,13	0,96	1,07	1,36	1,50	1,50	1,66	2,12	—	
	1,25	0,96	1,07	1,36	1,50	1,50	1,66	2,12	—	
	1,50	0,96	1,07	1,36	1,50	1,50	1,66	2,12	—	
	1,75	0,96	1,07	1,36	1,50	1,50	1,66	—	—	
2,00	0,96	1,07	1,36	1,50	1,50	—	—	—		

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting	Annex 45 of European Technical Approval ETA-12/0580
Self-tapping screw GTA 6,5 x L with hexagon head and steel sealing washer Ø16	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and galvanized (12 µm)</p> <p>Washer: EPDM sealing washer with metal top made of carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: -</p> <p>Timber substructure</p> <p>No performance determined</p>	
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$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	Wood; class \geq C24		
Drill \varnothing	5,30			5,50	5,70						
$M_{t,nom}$	4,5 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—		
	0,55	—	—	—	—	—	—	—	—		
	0,63	1,98	—	1,98	—	1,98	—	1,98	—	1,98	—
	0,75	2,33	—	2,33	—	2,33	—	2,33	—	2,33	—
	0,88	2,69	—	2,69	—	2,69	—	2,69	—	2,69	—
	1,00	3,12	—	3,12	—	3,12	—	3,12	—	3,12	—
	1,13	3,12	—	3,12	—	3,12	—	3,12	—	3,12	—
	1,25	4,05	—	4,05	—	4,05	—	4,05	—	4,05	—
	1,50	4,41	—	4,41	—	4,41	—	4,41	—	4,41	—
	1,75	4,41	—	4,41	—	4,41	—	4,41	—	4,41	—
2,00	6,93	—	6,93	—	6,93	—	6,93	—	6,93	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	—	—	
	0,63	3,74	—	3,74	—	3,74	—	3,74	—	3,74	—
	0,75	4,85	—	4,85	—	4,85	—	4,85	—	4,85	—
	0,88	5,50	—	5,50	—	5,50	—	5,50	—	5,50	—
	1,00	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—
	1,13	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—
	1,25	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—
	1,50	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—
	1,75	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—
2,00	5,50	—	6,66	—	6,66	—	6,66	—	6,66	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws GT02, GTO3FH, GT3, GTR3, GTX3, GTX3AL, GT5, GT5FH, GTR5, GTX5, GT6, GT8, GTR8, GT12, GT12FH, GTR12, GTX12, GTR16, GTA, GTB for metal members and sheeting</p>	<p>Annex 46 of European Technical Approval ETA-12/0580</p>
<p>Self-tapping screw GTB 6,3 x L with hexagon head and steel sealing washer \varnothing16</p>	