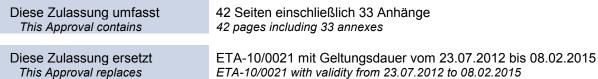


European Technical Approval ETA-10/0021

Handelsbezeichnung <i>Trade nam</i> e	CORONA, HWH, MH, DC und LP CORONA, HWH, MH, DC and LP
Zulassungsinhaber Holder of approval	RED HORSE dissing as Niels Bohrs Vej 25 8660 Skanderborg DÄNEMARK
Zulassungsgegenstand und Verwendungszweck Generic type and use of construction product	Befestigungsschrauben für Bauteile und Bleche aus Metall Fastening screws for metal members and sheeting
Geltungsdauer: vom <i>Validity: from</i> bis <i>to</i>	18 June 2013 18 June 2018
Herstellwerk Manufacturing plant	RED HORSE / dissing as Niels Bohr Vej 25-27 8660 Skanderborg Denmark

English translation prepared by DIBt - Original version in German language



This Approval replaces



Europäische Organisation für Technische Zulassungen European Organisation for Technical Approvals



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I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik 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/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik 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 Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to 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 Deutsches Institut für Bautechnik. 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 fully 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 February 1989, p. 12

Official Journal of the European Communities L 220, 30 August 1993, p. 1

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

⁴ Bundesgesetzblatt Teil I 1998, p. 812

⁵ Bundesgesetzblatt Teil I 2011, p. 2178

Official Journal of the European Communities L 17, 20 January 1994, p. 34



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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 CORONA, HWH, MH, DC and LP are self drilling screws listed in Table 1. The fastening screws are made of case hardened carbon steel or stainless steel. They are partly completed with metallic washers and EPDM sealing rings. For details see the appropriate Annexes.

Screws or washers for which the stainless steel grade A2 according to EN ISO 3506-1 is given in the respective Annexes (e. g. 1.4301 or 1.4567) may be made of stainless steel grade A4 (e. g. 1.4401 or 1.4578) as well.

Examples of fastening screws and the corresponding connections are shown in Annex 1.

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

Annex	Fastening screw	Description
Annex 2	CORONA 4,8L#1 TX20 EPDM-9,5B	with undercut, mushroom head with Torx T-20 drive and EPDM seal ring
Annex 3	CORONA 4,8L#2+ TX20 EPDM-9,5B	with undercut, mushroom head with Torx T-20 drive and EPDM seal ring
Annex 4 ^{*)}	CORONA 4,8L#1 TX20 EPDM-9,5B for timber substructures	with undercut, mushroom head with Torx T-20 drive and EPDM seal ring
Annex 5	HWH 4,8L#1 HX8 ALU-14B	with hexagon head and seal washer $\varnothing \ge 14 \text{ mm}$
Annex 6	HWH 4,8L#2+ HX8 ALU-14B	with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 7 ^{*)}	HWH 4,8L#1 HX8 ALU-14B for timber substructures	with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 8	LP 4,8L#1 TX20 M-ALU-14B	with countersunk head with Torx T-20 drive and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 9	LP 4,8L#2+ TX20 M-ALU-14B	with countersunk head with Torx T-20 drive and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 10 ^{*)}	LP 4,8L#1 TX20 M-ALU-14B for timber substructures	with countersunk head with Torx T-20 drive and seal washer $\emptyset \ge 14$ mm
Annex 11	HWH RXB 4,8xL#1 HX8 RX-14G	with hexagon head and seal washer $\varnothing \ge 14 \text{ mm}$
Annex 12	HWH 4,8xL#1 HX8	with hexagon head
Annex 13 ^{*)}	HWH RXB 4,8xL#1 HX8 RX-14G for timber substructures	with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 14	HWH RXB 5,5xL#1 HX8 RX-16G	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$

 Table 1
 Different types of fastening screws



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Annex	Fastening screw	Description
Annex 15	HWH RXB 5,5xL#2+ HX8 RX-16G	with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$
Annex 16	HWH 5,5xL#2+ HX8 ALU-16B	with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$
Annex 17	HWH RXB 5,5xL#2P+ HX8 RX-16G	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 18	HWH RXB 5,5xL#2P+ HX8 RX-16G	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 19	HWH 5,5xL#2P+ HX8 ALU-16B	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 20	HWH 5,5xL#2P+ HX8 ALU-16B	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 21	HWH RXB 5,5xL#5+ HX8 RX-16G	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 22	HWH 5,5xL#5+ HX8 ALU-16B	with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$
Annex 23	MH RXB 4,8xL#1 TX20	with mushroom head with Torx drive system
Annex 24	DC 4,8xL#1 TX20	with mushroom head with Torx drive system
Annex 25	CORONA RXB 4,8xL#1 TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 26 ^{*)}	CORONA RXB 4,8xL#1 TX20 EPDM-9,5B for timber substructures	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 27	CORONA RXB 5,5xL#2+ TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 28	CORONA 5,5xL#2+ TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 29	CORONA RXB 5,5xL#2P+ TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 30	CORONA RXB 5,5xL#2P+ TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 31	CORONA RXB 5,5xL#5 TX20 EPDM-9,5B	with undercut, mushroom head with Torx drive system and EPDM seal ring
Annex 32 ^{*)}	LP 4,8/5,5L#1 TX20 M-ALU-14B for timber substructures	with countersunk head with Torx drive system and seal washer $\emptyset \ge 14 \text{ mm}$
Annex 33	HWH RXB 4,8xL#2+ HX8 RX-14G	with hexagon head and seal washer $\varnothing \ge 14 \text{ mm}$

*) these fastening screws are applicable for fastening to timber substructures

1.2 Intended use

The fastening screws are intended to be used for fastening steel sheeting to steel substructures and as far as stated in Table 1 to timber substructures. The sheeting can either be used as wall or roof cladding or as load bearing wall and roof element.

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



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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. Fastening screws which are made of stainless steel are intended to be used in external environments with a high or very 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, 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 screws shall correspond to the drawings given in the appropriate Annexes (see Table 1).

The characteristic material values, dimensions and tolerances of the fastening screws neither indicated in this section nor in the Annexes shall correspond to the respective values laid down in the technical documentation⁷ to this European technical approval.

The characteristic values of the shear and tension resistance of the connections made with the fastening screws are given in the appropriate Annexes or in section 4.2.

The fastening screws are considered to satisfy the requirements of performance class A1 of the characteristic reaction to fire.

2.2 Methods of verification

The assessment of the fitness of the fastening screws 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.

The fastening screws are considered to satisfy the requirements of performance class A 1 of the characteristic 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.

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 the Annexes were determined by shear and tension tests.

The formulas to calculate the design resistance are given in clause 4.2.1.

The technical documentation to this European technical approval is deposited at Deutsches Institut für Bautechnik and, as far as relevant fort the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

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3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

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

This system of attestation of conformity is defined as follows:

System 3: 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 approved body:

(2) initial type-testing of the product.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 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 insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "control plan relating to this European technical approval" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik⁹.

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

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of fastening screws in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial type-testing of the product,

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in written reports.

⁸ Official Journal of the European Communities L 80 of 18.03.1998.

⁹ The "control plan" is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.



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3.3 CE marking

The CE marking shall be affixed on each packaging of fastening screws. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address 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.

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

4.1 Manufacturing

The fastening screws are manufactured in accordance with the provisions of the European technical approval using the manufacturing process as laid down in the technical documentation. The European technical approval is issued for the product on the basis of agreed

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, 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 Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Design

4.2.1 General

Fastening screws completely or partly exposed to external weather or similar conditions are made of stainless steel or are protected against corrosion. For the corrosion protection the rules given in EN 1090-2:2008 + A1:2011, EN 1993-1-3:2006 + AC:2009 and EN 1993-1-4:2006 are taken into account.

For the types of connection (a, b, c, d) listed in the Annexes it is not necessary to take into account the effect of constraints due to temperature. For other types of connection it shall be considered for design as long as constraining forces due to temperature do not occur or are not significant (e. g. sufficient flexibility of the structure).

The loading is predominantly static. (Remark: Wind loads are regarded as predominantly static.)

Dimensions, material properties, torque moments $M_{t,norm}$, minimum effective screw-in length I_{ef} and nominal material thicknesses t_N as stated in the ETA or in the Annexes are observed.

The verification concept stated in EN 1990:2002 + A1:2005 + A1:2005/AC:2010 is used for the design of the connections made with the fastening screws. The characteristic values (shear and tension resistance) stated in the Annexes are used for the design of the entire connections.

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

$$N_{Rd} = \frac{N_{Rk}}{\gamma_{M}}$$
$$V_{Rd} = \frac{V_{Rk}}{\gamma_{M}}$$



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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 + AC:2009, section 8.3 (8) is taken into account.

$$\frac{N_{Sd}}{N_{Rd}} + \frac{V_{Sd}}{V_{Rd}} \le 1.0$$

The possibly required reduction of the tension resistance (pull-through resistance) due to the position of the fastener is taken into account:

- in accordance with EN 1993 1 3:2006+ AC:2009, section 8.3 (7) and Fig. 8.2 (component I is made of steel) or EN 1999-1-4:2007 + A1:2011, section 8.1 (6) and Table 8.3 (component I is made of aluminium),
- of 0.7 if the supporting structure is an asymmetric profile (e.g. Z-profile) with t_{II} < 5 mm

4.2.2 Additional rules for connections with timber substructures

As far as no other provisions are made in the following EN 1995-1-1:2004 + A1:2008 applies. Drill points of self drilling screws are not taken into account for the effective screw-in length. The following terms are used:

- I_a Screw-in length part of thread screwed into component II including drill point.
- I_b Length of unthreaded part of the drill-point.
- I_{ef} effective screw-in length $I_{ef} = I_g I_b$
- $N_{R,k}$ = $F_{ax,Rk} \cdot k_{mod}$
- $V_{R,k}$ = $F_{v,Rk} \cdot k_{mod}$

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

 $M_{y,Rk}$ in equation (8.9) of EN 1995-1-1:2004 + A1:2008 and $f_{ax,k}$ in equation (8.40a) of EN 1995-1-1:2004 + A1:2008 are given in the Annexes of this ETA.

The characteristic values for pullout and bearing resistance (timber substructure) 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 right column of the table in the appropriate Annexes. The lower value is used for further calculations.

4.3 Installation

The installation is 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 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.



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The fastening elements 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 with the cylindrical part of the thread at least 6 mm if the substructure has a thickness over 6 mm unless otherwise declared in the manufacturer's instruction. Welded drill points are not taken into account for the screw-in length.

The conformity of the installed fasteners with the provisions of the ETA is attested by the executing company.

5 Indications to 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 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical approval.

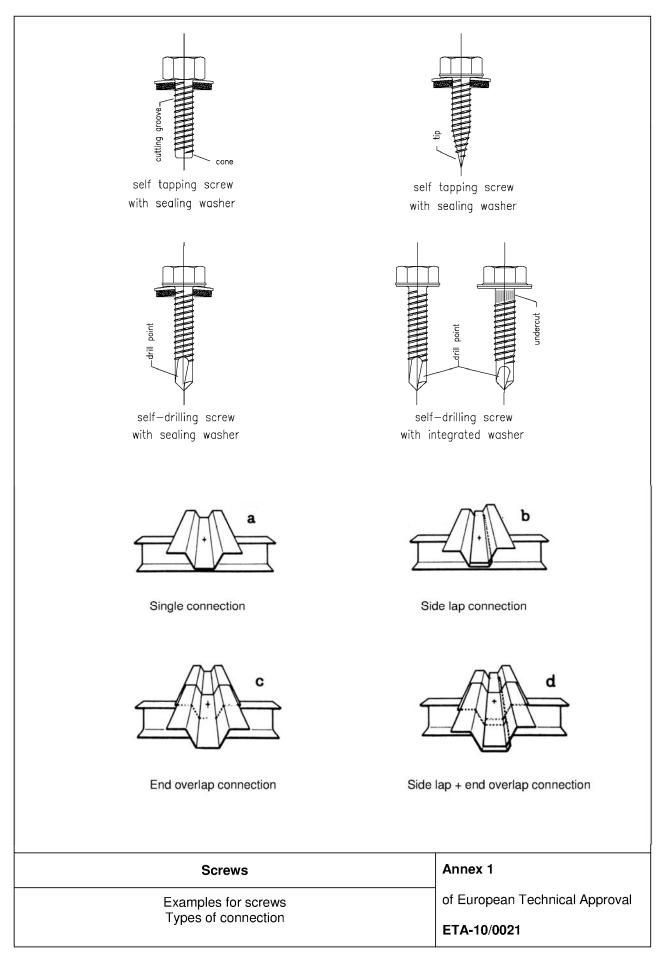
In addition all installation data (torque moment, application limits) shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

Andreas Kummerow p. p. Head of Department *beglaubigt:* Ulbrich

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English translation prepared by DIBt





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English translation prepared by DIBt



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If both components I and II are made of S320GD or S350GD, all values may be increased by 8,3%.

	Self drilling screw	Annex 2
CORO	NA 4,8xL#1 TX20 EPDM-9,5B	of European technical approval
with undercut, mushro	om head with Torx® drive system and EPDM seal ring	ETA – 10/0021

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English translation prepared by DIBt



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If component I is made of S320GD or S350GD, the with ^{a)} marked values may be increased by 8,3%.

Self drilling screw	Annex 3
CORONA 4,8xL#2+ TX20 EPDM-9,5B	of European technical approval
with undercut, mushroom head with $\operatorname{Torx}^{\mathbbm B}$ drive system and EPDM seal ring	ETA – 10/0021



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		, =	29	31	33	35	37	37 39 41 43 45 47									
	IVI _{t,1}	_{nom} = 0,50	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	 1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}	1,09 ^{a)}		-		
		0,50	1,09 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}	1,20 ^{a)}				
		0,63	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,64	1,64 ^{a)}	of			
		0,75	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,18 ^{a)}	bearing resistance component l			
	V _{R,k} for t _{N,I} =	0,88	1,41	1,44	,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,18 ^{a)}	uring resistan component l			
	for 1	1,00	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,18 ^{a)}	res oon			
	V _{R,k}	1,13	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,18 ^{a)}	ing om			
	 	1,25	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,18 ^{a)}	ear o			
		1,50	—	—	—	—	_	-	—	-	-	-	-	þ			
		1,75	—	_	—	—		-	-	-	-	-	-				
		2,00															
		0,50 0,55	1,37 1,37	1,45 1.49	1,45 ^{a)} 1,60	1,45 ^{a)} 1,65	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}	1,45 ^{a)} 1,65 ^{a)}				
		0,55 0,63	1,37 1,37	1,48 1,48	1,60 1,60	1,65 1,71	1,82	1,65	1,65 ^{°/} 1,97 ^{a)}	1,65 ^{°/} 1,97 ^{a)}	1,65 ⁹ 1,97 ^{a)}	1,65 [%] 1,97 ^{a)}	1,65 ^{°/}	of			
		0,03 0,75	1,37	1,40 1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	3,06 ^{a)}	nce T			
	= rź	0,88	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	3,68 ^{a)}	ista ent l			
	N _{R,k} for t _{N,I}	1,00	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	4,29 ^{a)}	pull-trough resistar component l			
	I _{R,k} f	1,13	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	5,43 ^{a)}	du c y f			
	Z	1,25	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	6,56 ^{a)}	trol cc			
		1,50			_					· _		_	<u> </u>	-lln			
		1,75	—	_	_	_	_	_	_	_	_	_	—	0			
		2,00	—	—	—	—	—	—	—	—	—	—	—				

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above in dependence on the screw-in length I_g are valid for k $_{mod}$ = 0,90 and timber strength grade C24 (ρ_k = 350 kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw	Annex 4
CORONA 4,8xL#1 TX20 EPDM-9,5B for timber substructures with undercut, mushroom head with Torx® drive system and EPDM seal ring	of European technical approval ETA – 10/0021

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English translation prepared by DIBt



	5,30		~	L	~1,60	~4,50	~2,90		MaterialsFastener:carbon steel quenched, tempered and galvanizedWasher:aluminium (EN AW-1100-H18), t = 0,8 mm carbon steel, galvanized, t = 0,8 mmComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235 - EN 10025-2 S280GD, S320GD or S350GD - EN 10346									6		
				~7,80		-			$\label{eq:stable} \begin{array}{l} \underline{Drilling\ capacity} & \Sigma t_i \leq 2 \ x \ 1,25 \ mm \end{array}$											
[t _N	,II =	0,5	50	0,5	55	0,6	63	0,75 0,88 1,00 1,13 1,25											
	M _{t,r}	-mem							4 Nm											
	V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00			0,95 1,11 1,11 1,11 1,11 1,11 1,11 1,11 1		0,95 1,11 1,36 1,36 1,36 1,36 1,36 1,36 		0,95 1,11 1,36 1,76 1,76 1,76 1,76 1,76 1,76 		0,95 1,11 1,36 1,76 2,36 2,36 2,36 2,36 		0,95 1,11 1,36 1,76 2,36 2,96 2,96 2,96 		0,95 1,11 1,36 1,76 2,36 2,96 3,32 3,32 	 	0,95 1,11 1,36 1,76 2,36 2,96 3,32 3,67 — — — —			
	N _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13	—		0,62 0,62 0,62 0,62 0,62 0,62 0,62 0,62		0,71 0,71 0,71 0,71 0,71 0,71 0,71 0,71		1,05 1,05 1,05 1,05 1,05 1,05 1,05 1,05		1,34 1,34 1,34 1,34 1,34 1,34 1,34 1,34		1,37 1,45 1,58 1,62 1,62 1,62 1,62 1,62 		1,37 1,45 1,58 1,92 1,92 1,92 1,92 1,92 		1,37 1,45 1,58 2,22 2,22 2,22 2,22 2,22 2,22 2,22 			

If both components I and II are made of S320GD or S350GD, all values may be increased by 8,3%.

Self drilling screw	Annex 5
HWH 4,8xL#1 HX8 ALU-14B	of European technical approval
with hexagon head and seal washer $\geq \ensuremath{\mathcal{O}}$ 14 mm	ETA – 10/0021

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~5,30		- F	~010.0		-7,0	•		Source and	ener: ner:	qu alu cai I: S2 II: S2	iminium rbon ste 80GD, 35 – El	, tem (EN eel, g S320 N 100	AW-11 alvaniz)GD or	00-H ed, t S350	alvaniz 18), t = = 0,8 m GD – E 10346	0,8 n m	
		Ī	~7,8	-			ſ	Drillir	ng capa	city	Σ	t _i ≤ 5,	,50 mm				
								<u>Timber substructures</u> for timber substructures no performance determined									
[t _N	,II =	1,5	50	1,7	5	2,	00	2,5	0	3,0	0	3,5	0	4,0	0	
1	M _{t,r}		10				-		5 N	m							
	$M_{t,nom} = 0,50 \ 1,89^{a} \ ac \ 1,89^{a} \ ac \ 1,89^{a}$							ac	1,89 ^{a)}	ac	1,89 ^{a)}	ac	1,89 ^{a)}	ac	1,89 ^{a)}	ac	
		A. 19, 32, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19	2,00	—	2,05	_	2,09 ^{a)}	ac	2,09 ^{a)}	ac	2,09 ^{a)}	ac	2,09 ^{a)}	ac	2,09 ^{a)}	ac	
		0,63		_	2,29	_	2,40 ^{a)}	ac	2,40 ^{a)}	ac	2,40 ^{a)}	ac	2,40 ^{a)}	ac	2,40 ^{a)}	ac	
	<u> </u>	0,75		—	2,69	—	2,91 ^{a)}	ac	2,91 ^{a)}	ac	2,91 ^{a)}	ac	2,91 ^{a)}	ac	2,91 ^{a)}	а	
	V _{R,k} for t _{N,I}		2,75	_	2,94	_	3,13	_	3,44	—	3,44	ac	3,44	ac	3,44	a	
	k fo		3,03 3,40	—	3,19	_	3,34	_	3,65	—	3,96 4,34	ac	3,96	а	3,96 4,66	a	
	,≺ R		3,40 3,77	_	3,56 3,93	_	3,71 4,09	_	4,03 4,4	_	4,34	_	4,66 5,03	_	4,66 5,35	a a	
		1,50	5,77	_	3,93	_	4,09	_	4,4	_	4,72	_	5,03	_	5,55	a 	
		1,75	_	_	_	_	_	_	_	_	_	_	_	_	_	_	
		2,00	_	_	_	_	_	_	_	_	_	_	_	_	_	_	
			1,37 ^{a)}	ac	1,37 ^{a)}	ac	1,37 ^{a)}	ac	1,37 ^{a)}	ac	1,37 ^{a)}	ac	1,37 ^{a)}	ac	1,37 ^{a)}	ac	
		0,55	1,45 ^{a)}	—	1,45 ^{a)}	_	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	
			1,58 ^{a)}	—	1,58 ^{a)}	—	1,58 ^{a)}	ac	1,58 ^{a)}	ac	1,58 ^{a)}	ac	1,58 ^{a)}	ac	1,58 ^{a)}	ac	
	Ш		2,06	—	2,36 ^{a)}	—	2,36 ^{a)}	ac	2,36 ^{a)}	ac	2,36 ^{a)}	ac	2,36 ^{a)}	ac	2,36 ^{a)}	а	
	t _{n,1}		2,06	_	2,62	_	2,69 ^{a)}	_	2,69 ^{a)}	—	2,69 ^{a)}	ac	2,69 ^{a)}	ac	2,69 ^{a)}	а	
	N _{R,k} for t _{N,I}		2,06	—	2,62	_	3,01	_	3,01 ^{a)}	—	3,01 ^{a)}	ac	3,01 ^{a)}	а	3,01 ^{a)}	а	
	N _{R,}		2,06	_	2,62	_	3,18	_	3,73 ^{a)}	—	3,73 ^{a)}	—	3,73 ^{a)}	_	3,73 ^{a)}	а	
		1,25		_	2,62	_	3,18	_	4,03	_	4,44 ^{a)}	—	4,44 ^{a)}	—	4,44 ^{a)}	а	
		1,50	—	_	-	_	-	_	-	_	-	_	-	_	-	—	
		1,75 2,00	_	_	_	_		_						_		_	
l		2,00	_	_	—	_	-	_	-	_		_		_		_	I

If component I is made of S320GD or S350GD, the with ^{a)} marked values may be increased by 8,3%.

Self drilling screw	Annex 6
HWH 4,8xL#2+ HX8 ALU-14B	of European technical approval
with hexagon head and seal washer $\geq \emptyset$ 14 mm	ETA – 10/0021



~5,30		~4,00	~03,50		~2,20	~4,50	Fasi Was Con	erials tener: sher: nponent nponent	quer alum carb I: S280	ninium (on stee 0GD, S	empere EN AW I, galva 320GD	-1100-H nized, t or S350	= 0,8 m)GD – E	0,8 mm	
					-		<u>Tim</u> for t M _{y,R} f _{ax,k}	_k = 4, = 13,	structur ubstruct 992 181	<u>es</u> tures pe Nr N/m	n Im² for	nce dete I _{ef} ≥	ermined 24 mi		
		, =	29	31	33	35	37	39	41	43	45	47			
	IVI _{t,}	_{nom} = 0,50	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	 1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}	1,07 ^{a)}		
	V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	1,12 ^{a)} 1,34 1,41 1,41 1,41 1,41 1,41 1,41 	1,12 ^{a)} 1,34 1,44 1,44 1,44 1,44 1,44 1,44	1,12 ^{a)} 1,34 ^{a)} 1,47 1,47 1,47 1,47 1,47 1,47	1,12 ^{a)} 1,34 ^{a)} 1,49 1,49 1,49 1,49 1,49 1,49 1,49 	1,12 ^{a)} 1,34 ^{a)} 1,52 1,52 1,52 1,52 1,52 1,52 1,52	1,12 ^{a)} 1,34 ^{a)} 1,55 1,55 1,55 1,55 1,55 1,55 	1,12 ^{a)} 1,34 ^{a)} 1,58 1,58 1,58 1,58 1,58 1,58	1,12 ^{a)} 1,34 ^{a)} 1,60 1,60 1,60 1,60 1,60 	1,12 ^{a)} 1,34 ^{a)} 1,60 1,60 1,60 1,60 1,60 	1,12 ^{a)} 1,34 ^{a)} 1,60 1,60 1,60 1,60 1,60 	1,12 ^{a)} 1,34 ^{a)} 1,60 ^{a)} 1,60 ^{a)} 1,60 ^{a)} 1,60 ^{a)} 1,60 ^{a)} 1,60 ^{a)}	bearing resistance of component I	
	N _{R,k} for t _{N,I} =	2,00 0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,37 1,37 1,37 1,37 1,37 1,37 1,37 1,37			 1,37 ^{a)} 1,45 ^{a)} 1,58 1,71 1,71 1,71 1,71 1,71 		 1,37 ^{a)} 1,58 ^{a)} 1,94 1,94 1,94 1,94 1,94 		 1,37 ^{a)} 1,45 ^{a)} 2,17 2,17 2,17 2,17 2,17 2,17 	 1,37 ^{a)} 1,58 ^{a)} 2,28 2,28 2,28 2,28 2,28 2,28 2,28 2,2			pull-trough resistance of component I	

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above in dependence on the screw-in length I_g are valid for k mod = 0,90 and timber strength grade C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of kmod and timber strength grades see section 4.2.2.

Self drilling screw	Annex 7
HWH 4,8xL#1 HX8 ALU-14B for timber substructures	of European technical approval
with hexagon head and seal washer $\geq \emptyset$ 14 mm	ETA – 10/0021

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	~	L 0 <u>9</u> 0 <u>9</u> 0 <u>9</u>	60 1	~8,00 ~4,50	~2,90			<u>Materi</u> Faster Washe Comp Comp	ner: er: onent	qu alu 1: S2 11: S2	ıminiı 80GI 35 —	ed, ter um (El D, S32 EN 10	0GD	or S3 2	-H32) 50GD	, t = 0 – EN	,8 mm 10346 10346
								Drilling	g cap	acity		Σt _i ≤ 2	2 x 1,	25 mr	ı		
				-Torx T-2	20			<u>Timbe</u> for tim				s no p	erfor	mance	e dete	rmine	d
	,II =	0,5	50	0,5	55	0,0	63	0,	75	0,8	88	1,	00	1,	13	1,2	25
M _{t,r}	nom =	0.00		0.00		0.00				Nm				0.00		0.00	
V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	_		0,82 1,07 1,07 1,07 1,07 1,07 1,07 1,07 		0,82 1,07 1,44 1,44 1,44 1,44 1,44 1,44 		0,82 1,07 1,44 2,05 2,05 2,05 2,05 2,05 2,05 	—	0,82 1,07 1,44 2,05 2,70 2,7 2,7 2,7 		0,82 1,07 1,44 2,05 2,70 3,34 3,34 3,34 		0,82 1,07 1,44 2,05 2,70 3,34 3,88 3,88 		0,82 1,07 1,44 2,05 2,70 3,34 3,88 4,42 — — —	
N _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13	0,57 0,57 0,57 0,57 0,57 0,57 0,57 0,57		0,62 0,62 0,62 0,62 0,62 0,62 0,62 0,62		0,71 0,71 0,71 0,71 0,71 0,71 0,71 0,71		1,05 1,05 1,05 1,05 1,05 1,05 1,05 1,05		1,32 1,34 1,34 1,34 1,34 1,34 1,34 1,34 		1,32 1,35 1,40 1,62 1,62 1,62 1,62 1,62 		1,32 1,35 1,40 1,92 1,92 1,92 1,92 1,92 		1,32 1,35 1,40 1,92 2,22 2,22 2,22 2,22 2,22 	

If both components I and II are made of S320GD or S350GD, all values may be increased by 8,3%.

Self drilling screw	Annex 8
LP 4,8xL#1 TX20 M-ALU-14B	of European technical approval
with countersunk head with Torx® drive system and seal washer $\geq \varnothing$ 14 mm	ETA – 10/0021

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	-04,80	21,60		~7,00	~3,90	9	<u>Mate</u> Faste Wash Baute Baute	ener: ner: eil I:	qu alu S2 S2	uminium 80GD, 35 – El	l, tem n (EN S320 N 100	pered a AW-50 GD or 25-2 GD or)52-H S350	132), t = IGD — E	0,8 mi N 1034
		~Ø9,00	-				<u>Drillir</u>	ng capa	<u>city</u>	Σ	t _i ≤ 5	,50 mm	[
-				Forx T-20		5	10. 0.006	<u>er subs</u> nber su	0.00	100	no pe	erforma	nce c	letermir	ned
_	.,II = _	1,5	50	1,7	75	2,0	00	2,5 5 N		3,0	00	3,5	50	4,0	0
V _{R,k} for t _{N,I} =	1,13 1,25 1,50 1,75 2,00	1,76 2,14 2,51 2,88 3,58 4,27 		1,39 1,59 1,89 2,40 2,79 3,19 3,79 4,39 — — —		1,39 1,64 2,03 2,66 3,08 3,50 4,01 4,52 		1,39 1,64 2,03 2,66 3,71 4,13 4,45 4,77 — —		1,39 1,64 2,03 2,66 3,71 4,75 4,88 5,01 — — —	ac ac ac ac ac ac 	1,39 1,64 2,03 2,66 3,71 4,75 5,13 5,26 — — —	ac ac ac ac ac a u	1,39 1,64 2,03 2,66 3,71 4,75 5,13 5,51 — — — —	ac ac a a a a a a
N _{B,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13			1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,62 2,62 2,62 		1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,66 ^{a)} 2,96 ^{a)} 3,18 —		1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,66 ^{a)} 2,96 ^{a)} 3,25 ^{a)} 		1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,66 ^{a)} 2,96 ^{a)} 3,25 ^{a)} 	ac ac ac ac ac ac 	1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,66 ^{a)} 2,96 ^{a)} 3,25 ^{a)} —	ac ac ac ac a 	1,32 ^{a)} 1,35 ^{a)} 1,40 ^{a)} 1,92 ^{a)} 2,29 ^{a)} 2,66 ^{a)} 2,96 ^{a)} 3,25 ^{a)} —	ac ac a a a a a a

Self drilling screw	Annex 9
LP 4,8xL#2+ TX20 M-ALU-14B with countersunk head with Torx T20 drive system and seal washer $\ge \emptyset$ 14 mm	of European technical approval
	ETA – 10/0021

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	~03.50	L ~2,2		~4,5	~2,90	Fast Was Corr	•	quer alum I: S28	ninium (empere EN AW 320GD	-5052-F or S35(galvanizo 132), t =)GD – E 81	0,8 mn	
						Drill	ing capa	acity	Σt _i :	≤2 x 1,2	25 mm			
				T-20		for ti M _{y,R} f _{ax,k}	_k = 4, = 13,	ubstruct 992 181	tures pe Nr N/m	n m² for	l _{ef} ≥	ermined 24 mi		
	, =	29	31	33	35	37	39	41	43	45	47			
IVI _{t,I}	_{nom} = 0,50	1,41	1,44	1,47	1,49	1,52	1,53	1,53	1,53	1,53	1,53 ^{a)}	1,53 ^{a)}		
	0,55	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,59	1,59	1,59	1,59 ^{a)}		
	0,63	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	1,82 ^{a)}	e of	
П	0,75	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,10 ^{a)}	bearing resistance component l	
V _{R,k} for t _{N,I} =	0,88	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,10 ^{a)}	ring resistal component	
,k fo	1,00	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,10 ^{a)}	g re npo	
<pre></pre>	1,13	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,10 ^{a)}	con	
	1,25 1,50	1,41	1,44	1,47	1,49	1,52	1,55	1,58	1,61	1,64	1,66	2,10 ^{a)}	bea	
	1,75	_												
	2,00	_	_	_	_		_	_	_	_	_	_		
	0,50	1,32	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}	1,32 ^{a)}		
	0,55	1,35	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	1,35 ^{a)}	of	
	0,63	1,37	1,40	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	1,40 ^{a)}	ice c	
<u>II</u>	0,75	1,37	1,48	1,60	1,71	1,82	1,92	1,92 ^{a)}		1,92 ^{a)}		1,92 ^{a)}	<u> </u>	
ir tn.,	0,88	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,29	2,29 ^{a)}	esis	
N _{R,k} for t _{N,I}	1,00	1,37	1,48	1,60	1,71	1,82	1,94	2,05	2,17	2,28	2,40	2,66 ^{a)} 2,96 ^{a)}	ough resistar component l	
z	1,13 1,25	1,37 1,37	1,48 1,48	1,60 1,60	1,71 1,71	1,82 1,82	1,94 1,94	2,05 2,05	2,17 2,17	2,28 2,28	2,40 2,40	2,96 ⁻³ 3,25 ^{a)}	pull-trough resista component	
	1,50			-,00				2,00	<u> </u>	<u>ک</u> ,20	<u>ک</u> ,40		ull-t	
	1,75	_	_	_	_	_	_	_	_	_	_	_	đ	
	2,00	_	—	—	—	—		—	—	—	_	_		

If component I is made of S320GD or S350GD, the grey highlighted values may be increased by 8,3%.

The values listed above in dependence on the screw-in length I_g are valid for k $_{mod}$ = 0,90 and timber strength grade C24 (ρ_k = 350 kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw	Annex 10
LP 4,8xL#1 TX20 M-ALU-14B for timber substructures	of European technical approval
with countersunk head with Torx® drive system and seal washer $\geq \varnothing$ 14 mm	ETA – 10/0021

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	-L	-4,50	-02.90	1000 H + 1000 H	stainle stainle stainle ent I: S280G ent II: S235 -	- EN 10025-	401) – EN 301) – EN 401) – EN or S350GE 2	10088 10088
	RXB				Ibstructures	$\Sigma t_i \le 2 \times 1$, es no perfor	101044.0,142.0000(002	ermined
t _{N,II} =	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
M _{t,nom} =		- 2)						
0,55 0,63 0,75 <u>1,00</u> 0,88 0,88 0,00 1,00 <u>1,13</u>		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$0,95^{a}$ — $1,11^{a}$ — $1,36^{a}$ — $1,36^{a}$ — $1,36^{a}$ — $1,36^{a}$ — $1,36^{a}$ — $1,36^{a}$ — \dots — \dots —	$0,95^{a}$ - $1,11^{a}$ - $1,36^{a}$ - $1,76^{a}$ - $1,76^{a}$ - $1,76^{a}$ - $1,76^{a}$ - $1,76^{a}$ - $1,76^{a}$ - \dots - \dots -	$-2,36^{a}$ — $-2,36^{a}$ — -2,3	$0,95^{a)}$ — $1,11^{a)}$ — $1,36^{a)}$ — $2,36^{a)}$ — $2,96^{a)}$ — $2,96^{a)}$ — $2,96^{a)}$ — $2,96^{a)}$ — - — - — - —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$0,95^{a}$ — $1,11^{a}$ — $1,36^{a}$ — $2,36^{a}$ — $2,96^{a}$ — $3,32^{a}$ — $3,67^{a}$ — — — — — — —
0,50 0,55 0,63 = 0,75 1,00 1,00 ^{W1} 1,13	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0,62 ^{a)} — 0,62 ^{a)} —	$\begin{array}{cccc} 0,71^{a)} &\\ $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1,37 ^{a)} — 1,45 ^{a)} — 1,58 ^{a)} — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 — 1,92 —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

If both components I and II are made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

Self drilling screw	Annex 11
HWH RXB 4,8xL#1 HX8 RX-14G	of European technical approval
with hexagon head and seal washer $\geq \emptyset$ 14 mm	ETA – 10/0021

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			- 16	-02.50	case hardened and galvanized Washer: none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-2 S280GD, S320GD or S350GD – EN 10346							
		~Ø10,0	· ·		Drilling cap	pacity	$\Sigma t_i \leq 2 \ge 1$,	25 mm				
					12 11-04 11-04	ostructures substructure	es no perfor	mance dete	ermined			
	,II =	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25			
M _{t,}	nom =	1,52 ^{a)} —	1,52 ^{a)} —	1,52 ^{a)} —	1,52 ^{a)} —	— 1,52 ^{a)} —	1,52 ^{a)} —	1,52 ^{a)} —	1,52 ^{a)} —			
	0,55	1,52 ^{a)} — 1,52 ^{a)} —	1,64 ^{a)} —	1,64 ^{a)} —	1,64 ^{a)} —	1,64 ^{a)} —	$1,64^{a}$ — $1,82^{a}$ —	$1,64^{a}$ — $1,82^{a}$ —	$1,64^{a}$ — $1,82^{a}$ —			
П		1,52 ^{a)} —	1,64 ^{a)} —	1,82 ^{a)} —	2,11 ^{a)} —	2,11 ^{a)} —	2,11 ^{a)} —	2,11 ^{a)} —	2,11 ^{a)} —			
V _{R,k} for t _{N,I} =		1,52 ^{a)} —	1,64 ^{a)} —	1,82 ^{a)} —	2,11 ^{a)} —	2,79 ^{a)} —	2,79 ^{a)} —	2,79 ^{a)} —	2,79 ^{a)} —			
3,k fol		1,52 ^{a)} — 1,52 ^{a)} —	1,64 ^{a)} — 1,64 ^{a)} —	1,82 ^{a)} — 1,82 ^{a)} —	2,11 ^{a)} — 2,11 ^{a)} —	2,79 ^{a)} — 2,79 ^{a)} —	3,47 ^{a)} — 3,47 ^{a)} —	3,47 ^{a)} — 3,47 ^{a)} —	3,47 ^{a)} — 3,47 ^{a)} —			
>		1,52 ^{a)} —	1,64 ^{a)} —	1,82 ^{a)} —	2,11 ^{a)} —	2,79 — 2,79 ^{a)} —	3,47 — 3,47 ^{a)} —	3,47 ^{a)} —	3,47° —			
	1,50											
	1,75											
	2,00		0,62 ^{a)} —	0,71 ^{a)} —	<u> </u>	<u> </u>	1,35 ^{a)} —	1,35 ^{a)} —	1,35 ^{a)} —			
		0,57 ^{a)} — 0,57 ^{a)} —	0,62 ^{a)} — 0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	$1,34^{a}$ —	1,35 ^a —	1,35 ^{a)} —	1,35 ^{°°} —			
		0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,81 —	1,81 —			
Ц		0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,92 —	2,22 —			
N _{R,k} for t _{n,I} =	0,88	0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,92 —	2,22 —			
k for		0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,92 —	2,22 —			
N _{R,}		0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,92 —	2,22 —			
	1,25 1,50	0,57 ^{a)} —	0,62 ^{a)} —	0,71 ^{a)} —	1,05 ^{a)} —	1,34 ^{a)} —	1,62 ^{a)} —	1,92 —	2,22 —			
	1,50											
	2,00											

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$\sim \frac{1}{2}$	stainless Washer: stainless stainless Component I: S280GD, Component II: Timber –	steel (1.4301) – EN 10088 steel (1.4401) – EN 10088 steel (1.4301) – EN 10088 steel (1.4401) – EN 10088 S320GD or S350GD – EN 10346 EN 14081
(RXB)	M _{y,Rk} = 4,992	performance determined with Nm /mm² for l _{ef} ≥ 24 mm
N _{R,k} for t _{N,I} =	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
If component I is made of S320GD or S350GD, the The values listed above are valid for component I.		
Self drilling screw		Annex 13

HWH RXB 4,8xL#1 HX8 RX-14G for timber substructures with hexagon head and seal washer $\geq \emptyset$ 14 mm

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	Materials Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088 Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-2 S280GD, S320GD or S350GD – EN 10346
	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

If both components I and II are made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

Self drilling screw	Annex 14
HWH RXB 5,5xL#1 HX8 RX-16G	of European technical approval
with hexagon head and seal washer $\geq \varnothing$ 16 mm	ETA – 10/0021

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			~L	-1,80	~8,00	~		Comp Drillin Timbe	ner: er: ponent oonent g capa er subs	sta sta sta sta sta sta sta sta sta sta	ainless ainless 280GD 235 – E 280GD	stee stee , S32 EN 10 or S Σt _i ≤	el (1.44 el (1.43 el (1.44 20GD c 0025-2 320GE 6,0 mn	01) - 01) - 01) - or S3 D - E	- EN 1(- EN 1(- EN 1(- EN 1(50GD N 1034	0088 0088 0088 – EN 46	10346 d	
		,II =	1,5	50	1,7	'5	2,	,00	2,5	i0	3,0	0	3,5	50	4,0	00		
	$N_{R,k}$ for $t_{N,I} = V_{R,k}$ for $t_{N,I} = \frac{1}{2}$	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 1,50	$2,04^{a}$ $2,21^{a}$ $2,46^{a}$ $2,88^{a}$ 3,16 3,44 3,79 4,14 4,84 4,84 4,84 1,65	ac ac — — — — — — — — — — — — — — — — —	$2,04^{a}$ $2,21^{a}$ $2,46^{a}$ $2,88^{a}$ 3,21 3,54 3,54 3,87 4,19 4,84 4,84 4,84 $1,77^{a}$ 2,14 3,14		2,04 ^{a)} 2,21 ^{a)} 2,46 ^{a)} 3,27 3,65 3,95 4,25 4,84 4,84 4,84 1,77 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63 2,63 2,63 2,63	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,04 ^{a)} 2,21 ^{a)} 2,88 ^{a)} 3,37 3,85 4,10 4,35 4,84 4,84 4,84 1,77 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 3,92 3,92 3,92	ac ac ac 	$\begin{array}{c} 2,04^{a)} \\ 2,21^{a)} \\ 2,88^{a)} \\ 3,47^{a)} \\ 4,06^{a)} \\ 4,26 \\ 4,45 \\ 4,84 \\ 4,84 \\ 4,84 \\ 1,77^{a)} \\ 2,35^{a)} \\ 2,73^{a)} \\ 2,86^{a)} \\ 2,98^{a)} \\ 3,40 \\ 3,81 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \end{array}$	ac ac ac ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 2,04^{a)} \\ 2,21^{a)} \\ 2,88^{a)} \\ 3,47^{a)} \\ 4,06^{a)} \\ 4,26 \\ 4,45 \\ 4,84 \\ 4,84 \\ 4,84 \\ 1,77^{a)} \\ 2,35^{a)} \\ 2,73^{a)} \\ 2,86^{a)} \\ 2,98^{a)} \\ 3,40 \\ 3,81 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \end{array}$	ac ac ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 2,04^{a} \\ 2,21^{a} \\ 2,46^{a} \\ 2,88^{a} \\ 3,47^{a} \\ 4,06^{a} \\ 4,26 \\ 4,45 \\ 4,84 \\ 4,84 \\ 4,84 \\ 1,77^{a} \\ 1,96^{a} \\ 2,35^{a} \\ 2,73^{a} \\ 2,86^{a} \\ 2,98^{a} \\ 3,40 \\ 3,81 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \\ 4,87 \end{array}$	ac ac ac ac ac ac ac ac ac ac ac ac ac a		
If compor	nent I	is mac						values	s marke	d wit	h ^{a)} may	[,] be ii	ncrease	ed by	8,3%.			
			S	Self o	Irilling	scr	ew					Ar	nnex 1	5				

 $HWH \; RXB \; 5,5xL\#2+ \; HX8 \; RX-16G$ with hexagon head and seal washer $\geq \varnothing \; 16 \; \text{mm}$

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~4,00	6110 6110	~L		1,80		-04'00		ner: er: oonent	ca al ca I: Sa II: Sa	uminiu arbon s 280GD 235 – E	dene m (E teel, , S32 EN 10	galvan 20GD c 0025-2	1100 lized or S3)-H18), , t = 0,8	3 mm – EN	
		Ø10,00				10	Timbe	g capa er subs	truct	ures		6,0 mn		e deter	mine	Ŀ
	,II =	1,5	50	1,7	'5	2	,00	2,5	0	3,0	00	3,5	50	4,0	0	
N _{R,k} for t _{N,i} = V _{R,k} for t _{N,i} = 3	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50	$2,04^{a}$ $2,21^{a}$ $2,46^{a}$ $2,88^{a}$ 3,16 3,44 3,79 4,14 4,84 4,84 4,84 1,65	ac	$2,04^{a}$ $2,21^{a}$ $2,46^{a}$ $2,88^{a}$ 3,21 3,54 3,54 3,87 4,19 4,84 4,84 4,84 $1,77^{a}$ $1,96^{a}$ 2,14 3,14	ac ac ac ac ac ac ac ac ac ac ac ac ac	2,04 ^a 2,21 ^a 2,88 ^a 3,27 3,65 3,95 4,25 4,84 4,84 4,84 1,77 ^a 1,96 ^a 2,35 2,63 2,63 2,63 2,63 2,63 2,63 2,63) ac ac ac 		 	2,04 ^{a)} 2,21 ^{a)} 2,46 ^{a)} 2,88 ^{a)} 3,47 ^{a)} 4,06 ^{a)} 4,26 4,45 4,84 4,84 4,84 1,77 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 4,87 4,87 4,87	ac ac ac ac ac ac ac ac ac ac ac ac ac a	$\begin{array}{c} 2,04^{a)}\\ 2,21^{a)}\\ 2,46^{a)}\\ 2,88^{a)}\\ 3,47^{a)}\\ 4,06^{a)}\\ 4,26\\ 4,45\\ 4,84\\ 4,84\\ 4,84\\ 4,84\\ 1,77^{a)}\\ 2,35^{a)}\\ 2,35^{a)}\\ 2,73^{a)}\\ 2,86^{a)}\\ 2,98^{a)}\\ 3,40\\ 3,81\\ 4,87\\ 4,87\\ 4,87\end{array}$	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,04 ^{a)} 2,21 ^{a)} 2,46 ^{a)} 2,88 ^{a)} 3,47 ^{a)} 4,06 ^{a)} 4,26 4,45 4,84 4,84 4,84 1,77 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 4,87 4,87	ac ac ac ac ac ac ac ac ac ac ac ac ac a	

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	~L ~1.80 ©16,00 ©10,00 ©10,00 ©10,00	Fast Was Com Com <u>Drilli</u>	her: sta sta ponent I: S2 ponent II: S2	ainless stee ainless stee 280GD, S32 235 – EN 10 280GD or S Σt _i ≤ <u>ures</u>	el (1.4401) - el (1.4301) - el (1.4401) - 20GD or S3 2025-2 320GD – E 6,0 mm	N 10346	
0,55 0,63 0,75 	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1,81 —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 9,5 mm) between component I and component II.

Self drilling screw	Annex 17
HWH RXB 5,5xL#2P+ HX8 RX-16G	of European technical approval
with hexagon head and seal washer $\geq \varnothing$ 16 mm	ETA – 10/0021

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4.00 11 75- 10 100	•	~L ~1,80 ~Ø16,00	-	~8.0			Comp	ner: er:	st st I: S2 II: S2 S2	ainless ainless 280GD 235 – E 280GD	s stee s stee s stee , S32 EN 10 or S	el (1.44 el (1.43 el (1.44 20GD (2025-2	01) - 01) - 01) - or S3 D – E	- EN 1(- EN 1(- EN 1(50GD N 1034	0088 0088 0088 – EN	10346
	6	RXB		1,7	75		or tin	ber subs	bstr	1011		perform		e deter		d
t _{N,II} M _{t,non}	_	1,5	0	1,7	5	2,0		2,0	-	5,0		0,0		4,0		
		0,34 ^{a)}	_	0,34 ^{a)}		0,34 ^{a)}	_	0,34 ^{a)}	_	0,34 ^{a)}	_	0,34 ^{a)}	_	0,34 ^{a)}		
		0,37 ^{a)}	_	0,37 ^{a)}	_	0,37 ^{a)}	_	0,37 ^{a)}	_	0,37 ^{a)}	_	0,37 ^{a)}	_	0,37 ^{a)}	_	
22		0,42 ^{a)}	- <u></u> -	0,42 ^{a)}		0,42 ^{a)}		0,42 ^{a)}	_	0,42 ^{a)}		0,42 ^{a)}	_	0,42 ^{a)}		
		0,49 ^{a)}	—	0,49 ^{a)}	—	0,49 ^{a)}	—	0,49 ^{a)}	—	0,49 ^{a)}		0,49 ^{a)}	—	0,49 ^{a)}	_	
		0,49 ^{a)}	_	0,52 ^{a)}	_	0,55 ^{a)}	_	0,60 ^{a)}	_	0,66 ^{a)}	_	0,66 ^{a)}	_	0,66 ^{a)}	_	
V _{R,k} for t _{N,I}	00, 1	0,49 ^{a)}	_	0,55 ^{a)}	_	0,60 ^{a)}	_	0,72 ^{a)}	_	0,83 ^{a)}	_	0,83 ^{a)}	_	0,83 ^{a)}	_	
/ _{R,k} 1		0,57	_	0,61	_	0,65	_	0,74	_	0,83 ^{a)}		0,83 ^{a)}	_	0,83 ^{a)}	_	
		0,64	_	0,67	_	0,70	_	0,77	_	0,83 ^{a)}	—	0,83 ^{a)}	_	0,83 ^{a)}	_	
.	,50	0,79	_	0,80	_	0,80	_	0,82	_	0,83 ^{a)}	_	0,83 ^{a)}	_	0,83 ^{a)}	_	
.	,75	0,79		0,80	—	0,80	_	0,82	_	0,83 ^{a)}	_	0,83 ^{a)}	—	0,83 ^{a)}	_	
	2,00	0,79	—	0,80	—	0,80	_	0,82	—	0,83 ^{a)}	—	0,83 ^{a)}	—	0,83 ^{a)}	_	
(),50	1,65	_	1,77 ^{a)}	_	1,77 ^{a)}		1,77 ^{a)}	_	1,77 ^{a)}	_	1,77 ^{a)}	_	1,77 ^{a)}	-	
(),55	1,65	—	1,96 ^{a)}	—	1,96 ^{a)}	—	1,96 ^{a)}	—	1,96 ^{a)}	—	1,96 ^{a)}	—	1,96 ^{a)}	—	
		1.05	_	2,14	—	2,35	—	2,35 ^{a)}	—	2,35 ^{a)}	—	2,35 ^{a)}	—	2,35 ^{a)}	—	
),63	1,65						2,73 ^{a)}	—	2,73 ^{a)}	—	2,73 ^{a)}	—	2,73 ^{a)}	—	
0		1,65	_	2,14	—	2,63	_	_,. •								
(11 (0,75		_	2,14 2,14	_	2,63	_	2,86 ^{a)}	—	2,86 ^{a)}	—	2,86 ^{a)}	—	2,86 ^{a)}	-	
(11 (),75),88	1,65			_		_		_	2,86 ^{a)} 2,98 ^{a)}	_	2,86°) 2,98 ^{a)}	_	2,86 ^a / 2,98 ^{a)}	_	
(11 (),75),88 1,00	1,65 1,65		2,14		2,63		2,86 ^{a)}				1	_			
N _{R,k} for t _{N,I} =),75),88 1,00 1,13 1,25	1,65 1,65 1,65 1,65 1,65	—	2,14 2,14	—	2,63 2,63 2,63 2,63	_ _ _ _	2,86 ^{a)} 2,98 ^{a)}	—	2,98 ^{a)} 3,40 3,81	—	2,98 ^{a)} 3,40 3,81	—	2,98 ^{a)}	-	
N _{R,k} for t _{N,I} =),75),88 I,00 I,13 I,25 I,50	1,65 1,65 1,65 1,65 1,65 1,65	_	2,14 2,14 2,14 2,14 2,14 2,14	_	2,63 2,63 2,63 2,63 2,63		2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 3,92	_	2,98 ^{a)} 3,40 3,81 4,87	_	2,98 ^{a)} 3,40 3,81 4,87	_	2,98 ^{a)} 3,40 3,81 4,87	_	
$N_{R,k}$ for $t_{N,l} =$),75),88 1,00 1,13 1,25 1,50 1,75	1,65 1,65 1,65 1,65 1,65		2,14 2,14 2,14 2,14 2,14		2,63 2,63 2,63 2,63	 	2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		2,98 ^{a)} 3,40 3,81		2,98 ^{a)} 3,40 3,81	_	2,98 ^{a)} 3,40 3,81		

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 19 mm) between component I and component II.

Self drilling screw	Annex 18
HWH RXB 5,5xL#2P+ HX8 RX-16G	of European technical approval
with hexagon head and seal washer $\geq \ensuremath{\varnothing}$ 16 mm	ETA – 10/0021



		- <u>-</u> 016.00 -010.00)		-8,00		Comp Drillin	ner: er: ponent ponent g capa er subs	ca l: S2 II: S2 <u>city</u>	uminiu arbon s 280GD 235 – I 280GD	rdene m (E steel, 0, S32 EN 1(0 or S Σt _i ≤	N AW- galvan 20GD c 0025-2 320GE 6,0 mn	-1100 hized br S3 - E n	anized 0-H18), 1, t = 0,8 350GD - EN 1034	3 mm – EN 46	10346
	II = om =	1,5	50	1,7	'5	2,0	00	2,5	0	3,0	00	3,5	50	4,0	0	
		0,82 ^{a)}	_	0,82 ^{a)}		0,82 ^{a)}		0,82 ^{a)}	_	0,82 ^{a)}		0,82 ^{a)}	_	0,82 ^{a)}	—	
1	0 55	0,83 ^{a)}	_	0,83 ^{a)}	_	0,83 ^{a)}										
								0,83 ^{a)}	—	0,83 ^{a)}		0,83 ^{a)}		0,83 ^{a)}	-	
	0,63	0,84 ^{a)}	—	0,84 ^{a)}	—	0,84 ^{a)}	—	0,84 ^{a)}	_	0,84 ^{a)}	—	0,84 ^{a)}	_	0,84 ^{a)}	_	
	0,63 0,75	0,84 ^{a)} 0,86 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)}		0,84 ^{a)} 0,86 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)}		0,84 ^{a)} 0,86 ^{a)}		
	0,63 0,75 0,88	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)}		
	0,63 0,75 0,88 1,00	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)}	 	0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}	 	0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}	 	
V _{R,k} for t _{N,I} =	0,63 0,75 0,88 1,00 1,13	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09	 	0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39	 	0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)}	_	0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21	 	0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34	_	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74	 	0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}	 	0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53 1,53	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63	 	0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53 1,53 1,53	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65		$\begin{array}{c} 0,84^{a)}\\ 0,86^{a)}\\ 1,00^{a)}\\ 1,14^{a)}\\ 1,24\\ 1,34\\ 1,53\\ 1,53\\ 1,53\\ 1,53\\ 1,77^{a)} \end{array}$	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,77 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,77 ^{a)}		$\begin{array}{c} 0,84^{a)} \\ 0,86^{a)} \\ 1,43^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 1,77^{a)} \end{array}$		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65		$\begin{array}{c} 0,84^{a)}\\ 0,86^{a)}\\ 1,00^{a)}\\ 1,14^{a)}\\ 1,24\\ 1,34\\ 1,53\\ 1,53\\ 1,53\\ 1,53\\ 1,77^{a)}\\ 1,96^{a)} \end{array}$	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,77 ^{a)} 1,96 ^{a)}		$\begin{array}{c} 0,84^{a)} \\ 0,86^{a)} \\ 1,43^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 1,77^{a)} \\ 1,96^{a)} \end{array}$		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)}		
	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63	$0,84^{a}$ $0,86^{a}$ $0,92^{a}$ $0,97^{a}$ 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65		$0,84^{a}$ $0,86^{a}$ $1,00^{a}$ $1,14^{a}$ 1,24 1,34 1,53 1,53 1,53 $1,77^{a}$ $1,96^{a}$ 2,14	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)} 2,35		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 1,96 ^{a)} 2,35 ^{a)}		$\begin{array}{c} 0,84^{a)} \\ 0,86^{a)} \\ 1,43^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 1,77^{a)} \\ 1,96^{a)} \\ 2,35^{a)} \end{array}$		$\begin{array}{c} 0,84^{a)} \\ 0,86^{a)} \\ 1,43^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 2,00^{a)} \\ 1,77^{a)} \\ 1,96^{a)} \\ 2,35^{a} \end{array}$		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)}		
= V _{R,k} for t _{N,I}	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,63 0,75	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65 1,65		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53 1,53 1,53 1,53 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14	 	0,84 ^{a)} 0,86 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 2,35 ^{a)} 2,73 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}		
h, i = Vr, k for th, i	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	0,84 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65 1,65 1,65		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53 1,53 1,53 1,53 1,53 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14 2,14		0,84 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,63 1,77 ^{a)} 2,35 2,63 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)}		$0,84^{a}$ $0,86^{a}$ $1,43^{a}$ $2,00^{a}$ 2,00		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^a		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)}		
In, I = VR, for th, I	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88 1,00	0,84 ^{a)} 0,86 ^{a)} 0,92 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65 1,65 1,65 1,65		$0,84^{a)}$ $0,86^{a)}$ $1,00^{a)}$ $1,14^{a)}$ 1,24 1,34 1,53 1,53 1,53 $1,77^{a)}$ $1,96^{a)}$ 2,14 2,14 2,14 2,14		0,84 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,66 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 1,81 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)}	—	
= V _{R,k} for t _{N,I}	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88 1,00 1,13	0,84 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65 1,65 1,65 1,65 1,65		$0,84^{a)}$ $0,86^{a)}$ $1,00^{a)}$ $1,14^{a)}$ 1,24 1,53 1,53 1,53 1,53 $1,77^{a)}$ $1,96^{a)}$ 2,14 2,14 2,14 2,14 2,14		0,84 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 2,35 ^{a)} 2,86 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40	_	
In, I = VR, for th, I	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25	$0,84^{a)}$ $0,86^{a)}$ $0,92^{a)}$ 1,09 1,21 1,44 1,44 1,44 1,65		0,84 ^{a)} 0,86 ^{a)} 1,00 ^{a)} 1,14 ^{a)} 1,24 1,34 1,53 1,53 1,53 1,53 1,53 2,14 2,14 2,14 2,14 2,14 2,14		0,84 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,63 1,63 2,63 2,63 2,63 2,63 2,63 2,63 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,35 ^a 2,98 ^{a)} 3,40 3,81		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,35 ^a 2,98 ^a 3,400 3,81	— — —	
In, I = VR, for th, I	0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50	0,84 ^{a)} 0,92 ^{a)} 0,97 ^{a)} 1,09 1,21 1,44 1,44 1,44 1,65 1,65 1,65 1,65 1,65 1,65 1,65		$0,84^{a)}$ $0,86^{a)}$ $1,00^{a)}$ $1,14^{a)}$ 1,24 1,53 1,53 1,53 1,53 $1,77^{a)}$ $1,96^{a)}$ 2,14 2,14 2,14 2,14 2,14		0,84 ^{a)} 1,09 ^{a)} 1,31 ^{a)} 1,39 1,47 1,63 1,63 1,63 1,63 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63		0,84 ^{a)} 0,86 ^{a)} 1,26 ^{a)} 1,70 1,74 1,81 1,81 1,81 1,81 2,35 ^{a)} 2,86 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)}		0,84 ^{a)} 0,86 ^{a)} 1,43 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 2,00 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40	_	

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 9,5 mm) between component I and component II.

Self drilling screw	Annex 19
HWH 5,5xL#2P+ HX8 ALU-16B	of European technical approval
with hexagon head and seal washer $\geq \emptyset$ 16 mm	ETA – 10/0021



×.	-1.80	-016.00 -010.00	-		-8,00		Comp Drillin	ner: er: ponent ponent g capa er subs	ca alı ca I: S2 II: S2 <u>city</u>	uminiu arbon s 280GD 235 – E 280GD	rdene m (E teel,), S32 EN 10 or S Σt _i \leq	galvan 20GD c 0025-2 320GE 6,0 mn	1100 iized or S3 D - E	anized)-H18), , t = 0,8 50GD - N 1034	mm - EN 6	10346
t _{N,II} M _{t,nor}		1,5	0	1,7	5	2,0	00	2,5	0	3,0	00	3,5	50	4,00	2	
I	0,50	0,34 ^{a)}	_	0,34 ^{a)}		0,34 ^{a)}		0,34 ^{a)}		0,34 ^{a)}	_	0,34 ^{a)}	_	10,0 .	_	
		0,37 ^{a)} 0,42 ^{a)}	_	0,37 ^{a)} 0,42 ^{a)}		0,37 ^{a)} 0,42 ^{a)}	_	0,37 ^{a)} 0,42 ^{a)}	_	0,37 ^{a)} 0,42 ^{a)}	_	0,37 ^{a)} 0,42 ^{a)}	_	0,37 ^{a)} 0,42 ^{a)}		
		0,42 ⁻⁷ 0,49 ^{a)}	_	0,42 ⁻⁵ 0,49 ^{a)}		0,42 ⁻⁷ 0,49 ^{a)}	_	0,42 ⁻⁵ 0,49 ^{a)}	_	0,42 ⁻⁷ 0,49 ^{a)}	_	0,42 ⁻⁷ 0,49 ^{a)}	_		_	
1														10 494		
			_		_		_		_		_	1	_	0,49 ^{a)} 0.66 ^{a)}		
	0,88	0,49 ^{a)}	_	0,52 ^{a)}		0,55 ^{a)}	_	0,60 ^{a)}		0,66 ^{a)}	_	0,66 ^{a)}	_	0,66 ^{a)}	_	
	0,88 1,00	0,49 ^{a)} 0,49 ^{a)}		0,52 ^{a)} 0,55 ^{a)}		0,55 ^{a)} 0,60 ^{a)}		0,60 ^{a)} 0,72 ^{a)}	—	0,66 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)}	_	
V _{R,k} for t _{N,I} =	0,88 1,00 1,13	0,49 ^{a)} 0,49 ^{a)} 0,57		0,52 ^{a)} 0,55 ^{a)} 0,61		0,55 ^{a)} 0,60 ^{a)} 0,65		0,60 ^{a)} 0,72 ^{a)} 0,74	_	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_ _ _	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25	0,49 ^{a)} 0,49 ^{a)}		0,52 ^{a)} 0,55 ^{a)}	_	0,55 ^{a)} 0,60 ^{a)}		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77		0,66 ^{a)} 0,83 ^{a)}	_	0,66 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)}		
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64	—	0,52 ^{a)} 0,55 ^{a)} 0,61 0,67		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70		0,60 ^{a)} 0,72 ^{a)} 0,74		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79	_	0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80	—	0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	 	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79	 	0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80	—	0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	 	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	
V _{R.k} for t _{N.I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79		0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80 0,80		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 0,80		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82 0,82		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)}	_	
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65		0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)}		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 0,80 1,77 ^{a)}		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^a		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^a		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)}	_	
V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65 1,65		0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)}		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)}		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^a		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^a		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)}	_	
= V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65 1,65 1,65		0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)}		$\begin{array}{c} 0,66^{a)} \\ 0,83^{a)} \\ 0,83^{a)} \\ 0,83^{a)} \\ 0,83^{a)} \\ 0,83^{a)} \\ 0,83^{a)} \\ 1,77^{a)} \\ 1,96^{a)} \end{array}$		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)}		$0,66^{a}$ $0,83^{a}$ $0,83^{a}$ $0,83^{a}$ $0,83^{a}$ $0,83^{a}$ $0,83^{a}$ $1,77^{a}$ $1,96^{a}$ $2,35^{a}$		
= V _{R,k} for t _{N,I} =	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65 1,65 1,65		0,52 ^{a)} 0,55 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63		0,60 ^{a)} 0,72 ^{a)} 0,74 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}		$\begin{array}{c} 0,66^{a)}\\ 0,83^{a)}\\ 0,83^{a)}\\ 0,83^{a)}\\ 0,83^{a)}\\ 0,83^{a)}\\ 0,83^{a)}\\ 1,77^{a)}\\ 1,96^{a)}\\ 2,35^{a)}\\ 2,73^{a)} \end{array}$		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)}	- - - - -	
$N_{R,k}$ for $t_{N,l} = V_{R,k}$ for $t_{N,l} = V_{R,k}$	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,63 0,75 0,88 1,00	0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65 1,65 1,65 1,65 1,65 1,65 1,65		0,52 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14 2,14 2,14 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63		0,60 ^{a)} 0,72 ^{a)} 0,74 0,77 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,88 ^{a)} 3,40		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40	- - - - -	
$N_{R,k}$ for $t_{N,I} = V_{R,k}$ for $t_{N,I} =$	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 1,65 1,65 1,65 1,65 1,65 1,65 1,65 1,65		0,52 ^{a)} 0,61 0,67 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14 2,14 2,14 2,14 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63 2,63		0,60 ^{a)} 0,72 ^{a)} 0,74 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		
$N_{R,k}$ for $t_{N,I} = V_{R,k}$ for $t_{N,I} = V_{R,k}$ for $t_{N,I} = V_{R,k}$	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,63 0,75 0,88 1,00 1,13 1,25	0,49 ^{a)} 0,57 0,64 0,79 0,79 0,79 1,65 1,65 1,65 1,65 1,65 1,65 1,65 1,65		0,52 ^{a)} 0,61 0,67 0,80 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14 2,14 2,14 2,14 2,14 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63 2,63 2,63 2,63		0,60 ^{a)} 0,72 ^{a)} 0,74 0,82 0,82 0,82 1,96 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,38 ^{a)} 3,40 3,81 3,92		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 4,87		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,35 ^{a)} 2,38 ^{a)} 2,98 ^{a)} 3,40 3,81 4,87		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81 4,87		
$N_{R,k}$ for $t_{N,l} = V_{R,k}$ for $t_{N,l} = V_{R,k}$	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	0,49 ^{a)} 0,49 ^{a)} 0,57 0,64 0,79 0,79 1,65 1,65 1,65 1,65 1,65 1,65 1,65 1,65		0,52 ^{a)} 0,61 0,67 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,14 2,14 2,14 2,14 2,14 2,14		0,55 ^{a)} 0,60 ^{a)} 0,65 0,70 0,80 0,80 1,77 ^{a)} 1,96 ^{a)} 2,35 2,63 2,63 2,63 2,63 2,63 2,63		0,60 ^{a)} 0,72 ^{a)} 0,74 0,82 0,82 0,82 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		0,66 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 0,83 ^{a)} 1,77 ^{a)} 1,96 ^{a)} 2,35 ^{a)} 2,73 ^{a)} 2,86 ^{a)} 2,98 ^{a)} 3,40 3,81		

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 19 mm) between component I and component II.

Self drilling screw	Annex 20
HWH 5,5xL#2P+ HX8 ALU-16B	of European technical approval
with hexagon head and seal washer $\ge \emptyset$ 16 mm	ETA – 10/0021

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English translation prepared by DIBt



~4,00 01'F0-	~L ~1,00 ~15,00	~04,90		stainles stainles stainles t I: S280GI t II: S235 –	s steel (1.4301) – EN 10088 s steel (1.4401) – EN 10088 s steel (1.4301) – EN 10088 s steel (1.4401) – EN 10088 D, S320GD or S350GD – EN 10346 EN 10025-2 D or S320GD – EN 10346						
-	-016,00 -010,00		$\begin{tabular}{lllllllllllllllllllllllllllllllllll$								
t _N	_{N,II} = 4,00	5,00	6,00	8,00	10,00 12,00						
Mt	,nom =										
	0,50 2,26 ^{a)} ac	2,26 ^{a)} ac		and the second sec	2,26 ^{a)} ac 2,26 ^{a)} a						
	$0,55 \ 2,54^{a}$ ac	2,54 ^{a)} ac	A DESCRIPTION OF A DESC	The second se	2,54 ^{a)} ac — —						
	0,63 2,97 ^{a)} ac	2,97 ^{a)} ac		2,97 ^{a)} ac	$2,97^{a}$ ac — —						
<u> </u>	$0,75 3,67^{a}$ ac $0,88 4,38^{a}$ ac	3,67 ^{a)} ac 4,38 ^{a)} ac	-	3,67 ^{a)} ac 4,38 ^{a)} ac	$3,67^{a}$ ac — — — 4,38 ^{a)} ac — — —						
V _{R.k} for t _{N,I}	0,88 4,38 ^{a)} ac 1,00 5,08 ^{a)} ac	4,38 ^{a)} ac 5,08 ^{a)} ac	4,38 ^{a)} ac 5,08 ^{a)} ac		0)						
, k fo	1,13 5,53 ac	5,08 ^{-,5} ac	5,08 ^{-,} ac 5,53 ac	5,08 ^{-,} ac 5,53 ac	5,08 ^{a)} ac — — — — — — — — — — — — — — — — — —						
2	1,25 5,98 ac	5,98 ac		5,98 ac	5,98 a — —						
	1,50 6,87 ac	6,87 ac		6,87 ac	6,87 a — —						
	1,75 6,87 —	6,87 —	6,87 —	6,87 —	6,87 — — —						
	2,00 6,87 —	6,87 —	6,87 —	6,87 —	6,87 — — —						
	0,50 1,77 ^{a)} ac	1,77 ^{a)} ac	1,77 ^{a)} ac	1,77 ^{a)} ac	1,77 ^{a)} ac 1,77 ^{a)} a						
	0,55 1,96 ^{a)} ac	1,96 ^{a)} ac	1,96 ^{a)} ac	1,96 ^{a)} ac	1,96 ^{a)} ac — —						
	0,63 2,35 ^{a)} ac	2,35 ^{a)} ac	2,35 ^{a)} ac		2,35 ^{a)} ac — —						
<u> </u>	0,75 2,73 ^{a)} ac	2,73 ^{a)} ac	2,73 ^{a)} ac		2,73 ^{a)} ac — —						
N _{R,k} for t _{n,i}	0,88 2,86 ^{a)} ac	2,86 ^{a)} ac	2,86 ^{a)} ac	1	2,86 ^{a)} ac — —						
, k foi	1,00 2,98 ^{a)} ac				2,98 ^{a)} ac — —						
R R	1,13 3,40 ac	3,40 ac		3,40 ac	3,40 a — —						
	1,25 3,81 ac 1,50 4,87 ac	3,81 ac 4,87 ac	3,81 ac 4,87 ac	3,81 ac 4,87 ac	3,81 a — — 4,87 a — —						
	1,75 4,87 ac	4,87 ac	4,87 ac	4,87 ac	4,87 <u>a</u> <u>-</u> <u>-</u>						
	2,00 4,87 —	4,87 —	4,87 —	4,87 —	4,87 — — —						
If component I is ma			•	ed with ^{a)} ma	ay be increased by 8,3%.						
	Self drillir	g screw			Annex 21						

 $\label{eq:HWH} HWH RXB 5,5xL\#5 \ HX8 \ RX-16G$ with hexagon head and seal washer $\geq \varnothing$ 16 mm

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	Washer: aluminiu carbon s Component I: S280GD Component II: S235 – E S280GD Drilling capacity Timber substructures	dened and galvanized m (EN AW-1100-H18), t = 0,8 mm deel, galvanized, t = 0,8 mm , S320GD or S350GD – EN 10346
0,55 2 0,63 2 0,75 3 1,00 5 1,00 5 1,13 1 1,25 1 1,50 1 1,75 2,00 0 0,55 1 0,55 1 0,63 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$10,00$ $12,00$ $2,26^{a}$ ac $2,26^{a}$ a $2,54^{a}$ ac $ 2,97^{a}$ ac $ 2,97^{a}$ ac $ 2,97^{a}$ ac $ 3,67^{a}$ ac $ 4,38^{a}$ ac $ 5,08^{a}$ ac $ 5,53$ a $ 5,98$ a $ 6,87$ a $ 6,87$ a $ 1,77^{a}$ ac $1,77^{a}$ a $1,96^{a}$ ac $ 2,35^{a}$ ac $ -$
ي ب ب ب ب ب ب ب ب ب ب ب ب ب ب ب ب ب ب ب	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2,86 ^{a)} ac — — 2,98 ^{a)} ac — — 3,40 a — — 3,81 a — — 4,87 a — — 4,87 — — —

HWH 5,5xL#5 HX8 ALU-16B with hexagon head and seal washer $\geq \varnothing$ 16 mm

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	-03'20	 	~1,60 ~4.	5		stainle stainle none ent I: S280G ent II: S235 -	- EN 10025-	401) – EN or S350GI 2	
					92 XHM 2439	apacity ubstructures			ermined
	, _{1,11} = , _{nom} =	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
$V_{R,k}$ for $t_{N,1} =$	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$1,52^{a}$ — $1,64^{a}$ — $1,82^{a}$ — $0,71^{a}$	2,11 ^{a)} – — – — –	- 2,79 ^{a)} — - 2,79 ^{a)} — - 2,79 ^{a)} — - 2,79 ^{a)} — - — — - — — - — —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
N _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13	$0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - $0,57^{a}$ - - - - - - -	- 0,62 ^{a)} —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{ccccc} 1,05^{a)} & -\\ -& -\\ & -& $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

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	-03,50	~L	~1,60	-02,90	÷	none t I: S280GI t II: S235 –	rdened and D, S320GD EN 10025-	or S350GE	d) – EN 10346) – EN 10346					
		~Ø9,50			Timber sub	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$								
	ı, ıı =	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25					
N _{R,k} for t _{N,I} = V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$2,11^{a}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$					
lf both c	ompor	ients I and II	are made o	f S320GD o	or S350GD, th	e values ma	rked with ^{a)} n	nay be increa	ased by 8,3%.					

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	05'6Ø~	-03,50	~1,0	-4,5 50		-02,90		Materia Fasten Washe Compo Compo	er: er: onent	stai nor 1: S28 11: S23	inles ie 30G[35 –	s steel 0, S32 EN 10	(1.4 0GD 025-:	2	EN 1	0088	
			013,8 0	•				Drilling	cap	acity		Σt _i ≤ 2	2 x 1,	25 mm	ĺ.		
								<u>Timber</u> for timb		1962 - 22	100	s no p	erfor	mance	dete	erminec	i
	_{1,II} =	0,5	50	0,5	5	0,6	3	0,7	5	0,8	8	1,0	0	1,1	3	1,2	25
V _{R,k} for t _{N,1} =	0,5 0,6 0,7 0,8 1,0 1,1 1,2 1,5 1,7 2,0	5 —		1,07 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 1,30 ^{a)} 0,62 ^{a)}		1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 1,65 ^{a)} 1,65 ^{a)} 1,65 ^{a)} 1,65 ^{a)} 		1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 2,22 ^{a)} 2,22 ^{a)} 2,22 ^{a)} 2,22 ^{a)} 2,22 ^{a)} 		1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 2,22 ^{a)} 2,62 ^{a)} 2,62 ^{a)} 2,62 ^{a)} 1,34 ^{a)}		1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 2,22 ^{a)} 3,02 ^{a)} 3,02 ^{a)} 1,45 ⁾		1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 2,22 ^{a)} 2,62 ^{a)} 3,02 ^{a)} 3,56 ^{a)} 1,45 ^{a)}	_ _ _	1,07 ^{a)} 1,30 ^{a)} 1,65 ^{a)} 2,22 ^{a)} 2,62 ^{a)} 3,02 ^{a)} 3,56 ^{a)} 4,09 ^{a)} 1,45 ^{a)}	
N _{R,k} for t _{N,1} =	0,5 0,6 0,7 0,8 1,0 1,1	5 0,57 ^{a)} 3 0,57 ^{a)} 5 0,57 ^{a)} 8 0,57 ^{a)} 0 0,57 ^{a)} 3 0,57 ^{a)} 3 0,57 ^{a)} 5 0,57 ^{a)} 5 0,57 ^{a)} 5		0,62 ^{a)} 0,62 ^{a)} 0,62 ^{a)} 0,62 ^{a)} 0,62 ^{a)} 0,62 ^{a)} 0,62 ^{a)} 		0,71 ^{a)} 0,71 ^{a)} 0,71 ^{a)} 0,71 ^{a)} 0,71 ^{a)} 0,71 ^{a)} 0,71 ^{a)} 		1,05 ^{a)} 1,05 ^{a)} 1,05 ^{a)} 1,05 ^{a)} 1,05 ^{a)} 1,05 ^{a)} 1,05 ^{a)} 		1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 1,34 ^{a)} 		$\begin{array}{c} 1,62^{a)} \\ \\ \\ \\ \\ \\ \\ \\ $		1,65 ^{a)} 1,92 1,92 1,92 1,92 1,92 1,92 1,92 		1,65 ^{a)} 1,97 ^{a)} 2,22 2,22 2,22 2,22 2,22 2,22 2,22 	

If both components I and II are made of S320GD or S350GD, the values marked with " may be increased by 8,3%.

Self drilling screw	Annex 25
CORONA RXB 4,8xL#1 TX20 EPDM-9,5B with undercut, mushroom head with Torx drive system and EPDM seal ring	of European technical approval ETA – 10/0021

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English translation prepared by DIBt



	stainless Washer: none	steel (1.4301) – EN 10088 steel (1.4401) – EN 10088 S320GD or S350GD – EN 10346 EN 14081
	Timber substructuresfor timber substructures $M_{y,Bk} = 4,992$	$t_i \le 2 \times 1,25 \text{ mm}$ performance determined with Nm /mm ² for $I_{ef} \ge 24 \text{ mm}$
N _{B,k} for t _{N,I} =	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
If component I is made of S320GD or S350GD, th The values listed above are valid for component I.		
Self drilling screw		Annex 26

CORONA RXB 4,8xL#1 TX20 EPDM-9,5B for timber substructures with undercut, mushroom head with Torx drive system and EPDM seal ring

Z53870.13

of European technical approval

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English translation prepared by DIBt



										sta nc I: S2 II: S2	ainless ainless one 280GD 235 – E 280GD	stee , S32 N 10	20GD c	01) - or S3	- EN 10	0088 – EN	10346
	(I		ð13,80	-1			1	Drillin	g capa	city	:	Σt _i ≤	6,0 mn	n			
									<u>er subs</u> nber su		<u>ures</u> uctures	no p	perform	nanc	e deter	mine	d
]	t _N	,II =	1,5	60	1,7	'5	2,0	00	2,5	0	3,0	0	3,5	60	4,0	00	
[M _{t,r}	= mon							_	1							
		(1) 201 (c) 1	2,04 ^{a)}		2,04 ^{a)}		2,04 ^{a)}	ac	2,04 ^{a)}	ac	2,04 ^{a)}	ac	2,04 ^{a)}	ac	2,04 ^{a)}	ac	
			$2,21^{a}$		2,21 ^{a)}		2,21 ^{a)}	ac	$2,21^{a}$	ac	$2,21^{a}$		$2,21^{a}$	ac	$2,21^{a}$	ac	
			2,46 ^{a)} 2,88 ^{a)}		2,46 ^{a)} 2,88 ^{a)}		2,46 ^{a)} 2,88 ^{a)}	ac	2,46 ^{a)} 2,88 ^{a)}		2,46 ^{a)} 2,88 ^{a)}		2,46 ^{a)} 2,88 ^{a)}		2,46 ^{a)} 2,88 ^{a)}		
	= ≓		2,00 3,16		2,00 /	ас —	3,27	ac	2,00	ac —	2,00 ⁻ 3,47 ^{a)}		2,00 3,47 ^{a)}	ac ac	2,00 3,47 ^{a)}	ac ac	
	V _{R,k} for t _{N,I}		3,44		3,54	_	3,65	_	3,85	_	4,06 ^{a)}		4,06 ^{a)}	ac	4,06 ^{a)}	ac	
	R,k f		3,79		3,87	_	3,95		4,10	_	4,26		4,26		4,26	_	
	>		4,14		4,19		4,25		4,35	_	4,45	_	4,45	_	4,45	_	
			4,84	_	4,84		4,84		4,84	—	4,84	_	4,84	_	4,84	_	
		1,75	4,84	—	4,84	—	4,84	—	4,84	—	4,84	—	4,84	—	4,84	—	
ļ			4,84		4,84	_	4,84		4,84	—	4,84	_	4,84		4,84	—	
		-	1,45 ^{a)}		1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}		1,45 ^{a)}	ac	1,45 ^{a)}	ac	
			1,65		1,65 ^{a)}	ac	1,65 ^{a)}	ac	1,65 ^{a)}		1,65 ^{a)}		1,65 ^{a)}	ac	1,65 ^{a)}	ac	
			1,65		1,97 ^{a)}	ac	1,97 ^{a)}	ac	1,97 ^{a)}		1,97 ^{a)}		1,97 ^{a)}	ac	1,97 ^{a)}	ac	
	<u> </u>		1,65	ac	2,14	ac	2,63	ac	3,06 ^{a)}		3,06 ^{a)}		3,06 ^{a)}		3,06 ^{a)}	ac	
	N _{R,k} for t _{N,I}	-	1,65	—	2,14		2,63	—	3,68 ^{a)}	—	3,68 ^{a)}		$3,68^{a}$		$3,68^{a}$	ac	
	_{ч,к} fc		1,65 1,65		2,14 2,14	_	2,63 2,63	_	3,92 3,92	_	4,29 ^{a)} 5,21	ac	4,29 ^{a)} 5,43	ac	4,29 ^{a)} 5,43	ac	
	Ż		1,65		2,14	_	2,63	_	3,92	_	5,21	_	5,43	_	5,43 6,05		
			1,65		2,14		2,63		3,92	_	5,21	_	5,63		6,05	_	
			1,65		2,14		2,63		3,92	—	5,21		5,63	_	6,05	_	
		2,00	1,65	_	2,14	—	2,63	_	3,92	_	5,21	_	5,63	—	6,05	—	
lf compon	ent l	is mad	de of S	320G	D or S3	350G	D, the v	values	s marke	d witl	h ^{a)} may	' be ii	ncrease	d by	8,3%.		
			S	Self c	Irilling	scr	ew					Ar	nnex 2	27			
												1					

with undercut, mushroom head with Torx drive system and EPDM seal ring

8.06.02-126/13

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English translation prepared by DIBt



	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
	Timber substructures for timber substructures no performance determined
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	a) ac 2,21 ^a) ac 2,46 ^a) ac 2,88 ^a) ac 3,47 ^a) ac 4,06 ^a) ac 4,35 - 4,45 - 4,45 - 4,45 - 4,45 - 4,84 - 4
If component I is made of S320GD or S350GD, the Self drilling screw CORONA 5,5xL#2+ TX20 EPI	Annex 28

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English translation prepared by DIBt



-09,50	~Ø13,80										ainless ne 280GD 235 – E 280GD	, S32 , S32 EN 10 or S	20GD c	01) - or S3 D – E	- EN 100 - EN 100 50GD – N 10346	088 EN 1	0346
		=	8)	1,7	75		Timbe	g capa er subs aber su	truct bstru	ures	s no p		nance	e determ		
		, - 10m =	1,0		.,,	0		,00	2,0	-		, <u> </u>	0,0	<i></i>	4,00		
	<u>, wt</u>		0,82 ^{a)}	_	0,82 ^{a)}	_	0,82 ^a)	0,82 ^{a)}	_	0,82 ^{a)}		0,82 ^{a)}	_	0,82 ^{a)}	_	
			0,83 ^{a)}		0,83 ^{a)}	_	0,83ª		0,83 ^{a)}		0,83 ^{a)}	_	0,83 ^{a)}		0,83 ^{a)}	_	
			0,84 ^{a)}		0,84 ^{a)}	_	0,84ª		0,84 ^{a)}		0,84 ^{a)}		0,84 ^{a)}		-	_	
			0,86 ^{a)}		0,86 ^{a)}	_	0,86ª		0,86 ^{a)}		0,86 ^{a)}	_	0,86 ^{a)}				
	 		0,92 ^{a)}		1,00 ^{a)}		1,09 ^a		1,26 ^{a)}		1,43 ^{a)}		1,43 ^{a)}		1,43 ^{a)}	_	
	ort		0,97 ^{a)}	_	1,14 ^{a)}	_	1,31ª		1,66 ^{a)}		2,00 ^{a)}	_	2,00 ^{a)}			_	
	V _{R,k} for t _{N,I}		1,09	_	1,24		1,39		1,70		2,00 ^{a)}		2,00 ^{a)}			_	
	>		1,21	_	1,34	_	1,47		1,74		2,00 ^{a)}	_	2,00 ^{a)}		2,00 ^{a)}	_	
			1,44	_	1,53	_	1,63		1,81		2,00 ^{a)}	_	2,00 ^{a)}			_	
			1,44	_	1,53	_	1,63		1,81		2,00 ^{a)}	_	2,00 ^{a)}		2,00 ^{a)}	_	
			1,44	_	1,53	_	1,63		1,81		2,00 ^{a)}	_	2,00 ^{a)}		2,00 ^{a)}	_	
			1,45 ^{a)}	_	1,45 ^{a)}	_	1,45ª		1,45 ^{a)}		1,45 ^{a)}	_	1,45 ^{a)}	_	1,45 ^{a)}	=	
			1,65	_	1,65 ^{a)}	_	1,65ª)	1,65 ^{a)}		1,65 ^{a)}	_	1,65 ^{a)}	_	1,65 ^{a)}	_	
			1,65	_	1,97 ^{a)}	_	1,97ª		1,97 ^{a)}		1,97 ^{a)}	_	1,97 ^{a)}	_	1,97 ^{a)}	_	
			1,65	_	2,14	_	2,63	_	3,06 ^{a)}		3,06 ^{a)}	_	3,06 ^{a)}	_		_	
	tr, -		1,65	_	2,14	_	2,63	_	3,68 ^{a)}		3,68 ^{a)}	_	3,68 ^{a)}		-	_	
	N _{R,k} for t _{N,I}	1,00	1,65	_	2,14	_	2,63	_	3,92	_	4,29 ^{a)}	—	4,29 ^{a)}	_	4,29 ^{a)}	_	
	L 🕹	1,13	1,65	_	2,14	—	2,63		3,92	_	5,21	_	5,43		5,43	_	
	^H		4 05	_	2,14	—	2,63	_	3,92	—	5,21	—	5,63			_	
	N _R	1,25	1,65					_	3,92	_	5,21	_	5,63	_	6,05		
	N _R	1,50	1,65	_	2,14	—	2,63	_		_						- 1	
	NR	1,50 1,75			2,14 2,14 2,14	_	2,63 2,63 2,63	—	3,92 3,92 3,92	_	5,21 5,21 5,21	_	5,63 5,63	_		_	

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 9,5 mm) between component I and component II.

Self drilling screw	Annex 29
CORONA RXB 5,5xL#2P+ TX20 EPDM-9,5B	of European technical approval
with undercut, mushroom head with Torx drive system and EPDM seal ring	ETA – 10/0021

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English translation prepared by DIBt



-04,10	~L	-94,50	Faste Wash Comp Comp	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$								
t _{N,II} =	1,50	1,75	2,00	2,50	4,00							
M _{t,nom} =				_								
0,55 0,63 0,75 1,75 0,88 0,75 1,00 1,75 2,00 0,55 0,63 = 0,75 0,55 0,63 = 0,75 0,88 0,55 0,63 1,00 0,55 0,63 1,00 0,55 0,63 1,00 0,55 1,00 0,55 1,50 0,55 1,50 0,55 1,50 0,55 1,50 0,55 1,50 0,55 1,50 0,55 1,50 0,55 1,50 0,88 1,00 1,00 1,00 1,00 1,00 1,75 1,50 1,75 1,50 1,75 1,50 1,75 1,50 1,75 1,50 1,75 1,75 1,75 1,75 1,75 1,75 1,75 1,75	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$,34^{a})$ — $,37^{a})$ — $,42^{a})$ — $,49^{a})$ — $,55^{a})$ — $,60^{a})$ — $,60^{a})$ — $,65^{a})$ — ,0,80 — ,0,80 — ,0,80 — ,0,80 — ,0,80 — ,0,80 — ,0,80 — ,2,63 — 2,63 — 2,63 — 2,63 — 2,63 — 2,63 — 2,63 — 2,63 — 2,63 — 2,63 —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$0,34^{a)}$ — $0,37^{a)}$ — $0,42^{a)}$ — $0,49^{a)}$ — $0,66^{a)}$ — $0,83^{a)}$ — $0,83^{a)}$ — $0,83^{a)}$ — $0,83^{a)}$ — $0,83^{a)}$ — $0,83^{a)}$ — $1,45^{a)}$ — $1,65^{a)}$ — $1,65^{a)}$ — $1,97^{a)}$ — $3,06^{a)}$ — $3,68^{a)}$ — $4,29^{a)}$ — 5,43 — 6,05 — 6,05 —					

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

The values listed above are valid for hard, non pre-drilled intermediate layers (plasterboard, timber or fiber cement sheets with thickness up to 19 mm) between component I and component II.

Self drilling screw	Annex 30
CORONA RXB 5,5xL#2P+ TX20 EPDM-9,5E	
with undercut, mushroom head with Torx drive system and EPDM s	ETA – 10/0021

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English translation prepared by DIBt



09,50 04,50	•	MaterialsFastener:stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088Washer:noneComponent I:S280GD, S320GD or S350GD – EN 10346Component II:S235 – EN 10025-2 S280GD or S320GD – EN 10346Drilling capacity $\Sigma t_i \le 12,5 \text{ mm}$ Timber substructures for timber substructures no performance determined								0088 – EN 10346 46					
	t _N	ı,ıı =	4,0	0	5,0	0	6,0	0	8,0	0	10,0	00	12,	00	
		nom =		147			1		_		- 15		,		
			2,26 ^{a)}	ac	2,26 ^{a)}	ac	2,26 ^{a)}	ac	2,26 ^{a)}	ac	2,26 ^{a)}	ac	2,26 ^{a)}	а	
		0,55	2,54 ^{a)}	ac	2,54 ^{a)}	ac	2,54 ^{a)}	ac	2,54 ^{a)}	ac	2,54 ^{a)}	ac	_		
		0,63	2,97 ^{a)}	ac	2,97 ^{a)}	ac	2,97 ^{a)}	ac	2,97 ^{a)}	ac	2,97 ^{a)}	ac	-	—	
	п		3,67 ^{a)}	ac	3,67 ^{a)}	ac	3,67 ^{a)}		3,67 ^{a)}	ac	3,67 ^{a)}	ac	-	—	
	t,		4,38 ^{a)}	ac	4,38 ^{a)}	ac	4,38 ^{a)}		4,38 ^{a)}	ac	4,38 ^{a)}	ac	-	—	
	V _{R,k} for t _{N,I}		5,08 ^{a)}	ac	5,08 ^{a)}	ac	5,08 ^{a)}	ac	5,08 ^{a)}	ac	5,08 ^{a)}	ac	-	—	
	V _{R,}		5,53	ac	5,53	ac	· ·	ac	5,53	ac	5,53	а	-	—	
			5,98	ac	5,98	ac	l í	ac	5,98	ac	5,98	а	-	—	
			6,87	ac	6,87	ac	6,87	ac	6,87	ac	6,87	а	-	_	
			6,87 6,87	_	6,87 6,87	_	6,87 6,87	_	6,87 6,87	_	6,87 6,87	_		_	
			1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	ac	1,45 ^{a)}	a	
			1,65 ^{a)}	ac	1,65 ^{a)}	ac	1,65 ^{a)}		1,65 ^{a)}	ac	1,65 ^{a)}	ac	_	_	
			1,97 ^{a)}	ac	1,97 ^{a)}	ac	1,97 ^{a)}		1,97 ^{a)}	ac	1,97 ^{a)}	ac	_	_	
	II.		3,06 ^{a)}	ac	3,06 ^{a)}	ac	3,06 ^{a)}		3,06 ^{a)}		3,06 ^{a)}	ac	_	_	
	N _{R,k} for t _{N,I} =		3,68 ^{a)}	ac	3,68 ^{a)}	ac	3,68 ^{a)}	ac	3,68 ^{a)}	ac	3,68 ^{a)}	ac	_	_	
	for		4,29 ^{a)}	ac	4,29 ^{a)}	ac	4,29 ^{a)}	ac	4,29 ^{a)}	ac	4,29 ^{a)}	ac	-	_	
	N _{R,k}		5,43	ac	6,56	ac	6,56	ac	6,56	ac	6,56	а	-	—	
			5,74	ac	6,56	ac	6,56	ac	6,56	ac	6,56	а	-	—	
			5,74	ac	6,56	ac	6,56	ac	6,56	ac	6,56	а	-	—	
			5,74	_	6,56	_	6,56	_	6,56	_	6,56	_	-	_	
		2,00	5,74	_	6,56	_	6,56	_	6,56	_	6,56	_		_	l
If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.															
		;	Self dr	illin	g screv	w					۸n	nex	21		
												IEX	31		
CO	PDM-9	.5B			of E	Euro	pean t	techr	nical approval						

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English translation prepared by DIBt



-L -4,00 -2,20	MaterialsFastener:stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088Washer:aluminium (EN AW-5052-H32), t = 0,8 mm Component I: S280GD, S320GD or S350GD – EN 10346 Component II: Timber – EN 14081							
~014.00 -09.00	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$							
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							
If component I is made of S320GD or S350GI The values listed above are valid for compone	, the values marked with ^{a)} may be increased by 8,3%. It I. For component II see section 4.2.2.							
Self drilling scre	v Annex 32							

with countersunk head with Torx drive system and seal washer $\geq \varnothing$ 14 mm

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English translation prepared by DIBt



									Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088 Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-2 S280GD or S320GD – EN 10346							
$\begin{tabular}{ c c c c }\hline \hline $											mined					
		.,II =	1,5	50	1,7	75	2	,00	2,5	0	3,0	00	3,5	50	4,0	0
	V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88	1,89 ^{a)} 2,00 2,18 2,46 2,75 3,03	—	1,89 ^{a)} 2,05 2,29 2,69 2,94 3,19	ac 	1,89 ^a 2,09 ^a 2,40 ^a 2,91 ^a 3,13 3,34	ac ac ac ac	1,89 ^{a)} 2,09 ^{a)} 2,40 ^{a)} 2,91 ^{a)} 3,44 3,65	ac ac ac ac ac	1,89 ^{a)} 2,09 ^{a)} 2,40 ^{a)} 2,91 ^{a)} 3,44 3,96	ac ac ac ac ac ac	1,89 ^{a)} 2,09 ^{a)} 2,40 ^{a)} 2,91 ^{a)} 3,44 3,96	ac ac ac ac ac ac	1,89 ^{a)} 2,09 ^{a)} 2,40 ^{a)} 2,91 ^{a)} 3,44 3,96	ac ac ac ac ac ac
	V _{R,k} f	1,13 1,25 1,50 1,75 2,00	3,40 3,77 3,77 3,77 3,77 1,37 ^{a)}		3,56 3,93 3,93 3,93 3,93 3,93 1,37 ^{a)}	 ac	3,71 4,09 4,09 4,09 4,09 1,37	 	4,03 4,40 4,40 4,40 4,40 1,37 ^{a)}	 	4,34 4,72 4,72 4,72 4,72 4,72 1,37 ^{a)}	 ac	4,66 5,03 5,03 5,03 5,03 1,37 ^{a)}	 ac	4,66 5,35 5,35 5,35 5,35 5,35 1,37 ^{a)}	a a — — ас
	V _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88 1,00	1,45 ^{a)} 1,58 ^{a)} 1,77 1,77 1,77	 	1,45 ^{a)} 1,58 ^{a)} 2,18 2,18 2,18		1,45 ^ª 1,58 ^ª 2,36 ^ª 2,58 2,58	^{ac}) ac ac) ac ac <u>-</u>	1,45 ^{a)} 1,58 ^{a)} 2,36 ^{a)} 2,69 ^{a)} 3,01 ^{a)}	ac ac ac 	1,45 ^{a)} 1,58 ^{a)} 2,36 ^{a)} 2,69 ^{a)} 3,01 ^{a)}	ac ac ac ac ac ac	1,45 ^{a)} 1,58 ^{a)} 2,36 ^{a)} 2,69 ^{a)} 3,01 ^{a)}	ac ac ac ac ac	1,45 ^{a)} 1,58 ^{a)} 2,36 ^{a)} 2,69 ^{a)} 3,01 ^{a)}	ac ac ac ac ac
	N _{R,}	1,25 1,50 1,75	1,77 1,77 1,77 1,77 1,77	—	2,18 2,18 2,18 2,18 2,18 2,18		2,58 2,58 2,58 2,58 2,58 2,58		3,57 3,57 3,57 3,57 3,57		3,73 4,44 4,44 4,44 4,44	 	3,73 4,44 4,44 4,44 4,44	 	3,73 4,44 4,44 4,44 4,44	a a — —

Self drilling screw	Annex 33
HWH RXB 4,8xL#2+ HX8 RX-14G with hexagon head and seal washer $\geq \emptyset$ 14 mm	of European technical approval ETA – 10/0021