



Approval body for construction products and types of construction

#### **Bautechnisches Prüfamt**

An institution established by the Federal and Laender Governments



#### European Technical Assessment

#### ETA-10/0021 of 23 April 2018

English translation prepared by DIBt - Original version in German language

#### **General Part**

| Deutsches Institut für Bautechnik   |
|---|
| Deutsches Institut für Dautechnik   |
| CORONA, HWH, MH, DC and LP  |
| Fastening screws for metal members and sheeting                                     |
| RED HORSE<br>dissing as<br>Niels Bohrs Vej 25<br>8660 Skanderborg<br>DÄNEMARK       |
| RED HORSE / dissing as<br>Niels Bohr Vej 25-27<br>8660 Skanderborg<br>Denmark       |
| GEXIN, No. 131,<br>Yusing Road, Gushan District,<br>Kaohsiung 804,<br>Taiwan R.O.C. |
| 40 pages including 35 annexes which form an integral part of this assessment        |
| EAD 330046-01-0602  |
|   |

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#### Specific part

#### 1 Technical description of the product

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

Table 1 – Fastening screws for metal members and sheeting

|                       |  | 1  |
|-----------------------|--|--|
| Annex                 | Fastening screw  | Description  |
| Annex 4               | CORONA 4,8L#1 TX20 EPDM-9,5B                             | with undercut, mushroom head with Torx T-20 drive and EPDM seal ring                     |
| Annex 5               | CORONA 4,8L#2+ TX20 EPDM-9,5B                            | with undercut, mushroom head with Torx T-20 drive and EPDM seal ring                     |
| Annex 6* <sup>)</sup> | CORONA 4,8L#1 TX20 EPDM-9,5B<br>for timber substructures | with undercut, mushroom head with Torx T-20 drive and EPDM seal ring                     |
| Annex 7               | HWH 4,8L#1 HX8 ALU-14B                                   | with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$                          |
| Annex 8               | HWH 4,8L#2+ HX8 ALU-14B                                  | with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$                          |
| Annex 9*)             | HWH 4,8L#1 HX8 ALU-14B<br>for timber substructures       | with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$                          |
| Annex 10              | 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 11              | 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 12*)            | LP 4,8L#1 TX20 M-ALU-14B<br>for timber substructures     | with countersunk head with Torx T-20 drive and seal washer $\emptyset \ge 14 \text{ mm}$ |
| Annex 13              | HWH RXB 4,8xL#1 HX8 RX-14G                               | with hexagon head and seal washer $\varnothing \ge 14 \text{ mm}$                        |
| Annex 14              | HWH 4,8xL#1 HX8  | with hexagon head  |
| Annex 15*)            | HWH RXB 4,8xL#1 HX8 RX-14G<br>for timber substructures   | with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$                          |
| Annex 16              | HWH RXB 5,5xL#1 HX8 RX-16G                               | with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$                          |
| Annex 17              | HWH RXB 5,5xL#2+ HX8 RX-16G                              | with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$                          |
| Annex 18              | HWH 5,5xL#2+ HX8 ALU-16B                                 | with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$                          |
| Annex 19              | HWH RXB 5,5xL#2P+ HX8 RX-16G                             | with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$                        |
| Annex 20              | HWH RXB 5,5xL#2P+ HX8 RX-16G                             | with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$                          |

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



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#### Table 1 - continued

| Annex                  | Fastening screw   | Description  |
|------------------------|---|--|
| Annex 21               | HWH 5,5xL#2P+ HX8 ALU-16B                                     | with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$                    |
| Annex 22               | HWH 5,5xL#2P+ HX8 ALU-16B                                     | with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$                    |
| Annex 23               | HWH RXB 5,5xL#5+ HX8 RX-16G                                   | with hexagon head and seal washer $\varnothing \ge 16 \text{ mm}$                    |
| Annex 24               | HWH 5,5xL#5+ HX8 ALU-16B                                      | with hexagon head and seal washer $\emptyset \ge 16 \text{ mm}$                      |
| Annex 25               | MH RXB 4,8xL#1 TX20   | with mushroom head with Torx drive system  |
| Annex 26               | DC 4,8xL#1 TX20   | with mushroom head with Torx drive system  |
| Annex 27               | CORONA RXB 4,8xL#1 TX20<br>EPDM-9,5B                          | with undercut, mushroom head with Torx drive system and EPDM seal ring               |
| Annex 28* <sup>)</sup> | CORONA RXB 4,8xL#1 TX20<br>EPDM-9,5B for timber substructures | with undercut, mushroom head with Torx drive system and EPDM seal ring               |
| Annex 29               | CORONA RXB 5,5xL#2+ TX20<br>EPDM-9,5B                         | with undercut, mushroom head with Torx drive system and EPDM seal ring               |
| Annex 30               | CORONA 5,5xL#2+ TX20<br>EPDM-9,5B                             | with undercut, mushroom head with Torx drive system and EPDM seal ring               |
| Annex 31               | CORONA RXB 5,5xL#2P+ TX20<br>EPDM-9,5B                        | with undercut, mushroom head with<br>Torx drive system and EPDM seal ring            |
| Annex 32               | CORONA RXB 5,5xL#2P+ TX20<br>EPDM-9,5B                        | with undercut, mushroom head with Torx drive system and EPDM seal ring               |
| Annex 33               | CORONA RXB 5,5xL#5 TX20<br>EPDM-9,5B                          | with undercut, mushroom head with<br>Torx drive system and EPDM seal ring            |
| Annex 34*)             | LP 4,8/5,5L#1 TX20 M-ALU-14B<br>for timber substructures      | with countersunk head with Torx drive system and seal washer $\varnothing \ge 14$ mm |
| Annex 35               | HWH RXB 4,8xL#2+ HX8 RX-14G                                   | with hexagon head and seal washer $\emptyset \ge 14 \text{ mm}$                      |

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

# Specification of the intended use in accordance with the applicable European Assessment Document 330046-01-0602

The fastening screws are intended to be used for fastening metal sheeting to metal or 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 any other thin gauge metal members. The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are intended to be used in external environments with  $\geq$  C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel. Furthermore the intended use comprises connections with predominantly static loads (e. g. wind loads, dead loads). The fastening screws are not intended for re-use.

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The performances given in Section 3 are only valid if the fastening screws are used in compliance with the specifications and conditions given in Annex (1-35).

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

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

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

| Essential characteristic   | Performance             |
|--|-------------------------|
| Shear Resistance of the Connection   | see Annexes to this ETA |
| Tension Resistance of the Connection   | see Annexes to this ETA |
| Design Resistance in case of combined Tension and Shear Forces (interaction)       | see Annexes to this ETA |
| Check of Deformation Capacity in case of<br>constraining forces due to temperature | No performance assessed |
| Durability   | No performance assessed |

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

| Essential characteristic | Performance          |
|--------------------------|----------------------|
| Reaction to fire         | Performance Class A1 |

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

In accordance with EAD No. 330046-01-0602, the applicable European legal act is: Commission Decision 1998/214/EC, amended by 2001/596/EC. The system to be applied is: 2+

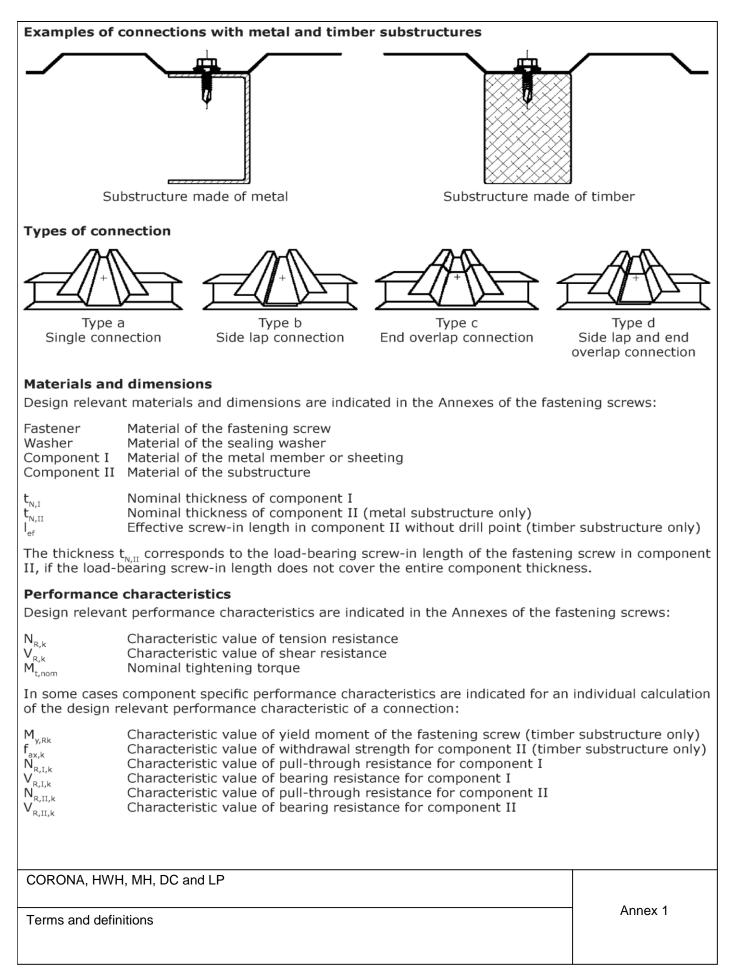
## 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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

Issued in Berlin on 23 April 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow Head of Department *beglaubigt:* Schult







#### **Design values**

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:

$$N_{_{R,d}} = ~N_{_{R,k}} ~/~ \gamma_{_M}$$

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

 $\mathsf{N}_{\mathsf{R},\mathsf{d}}$  $V_{\rm R,d}$ Υ<sub>M</sub>

Design value of tension resistance Design value of shear resistance Partial factor

The recommended partial 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.

#### Special conditions

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

The possibly required reduction of the 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 (if component I is made of steel) or EN 1999-1-4:2007 + A1:2011, section 8.1 (6) and Table 8.3 (if component I is made of aluminium).

For asymmetric metal substructures (e.g. Z- or C-shaped profiles) with  $t_{NTT} \leq 5$  mm, the characteristic value  $N_{P_{P_{k}}}$  has to be reduced by 70%.

In case of combined tension and shear forces the following linear interaction formula according to EN 1993-1-3:2006 + AC:2009, section 8.3 (8) is taken into account:

$$N_{s,d} / N_{R,d} + V_{s,d} / V_{R,d} \le 1.0$$

 $N_{s,d}$  $V_{s,d}$ 

$$V_{s,d} / N_{R,d} + V_{s,d} / V_{R,d} \le 1.0$$

Design value of the applied tension forces Design value of the applied shear forces

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 the effect of constraints has to be considered unless they do not occur or are not significant (e. g. sufficient flexibility of the structure).

#### 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 + A2:2014 applies. Drill points of self drilling screws are not taken into account for the effective screw-in length. The following formulas are used to calculate the values of characteristic resistance:

$$\begin{split} N_{\text{R},k} &= \min \{ N_{\text{R},\text{I},k} \text{ ; } N_{\text{R},\text{II},k} \} \\ V_{\text{R},k} &= \min \{ V_{\text{R},\text{I},k} \text{ ; } V_{\text{R},\text{II},k} \} \end{split}$$

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

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

F<sub>ax,Rk</sub> F<sub>v,Rk</sub>  $\mathsf{k}_{\mathsf{mod}}$ 

Characteristic withdrawal capacity with  $a = 90^{\circ}$ , EN 1995-1-1, section 8.7.2 (5) Characteristic load-bearing capacity per shear plane, EN 1995-1-1, section 8.2.3 Strength modification factor, EN 1995-1-1, section 3.1.3

 $N_{_{\mathrm{R,L}k}}$  and  $V_{_{\mathrm{R,L}k}}$  are stated in the relevant annexes.

CORONA, HWH, MH, DC and LP

Design



#### Installation conditions

The installation is carried out according to the manufaturer's instructions.

The load-bearing screw-in length of the fastening screw specified by the manufacturer must be taken into account.

The fastening screws must be installed with suitable equipment. Using an impact wrench is not allowed.

The fastening screws must be installed perpendicular to the plane of component I an II.

Component I and II must be in direct contact. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

CORONA, HWH, MH, DC and LP

Installation

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|                           | ~3,80  | -  | L           |  |      |  | Mate    | <u>rials</u>   |       |   |       |   |       |   |       |  |    |  |  |
|---------------------------|--|--|-------------|--|------|--|---------|--|-------|---|-------|---|-------|---|-------|--|----|--|--|
|                           | h  | ~  | ~1,60       | ~4,50  | 06'7 |  | Faste   |  |       | Carbor<br>Quencl  |       |   | red a | and gal   | vaniz | zed  |    |  |  |
|                           |  |  | <u>tttt</u> |  | 1    |  | Comp    | Vasher: None<br>Component I: S280GD, S320GD or S350GD<br>Component II: S235 – EN 10025-2<br>S280GD, S320GD or S350GD |       |   |       |   |       |   |       |  |    |  |  |
|                           |  | ~Ø13   | 3,80        | -  |      |  | Drillir | ng capa  | acity | : Σt <sub>i</sub> ≤   | 2 x 1 | L,25 m  | m     |   |       |  |    |  |  |
|                           |  |  |             | Torx T-20  |      |  |         | er subs<br>mber s  |       | <u>tures</u><br>tructure  | es no | perfo   | mran  | ce dete   | ermir | ned  |    |  |  |
| t                         | : <sub>n,II</sub> =  | 0,5  | 50          | 0,5  | 55   | 0,6  | 53      | 0,7  | 5     | 0,8   | 88    | 1,0   | 00    | 1,1   | .3    | 1,2  | 25 |  |  |
| М                         | M <sub>t,nom</sub> =   |  |             |  |      |  |         |  | 4     | Nm  |       |   |       |   |       |  |    |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,07<br>1,07<br>1,07<br>1,07<br>1,07<br>1,07<br>1,07<br>-<br>-<br>-<br>- |             | 1,07<br>1,30<br>1,30<br>1,30<br>1,30<br>1,30<br>1,30<br>-<br>-<br>-<br>- |      | 1,07<br>1,30<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>-<br>-<br>-<br>- |         | 1,07<br>1,30<br>1,65<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-                             |       | 1,07<br>1,30<br>1,65<br>2,22<br>2,62<br>2,62<br>2,62<br>2,62<br>-<br>-<br>-<br>-<br>- |       | 1,07<br>1,30<br>1,65<br>2,22<br>2,62<br>3,02<br>3,02<br>3,02<br>-<br>-<br>-<br>-<br>- |       | 1,07<br>1,30<br>1,65<br>2,22<br>2,62<br>3,02<br>3,56<br>3,56<br>-<br>-<br>-<br>-<br>- |       | 1,07<br>1,30<br>1,65<br>2,22<br>2,62<br>3,02<br>3,56<br>4,09<br>-<br>-<br>-<br>-<br>-    |    |  |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>-<br>-<br>-<br>- |             | 0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>-<br>-<br>-<br>- |      | 0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>-<br>-<br>-<br>-         |         | 1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05   |       | 1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>-<br>-<br>-<br>-              |       | 1,45<br>1,62<br>1,62<br>1,62<br>1,62<br>1,62<br>1,62<br>-<br>-<br>-<br>-              |       | 1,45<br>1,65<br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-<br>-      |       | 1,45<br>1,65<br>1,97<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>- |    |  |  |

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

CORONA, HWH, MH, DC and LP

CORONA 4.8XL #1 TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|                           | ~3,80  |  | L    |  |   | Mate  | <u>rials</u>  |   |                   |  |       |   |       |   |   |  |  |
|---------------------------|--|--|------|--|---|---|---|---|-------------------|--|-------|---|-------|---|---|--|--|
|                           |  | -@13.86  |      | 00 00  |   | Wash<br>Com   | Fastener:Carbon steel<br>Quenched, tempered and galvanizedWasher:NoneComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235 - EN 10025-2<br>S280GD or S320GD - EN 10346 |   |                   |  |       |   |       |   |   |  |  |
|                           | -  | 010,00   |      |  |   | Drilli  | ng ca   | pacity:   | Σt <sub>i</sub> ≤ | 5,50 m   | m     |   |       |   |   |  |  |
|                           |  |  | Torx | T-20   |   |   |   | <u>bstructı</u><br>r substri  |                   | es no pe   | erfom | rance de  | etern | nined   |   |  |  |
| t                         | :<br>N,II =  | 1,5  | 0    | 1,7  | 5 | 2,0   | 0   | 2,5   | 0                 | 3,0  | 0     | 3,5   | 0     | 4,0   | 0 |  |  |
| М                         | t,nom =  |  |      |  |   |   |   | 5 N   | m                 |  |       |   |       |   |   |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,98 <sup>a)</sup><br>2,07<br>2,22<br>2,45<br>2,69<br>2,92<br>3,23<br>3,53<br>-<br>-<br>-<br>-               |      | 1,98 <sup>a)</sup><br>2,12<br>2,33<br>2,67<br>2,96<br>3,25<br>3,54<br>3,84<br>-<br>-<br>-<br>-                             |   | 1,98 <sup>a)</sup><br>2,16 <sup>a)</sup><br>2,44 <sup>a)</sup><br>2,89 <sup>a)</sup><br>3,24<br>3,58<br>3,86<br>4,14<br>-<br>-<br>- |   | 1,98 <sup>a)</sup><br>2,16 <sup>a)</sup><br>2,44 <sup>a)</sup><br>2,89 <sup>a)</sup><br>3,90<br>4,24<br>4,50<br>4,75<br>-<br>-<br>-<br>-          |                   | 1,98 <sup>a)</sup><br>2,16 <sup>a)</sup><br>2,44 <sup>a)</sup><br>2,89 <sup>a)</sup><br>3,90<br>4,90<br>5,13<br>5,37<br>-<br>-<br>-<br>-                     |       | 1,98 <sup>a)</sup><br>2,16 <sup>a)</sup><br>2,44 <sup>a)</sup><br>2,89 <sup>a)</sup><br>3,90<br>4,90<br>5,75<br>5,98<br>-<br>-<br>-<br>-                                      |       | 1,98 <sup>a)</sup><br>2,16 <sup>a)</sup><br>2,44 <sup>a)</sup><br>2,89 <sup>a)</sup><br>3,90<br>4,90<br>5,75<br>6,59<br>-<br>-<br>-<br>-  |   |  |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97<br>2,06<br>2,06<br>2,06<br>2,06<br>2,06<br>-<br>-<br>-<br>- |      | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>2,62<br>2,62<br>2,62<br>2,62<br>2,62<br>-<br>-<br>-<br>- | - | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06<br>3,18<br>3,18<br>3,18<br>3,18<br>-<br>-<br>-<br>-          | -   | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,03<br>4,03<br>4,03<br>-<br>-<br>- | -                 | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>4,87<br>-<br>-<br>-<br>- | -     | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43 <sup>a)</sup><br>6,13<br>-<br>-<br>- |       | $     \begin{array}{r}       1,45^{a)} \\       1,65^{a)} \\       1,97^{a)} \\       3,06^{a)} \\       3,68^{a)} \\       4,29^{a)} \\       5,43^{a)} \\       6,56^{a)} \\       - \\ $ | - |  |  |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8,3%.

#### CORONA, HWH, MH, DC and LP

CORONA 4.8XL #2+ TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring



| <u>~3,8</u><br><u>~1,3</u>   | ~4,50  |  | 2.20<br>IIIII  | ~4,50  | F<br>V<br>C  | laterials<br>astener:<br>/asher:<br>compone<br>compone  | ent I:   | None<br>S280GD  | ed, tem<br>), S3200  | GD or S  |  | anized<br>– EN 10   | 346  |
|------------------------------|--|--|--|--|--|---|--|---|--|--|--|---|--|
|                              | ~Ø13,80  |  |  |  |  |   | apacity  | $\Sigma t_i \leq 2$   | x 1,25   | mm   |  |   |  |
|                              | -  |  | Torx T   | 20   | F  | <u>Timber substructures</u><br>For timber substructures perfomrance determined with<br>$M_{y,Rk} = 4,992 \text{ Nm}$<br>$f_{ax,k} = 13,181 \text{ N/mm}^2$ for $I_{ef} \ge 24 \text{ mm}$ |  |   |  |  |  |   |  |
| l <sub>g</sub> = 29 31 33 35 |  |  |  |  |  | 37  | 39   | 41  | 43   | 45   | 47   |   |  |
| М                            | t,nom =  |  |  |  |  |   | -  |   |  |  |  |   |  |
| $V_{R,k}$ for $t_{N,I} =$    | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>-<br>-<br>-<br>- | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>-<br>-<br>-<br>- | 1,09 <sup>a)</sup><br>1,20 <sup>a)</sup><br>1,47<br>1,47<br>1,47<br>1,47<br>1,47<br>1,47<br>-<br>-<br>-<br>- | 1,09 <sup>a)</sup><br>1,20 <sup>a)</sup><br>1,49<br>1,49<br>1,49<br>1,49<br>1,49<br>1,49<br>-<br>-<br>-<br>- | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>-<br>-<br>-<br>-  | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,55<br>1,55<br>1,55<br>1,55<br>1,55<br>1,55<br>-<br>-<br>-<br>- | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>-<br>-<br>- | 1,09 <sup>a)</sup><br>1,20 <sup>a)</sup><br>1,61<br>1,61<br>1,61<br>1,61<br>1,61<br>-<br>-<br>-<br>-         | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,64<br>1,64<br>1,64<br>1,64<br>1,64<br>-<br>-<br>-<br>-               | 1,09 <sup>a</sup> )<br>1,20 <sup>a</sup> )<br>1,64<br>1,66<br>1,66<br>1,66<br>1,66<br>1,66<br>-<br>-<br>-                  | 1,09 <sup>a)</sup><br>1,20 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>-<br>-<br>- | Bearing resistance of component I, $V_{\text{R,I,k}}$      |
| $N_{R,k}$ for $t_{N,I} =$    | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37   | 1,45<br>1,48<br>1,48<br>1,48<br>1,48<br>1,48<br>1,48<br>1,48<br>1,48   | 1,45 <sup>a)</sup><br>1,60<br>1,60<br>1,60<br>1,60<br>1,60<br>1,60<br>-<br>-<br>-<br>-                       | 1,45ª)<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>-<br>-<br>-<br>-                                   | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,71<br>1,71<br>1,71<br>1,71<br>1,71<br>1,71<br>1,71<br>-<br>-<br>-<br>-  | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,82<br>1,82<br>1,82<br>1,82<br>1,82<br>1,82<br>-<br>-<br>-<br>-   | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,05<br>2,05<br>2,05<br>2,05<br>2,05<br>-<br>-<br>-<br>-              | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,17<br>2,17<br>2,17<br>2,17<br>2,17<br>2,17<br>-<br>-<br>-<br>- | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>-<br>-<br>-<br>- | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>2,40<br>2,40<br>2,40<br>2,40<br>2,40<br>-<br>-<br>-<br>- | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43 <sup>a)</sup><br>6,56 <sup>a)</sup><br>-<br>-      | Pull-through resistance of component I, N <sub>R,I,k</sub> |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> 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 ( $\rho_k = 350 \text{ kg/m}^3$ ).

CORONA, HWH, MH, DC and LP

CORONA 4.8XL #1 TX20 EPDM-9,5B for timber substructures with undercut, mushroom head with TX drive system and EPDM seal ring

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| -                         | ~5,30  |  | L  |  | -     |  | Mate    | rials  |           |   |                              |   |                    |   |                 |  |    |
|---------------------------|--|--|----|--|-------|--|---------|--|-----------|---|------------------------------|---|--------------------|---|-----------------|--|----|
|                           |  | ~04,80   |    | .60 ~4.5   | ~2,90 | -  |         |  | I:<br>II: | Carbor<br>Quencl<br>Alumin<br>S280G<br>S235 -<br>S280G                                | hed,<br>ium<br>D, Si<br>- EN | tempe<br>(EN AV<br>320GD<br>10025   | V-11<br>or S<br>-2 | 00-H18<br>350GD   | 3), t<br>9 – Eľ | = 0,8 r<br>N 1034  | 6  |
|                           |  | ~Ø10,9   | -  |  |       |  | Drillir | ng capa  | acity     | : Σt <sub>i</sub> ≤   | 2 x 1                        | L,25 m  | m                  |   |                 |  |    |
|                           |  |  |    | )  |       |  |         | <u>Timber substructures</u><br>For timber substructures no perfomrance determi   |           |   |                              |   |                    |   |                 | ned  |    |
| t                         | N,II =   | 0,5  | 50 | 0,5  | 55    | 0,   | 63      | 0,7  | 5         | 0,8   | 8                            | 1,0   | 0                  | 1,1   | 3               | 1,2  | .5 |
| M                         | t,nom =  |  |    |  |       |  |         |  | 4         | Nm  |                              |   |                    |   |                 |  |    |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,95<br>0,95<br>0,95<br>0,95<br>0,95<br>0,95<br>0,95<br>-<br>-<br>-<br>- |    | 0,95<br>1,11<br>1,11<br>1,11<br>1,11<br>1,11<br>1,11<br>1,11<br>-<br>-<br>-<br>- |       | 0,95<br>1,11<br>1,36<br>1,36<br>1,36<br>1,36<br>1,36<br>-<br>-<br>-<br>- |         | 0,95<br>1,11<br>1,36<br>1,76<br>1,76<br>1,76<br>1,76<br>1,76<br>-<br>-<br>-<br>- |           | 0,95<br>1,11<br>1,36<br>1,76<br>2,36<br>2,36<br>2,36<br>2,36<br>-<br>-<br>-<br>-<br>- |                              | 0,95<br>1,11<br>1,36<br>1,76<br>2,36<br>2,96<br>2,96<br>2,96<br>-<br>-<br>-<br>-<br>- |                    | 0,95<br>1,11<br>1,36<br>1,76<br>2,36<br>2,96<br>3,32<br>3,32<br>-<br>-<br>-<br>-<br>- |                 | 0,95<br>1,11<br>1,36<br>1,76<br>2,36<br>2,96<br>3,32<br>3,67<br>-<br>-<br>-<br>-         |    |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>-<br>-<br>-<br>- |    | 0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>-<br>-<br>-<br>-         |       | 0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>-<br>-<br>-      |         | 1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05                     |           | 1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>-<br>-<br>-<br>-              |                              | 1,37<br>1,45<br>1,58<br>1,62<br>1,62<br>1,62<br>1,62<br>-<br>-<br>-<br>-              |                    | 1,37<br>1,45<br>1,58<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-<br>-              |                 | 1,37<br>1,45<br>1,58<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>- |    |

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

CORONA, HWH, MH, DC and LP

HWH 4.8XL #1 HX8 ALU-14B with hexagon head and seal washer  $\geq \emptyset$ 14 mm

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|                           |  | L<br>99:00<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200  |  | ~7,00  | ~3,90   | Faste<br>Wasł<br>Com<br>Com  | MaterialsFastener:Carbon steel<br>Quenched, tempered and galvanizedWasher:Aluminium (EN AW-1100-H18), t = 0,8 mm<br>Carbon steel, galvanized, t = 0,8 mmComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235 - EN 10025-2<br>S280GD or S320GD - EN 10346 |   |   |   |  |   |   |   |  |  |
|---------------------------|--|--|--|--|---|--|--|---|---|---|--|---|---|---|--|--|
|                           |  |  |  |  |   | Drilli   | ng ca  | pacity:   | ∑t <sub>i</sub> ≤                                 | 5,50 m  | m  |   |   |   |  |  |
|                           |  |  |  | 08.7.80  |   |  |  | <u>bstruct</u> r<br>r substr  |   | es no pe  | erfom  | irance d  | eterm   | nined   |  |  |
| t                         | , <sub>N,II</sub> =  | 1,5  | 50   | 1,7  | '5  | 2,0  | 0  | 2,5   | 0   | 3,0   | 00   | 3,5   | 0   | 4,0   | 0  |  |
| M                         | t,nom =  |  |  |  |   |  |  | 5 N   | m   |   |  |   |   |   |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,89 <sup>a)</sup><br>2,00<br>2,18<br>2,46<br>2,75<br>3,03<br>3,40<br>3,77<br>-<br>-<br>-<br>-                             | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,05<br>2,29<br>2,69<br>2,94<br>3,19<br>3,56<br>3,93<br>-<br>-<br>-<br>-   | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,13<br>3,34<br>3,71<br>4,09<br>-<br>-<br>-<br>-               | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,65<br>4,03<br>4,40<br>-<br>-<br>-<br>-                | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,34<br>4,72<br>-<br>-<br>-<br>-                              | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,66<br>5,03<br>-<br>-<br>-<br>-                              | ac<br>ac<br>ac<br>ac<br>a<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,66<br>5,35<br>-<br>-<br>-<br>-                              | ac<br>ac<br>a<br>a<br>a<br>a<br>a<br>-<br>-      |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,06<br>2,06<br>2,06<br>2,06<br>2,06<br>-<br>-<br>-<br>- | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,62<br>2,62<br>2,62<br>2,62<br>-<br>-<br>-<br>- | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01<br>3,18<br>3,18<br>-<br>-<br>-<br>- | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73 <sup>a)</sup><br>4,03<br>-<br>-<br>- | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-           | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73 <sup>a)</sup><br>4,44 <sup>a)</sup><br>-<br>-<br>- | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73 <sup>a)</sup><br>4,44 <sup>a)</sup><br>-<br>-<br>- | ac<br>ac<br>ac<br>ac<br>a<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73 <sup>a)</sup><br>4,44 <sup>a)</sup><br>-<br>-<br>- | ас<br>ас<br>а<br>а<br>а<br>а<br>а<br>а<br>-<br>- |  |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

HWH 4.8XL #2+ HX8 ALU-14B with hexagon head and seal washer  $\ge Ø14 \text{ mm}$ 

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| ~5,                       | ~4.00  | L  |  |  |  | Materials   |   |   |  |  |   |   |  |  |  |  |
|---------------------------|--|--|--|--|--|---|---|---|--|--|---|---|--|--|--|--|
|                           |  | 93 <sup>°</sup> 80<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70<br>70               | ° -1   | ~4,50 8;<br>?  |  | Fastener:Carbon steel<br>Quenched, tempered and galvanizedWasher:Aluminium (EN AW-1100-H18), t = 0,8<br>Carbon steel, galvanized, t = 0,8 mmComponent I:S280GD, S320GD or S350GD - EN 102<br>Structural timber - EN 14081 |   |   |  |  |   |   |  |  |  |  |
|                           |  | ~8,00  | -+   |  |  | Drilling c  | apacity   | : Σt <sub>i</sub> ≤ 2   | 2 x 1,25   | mm   |   |   |  |  |  |  |
|                           |  |  |  |  |  | $\frac{\text{Fimber s}}{\text{For timber}} = 2$ $\frac{M_{y,Rk}}{m_{x,k}} = 13$   | er subst<br>1,992 Ni  | ructure   | -  |  | determi   | ned with  | 1  |  |  |  |
|                           | $I_g =$  | 29   | 31   | 33   | 35   | 37  | 39  | 41  | 43   | 45   | 47  |   |  |  |  |  |
| M                         | t,nom =  |  |  |  |  |   | -   |   |  |  |   |   |  |  |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,32<br>1,32<br>1,32<br>1,32<br>1,32<br>1,32<br>-<br>-<br>-<br>- | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>-<br>-<br>-<br>- | 1,07 <sup>a)</sup><br>1,12 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>-<br>-<br>-<br>- | 1,07°<br>1,12°<br>1,34°<br>1,45<br>1,45<br>1,45<br>1,45<br>1,45<br>-<br>-<br>-<br>-                                      | 1,12ª)  | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34 <sup>a</sup> )<br>1,54<br>1,54<br>1,54<br>1,54<br>1,54<br>-<br>-<br>-<br>- | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34 <sup>a</sup> )<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>-<br>-<br>-<br>-         | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34 <sup>a</sup> )<br>1,60<br>1,60<br>1,60<br>1,60<br>-<br>-<br>-<br>-      | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34 <sup>a</sup> )<br>1,60<br>1,60<br>1,60<br>1,60<br>-<br>-<br>-<br>-  | 1,07 <sup>a</sup> )<br>1,12 <sup>a</sup> )<br>1,34 <sup>a</sup> )<br>1,60<br>1,60<br>1,60<br>1,60<br>-<br>-<br>-<br>- | 1,07 <sup>a)</sup><br>1,12 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>-<br>-<br>- | Bearing resistance of component I, $V_{{\rm R},{\rm I},{\rm k}}$ |  |  |  |
| $N_{R,k}$ for $t_{N,I} =$ | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$                                |  | 1,37 <sup>a</sup><br>1,45 <sup>a</sup><br>1,58<br>1,71<br>1,71<br>1,71<br>1,71<br>1,71<br>-<br>-<br>-          |  | 1,37 <sup>a</sup> )<br>1,45 <sup>a</sup> )<br>1,58 <sup>a</sup> )<br>1,94<br>1,94<br>1,94<br>1,94<br>1,94<br>-<br>-<br>- | 1,37°)<br>1,45°)<br>1,58°)<br>2,05<br>2,05<br>2,05<br>2,05<br>2,05<br>-<br>-<br>-<br>-  | 1,37 <sup>a</sup> )<br>1,45 <sup>a</sup> )<br>1,58 <sup>a</sup> )<br>2,17<br>2,17<br>2,17<br>2,17<br>2,17<br>-<br>-<br>-<br>- | 1,37 <sup>a</sup> )<br>1,45 <sup>a</sup> )<br>1,58 <sup>a</sup> )<br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>-<br>-<br>-<br>- | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36<br>2,40<br>2,40<br>2,40<br>2,40<br>-<br>-<br>-<br>- | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73 <sup>a)</sup><br>4,44 <sup>a)</sup><br>-<br>- | Pull-through resistance of component I, N <sub>R,I,k</sub>  |   |  |  |  |  |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> 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 ( $\rho_k = 350 \text{ kg/m}^3$ ).

CORONA, HWH, MH, DC and LP

HWH 4.8XL #1 HX8 ALU-14B for timber structrures with hexagon head and seal washer  $\ge \emptyset$ 14 mm

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|                           |  |   | Mate  | Materials  |    |  |  |  |  |   |       |   |       |   |       |   |   |  |  |
|---------------------------|--|---|---|--|----|--|--|--|--|---|-------|---|-------|---|-------|---|---|--|--|
|                           |  | 0 <u>5</u><br>0 <u>5</u><br>0 <u>5</u><br>0 <u>5</u><br>0 <u>5</u><br>0 <u>5</u><br>0 <u>6</u><br>-1,60 | ~8,0  | 0<br>,50<br>,50<br>,50   |    |  | Faste  | ner:   |  | Carbor  |       |   | rod a | nd as   | vania | od  |   |  |  |
|                           |  | <b>₩₩₩</b>  | 00 1  |  |    |  | Comp   | Quenched, tempered and galvaVasher:Aluminium (EN AW-5052-H32),Component I:S280GD, S320GD or S350GD -Component II:S235 - EN 10025-2S280GD, S320GD or S350GD - |  |   |       |   |       |   |       | z = 0,8 mm<br>EN 10346  |   |  |  |
|                           |  |   |   |  |    |  | Drillin  | ng capa  | acity  | : Σt <sub>i</sub> ≤   | 2 X : | L,25 m  | m     |   |       |   |   |  |  |
|                           |  |   | T   | orx T-20   |    |  | <u>Timber substructures</u><br>For timber substructures no perfomrance determine |  |  |   |       |   |       |   |       | ned   |   |  |  |
| t                         | N,II =   | 0,  | 63  | 0,7  | '5 | 0,8  | 88   | 1,0  | 0  | 1,1   | 3     | 1,2   | 5     |   |       |   |   |  |  |
| М                         | M <sub>t,nom</sub> =   |   |   |  |    |  |  |  | 4  | Nm  |       |   |       |   |       |   |   |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,82<br>0,82<br>0,82<br>0,82<br>0,82<br>0,82<br>0,82<br>0,82  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 0,82<br>1,07<br>1,07<br>1,07<br>1,07<br>1,07<br>1,07<br>-<br>-<br>-<br>- |    | 0,82<br>1,07<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>-<br>-<br>-<br>- | -<br>-<br>-<br>-   | 0,82<br>1,07<br>1,44<br>2,05<br>2,05<br>2,05<br>2,05<br>2,05<br>-<br>-<br>-<br>-<br>-  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 0,82<br>1,07<br>1,44<br>2,05<br>2,70<br>2,70<br>2,70<br>2,70<br>-<br>-<br>-<br>-<br>- |       | 0,82<br>1,07<br>1,44<br>2,05<br>2,70<br>3,34<br>3,34<br>3,34<br>-<br>-<br>-<br>-<br>- |       | 0,82<br>1,07<br>1,44<br>2,05<br>2,70<br>3,34<br>3,88<br>3,88<br>-<br>-<br>-<br>-<br>- |       | 0,82<br>1,07<br>1,44<br>2,05<br>2,70<br>3,34<br>3,88<br>4,42<br>-<br>-<br>-<br>-              | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |  |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>0,57<br>-<br>-<br>-<br>-                                |   | 0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>0,62<br>-<br>-<br>-<br>- |    | 0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>0,71<br>-<br>-<br>-<br>- | -  | 1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05<br>1,05   |  | 1,32<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>1,34<br>-<br>-<br>-<br>-      |       | 1,32<br>1,35<br>1,40<br>1,62<br>1,62<br>1,62<br>1,62<br>-<br>-<br>-<br>-              |       | 1,32<br>1,35<br>1,40<br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-<br>-      |       | 1,32<br>1,35<br>1,40<br>1,92<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-<br>- |   |  |  |

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

CORONA, HWH, MH, DC and LP

LP 4.8XL #1 TX20 M-ALU-14B with countersunk head with TX drive system and seal washer ≥ Ø14 mm

Annex 10

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|                           | •  |  | Mate | rials  |     |  |       |  |                        |   |  |   |   |   |   |
|---------------------------|--|--|------|--|-----|--|-------|--|------------------------|---|--|---|---|---|---|
|                           | ~04,80   | 2.<br>02<br>~1,60  | ~7,0 | 0  |     | Faste  | ener: |  |                        | n steel   | ~ ~ ~ ~ ~  | danda   |   | ind   |   |
|                           |  |  |      |  |     |  | ponei | A<br>ntI: S<br>ntII: S   | lumir<br>280G<br>235 - | nium (El<br>iD, S320<br>- EN 10   | N AW<br>OGD 0<br>025-2                               | or S3500<br>2   | 132),<br>GD -                                 | t = 0.8<br>EN 1034<br>EN 1034   | 46  |
|                           |  | ~Ø9,00   | •    |  |     | Drilli   | ng ca | pacity:  | Σt <sub>i</sub> ≤      | 5,50 m  | m  |   |   |   |   |
|                           |  |  |      | )<br>Torx T-20   |     |  |       | <u>bstructi</u><br>r substr  |                        | es no pe  | erfom  | rance d   | etern   | nined   |   |
| t                         | : <sub>n,II</sub> =  | 1,5  | 50   | 1,7  | 5   | 2,0  | 0     | 2,5  | 0                      | 3,0   | 0  | 3,5   | 50  | 4,0   | 0   |
| М                         | t,nom =  |  |      |  | 5 N | m  |       |  |                        |   |  |   |   |   |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,39<br>1,54<br>1,76<br>2,14<br>2,51<br>2,88<br>3,58<br>4,27<br>-<br>-<br>-<br>-   |      | 1,39<br>1,59<br>1,89<br>2,40<br>2,79<br>3,19<br>3,79<br>4,39<br>-<br>-<br>-<br>-   |     | 1,39<br>1,64<br>2,03<br>2,66<br>3,08<br>3,50<br>4,01<br>4,52<br>-<br>-<br>-<br>-               |       | 1,39<br>1,64<br>2,03<br>2,66<br>3,71<br>4,13<br>4,45<br>4,77<br>-<br>-<br>-<br>-                 |                        | 1,39<br>1,64<br>2,03<br>2,66<br>3,71<br>4,75<br>4,88<br>5,01<br>-<br>-<br>-<br>-  | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>- | 1,39<br>1,64<br>2,03<br>2,66<br>3,71<br>4,75<br>5,13<br>5,26<br>-<br>-<br>-<br>-  | ac<br>ac<br>ac<br>ac<br>a<br>-<br>-<br>-<br>- | 1,39<br>1,64<br>2,03<br>2,66<br>3,71<br>4,75<br>5,13<br>5,51<br>-<br>-<br>-<br>-<br>-   | ac<br>ac<br>a<br>a<br>a<br>a<br>a<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92<br>2,06<br>2,06<br>2,06<br>2,06<br>-<br>-<br>-<br>- |      | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29 <sup>a)</sup><br>2,62<br>2,62<br>2,62<br>-<br>-<br>-<br>- | -   | 1,32°)<br>1,35°)<br>1,40°)<br>1,92°)<br>2,29°)<br>2,66°)<br>2,96°)<br>3,18<br>-<br>-<br>-<br>- | -     | 1,32°)<br>1,35°)<br>1,40°)<br>1,92°)<br>2,29°)<br>2,66°)<br>2,96°)<br>3,25°)<br>-<br>-<br>-<br>- | -                      | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29 <sup>a)</sup><br>2,66 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,25 <sup>a)</sup><br>-<br>-<br>- | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-       | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29 <sup>a)</sup><br>2,66 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,25 <sup>a)</sup><br>-<br>-<br>- | ac<br>ac<br>ac<br>ac<br>a<br>-<br>-<br>-      | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29 <sup>a)</sup><br>2,66 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,25 <sup>a)</sup><br>-<br>-<br>- | ас<br>ас<br>а<br>а<br>а<br>а<br>а<br>-<br>- |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

LP 4.8XL #2+ TX20 M-ALU-14B with countersunk head with TX drive system and seal washer ≥ Ø14 mm

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|                           | -03.50<br>-03.50   | L<br>~2.2<br>→ ~Ø9,00  |  | 4,5  | F<br>W<br>C<br>C  | laterials<br>astener:<br>/asher:<br>ompone<br>ompone<br>prilling c   | ent I:<br>ent II:  | Alumini<br>S280GD<br>Structur  | ed, tem<br>um (EN<br>), S3200<br>ral timb  | AW-50!<br>GD or S<br>er - EN  | 52-H32)<br>350GD   | anized<br>), t = 0,;<br>– EN 10   |  |
|---------------------------|--|--|--|--|---|--|--|--|--|---|--|---|--|
|                           | -  |  | Torx T-  | 20   | F   | I <sub>v. Rk</sub> = 4   | er subst<br>1,992 Nr   | ructure:<br>n  | s perfon<br>r I <sub>ef</sub> ≥ 2  |   | determi  | ned with  | 1  |
|                           | l <sub>g</sub> =   | 29   | 31   | 33   | 35  | 37   | 39   | 41   | 43   | 45  | 47   |   |  |
| M                         | t,nom =  |  |  |  |   |  | -  |  |  |   |  |   |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>1,41<br>1,41                     | 1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44<br>1,44   | 1,47<br>1,47<br>1,47<br>1,47<br>1,47<br>1,47<br>1,47<br>1,47   | 1,49<br>1,49<br>1,49<br>1,49<br>1,49<br>1,49<br>1,49<br>1,49  | 1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52<br>1,52   | 1,53<br>1,55<br>1,55<br>1,55<br>1,55<br>1,55<br>1,55<br>1,55   | 1,53<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>1,58<br>-<br>-<br>-<br>-   | 1,53<br>1,59<br>1,61<br>1,61<br>1,61<br>1,61<br>1,61<br>-<br>-<br>-<br>-   | 1,53<br>1,59<br>1,64<br>1,64<br>1,64<br>1,64<br>1,64<br>-<br>-<br>-<br>-  | 1,53 <sup>a)</sup><br>1,59<br>1,66<br>1,66<br>1,66<br>1,66<br>1,66<br>-<br>-<br>-<br>-   | 1,53 <sup>a)</sup><br>1,59 <sup>a)</sup><br>1,82 <sup>a)</sup><br>2,10 <sup>a)</sup><br>2,10 <sup>a)</sup><br>2,10 <sup>a)</sup><br>2,10 <sup>a)</sup><br>-<br>-<br>-<br>-                  | Bearing resistance of component I, V <sub>R,I,k</sub>      |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,32<br>1,35<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>1,37<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40<br>1,48<br>1,48<br>1,48<br>1,48<br>1,48<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,60<br>1,60<br>1,60<br>1,60<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,71<br>1,71<br>1,71<br>1,71<br>1,71<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,82<br>1,82<br>1,82<br>1,82<br>1,82<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92<br>1,94<br>1,94<br>1,94<br>1,94<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,05<br>2,05<br>2,05<br>2,05<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,17<br>2,17<br>2,17<br>2,17<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,28<br>2,28<br>2,28<br>2,28<br>2,28<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29<br>2,40<br>2,40<br>2,40<br>-<br>-<br>-<br>- | 1,32 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,40 <sup>a)</sup><br>1,92 <sup>a)</sup><br>2,29 <sup>a)</sup><br>2,66 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,25 <sup>a)</sup><br>-<br>-<br>- | Pull-through resistance of component I, N <sub>R,I,k</sub> |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> 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 ( $\rho_k = 350 \text{ kg/m}^3$ ).

CORONA, HWH, MH, DC and LP

LP 4.8XL #1 TX20 M-ALU-14B for timber stuctures with countersunk head with TX drive system and seal washer  $\geq \emptyset$ 14 mm

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|                           |  | ~L<br>~4,00   |                  |   |             |   | Mate             | rials   |           |  |  |   |                                    |  |                              |   |   |
|---------------------------|--|---|------------------|---|-------------|---|------------------|---|-----------|--|--|---|------------------------------------|--|------------------------------|---|---|
|                           |  | -03,50  |                  | ~4,50   | ~~02,90     |   |                  |   | I:<br>II: | Stainle<br>Stainle<br>Stainle<br>Stainle<br>S280G<br>S235 –<br>S280G   | ss st<br>ss st<br>ss st<br>D, Si<br>EN | eel (1.4<br>eel (1.4<br>eel (1.4<br>320GD<br>10025-   | 4401<br>4301<br>4401<br>or S<br>·2 | .) - EN<br>.) - EN<br>.) - EN<br>350GD   | 1008<br>1008<br>1008<br>– El | 38<br>38<br>38<br>N 1034  |   |
|                           | ł  | ~Ø14,0  |                  | -   |             |   | Drillir          | ng capa   | acity     | : Σt <sub>i</sub> ≤  | 2 x 1                                  | L,25 mr   | m                                  |  |                              |   |   |
|                           |  | RXE   |                  | )   |             |   |                  | <u>er subs</u><br>mber s  |           | <u>tures</u><br>ructure  | es no                                  | ) perfor  | nran                               | ce dete  | ermir                        | ned   |   |
| t                         | ,,II =   | 0,50  | 0                | 0,5   | 5           | 0,  | 63               | 0,7   | 5         | 0,8  | 8                                      | 1,0   | 0                                  | 1,1  | 3                            | 1,2   | 5   |
| M                         | t,nom =  |   |                  |   |             | -   |                  |   |           |  |  |   |                                    |  |                              |   |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>0,95 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>- | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>1,36 <sup>a)</sup><br>1,36 <sup>a)</sup><br>1,36 <sup>a)</sup><br>1,36 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>1,76 <sup>a)</sup><br>1,76 <sup>a)</sup><br>1,76 <sup>a)</sup><br>1,76 <sup>a)</sup><br>-<br>-<br>-                       |           | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-                            | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,96 <sup>a)</sup><br>2,96 <sup>a)</sup><br>-<br>-<br>-<br>-  | -<br>-<br>-                        | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,32 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-<br>-             | 0,95 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,36 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,96 <sup>a)</sup><br>3,32 <sup>a)</sup><br>3,67 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-      |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>-<br>-<br>- | -                | 0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>-<br>-      | -           | 0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>-<br>-<br>- | -         | 1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>-<br>-<br>-      | -<br>-<br>-                            | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>-<br>-<br>- |                                    | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-                                |                              | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |

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

CORONA, HWH, MH, DC and LP

HWH RXB 4.8XL #1 HX8 RX-14G with hexagon head and seal washer  $\geq \emptyset$ 14 mm

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English translation prepared by DIBt



|                           |  | ~   |                            |   |                                 |   | Mate             | rials   |                            |   |                     |   |                            |   |             |   |                                      |
|---------------------------|--|---|----------------------------|---|---------------------------------|---|------------------|---|----------------------------|---|---------------------|---|----------------------------|---|-------------|---|--------------------------------------|
|                           |  |   | 04<br>04<br>04<br>04<br>04 | ~4,50   | ~ 02,90                         |   |                  | er:<br>ponent   | I:<br>II:                  | Carbon<br>Case ha<br>None<br>S280GI<br>S235 –<br>S280GI   | arde<br>D, S:<br>EN | ned and<br>320GD<br>10025-  | or S<br>2                  | 350GD   | – Eľ        |   |                                      |
|                           |  | ~Ø10,00   | •                          | 1   |                                 | ſ   | Drillir          | ng capa   | acity                      | : Σt <sub>i</sub> ≤ 2   | 2 x 1               | .,25 mr   | n                          |   |             |   |                                      |
|                           |  |   |                            | )   |                                 |   |                  | <u>er subs</u><br>mber s  |                            | <u>tures</u><br>ructure   | es no               | perfon  | nran                       | ce dete   | ermir       | ned   |                                      |
| t                         | N,II =   | 0,50  | 0                          | 0,5   | 5                               | 0,0   | 53               | 0,7   | 5                          | 0,8   | 8                   | 1,0   | 0                          | 1,1   | 3           | 1,2   | 5                                    |
| M                         | t,nom =  |   |                            |   |                                 |   |                  |   |                            | -   |                     |   |                            |   |             |   |                                      |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>-<br>-<br>-<br>-  | -<br>-<br>-                | $\begin{array}{c} 1,52^{a)} \\ 1,64^{a)} \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \end{array}$ |                                 | $\begin{array}{c} 1,52^{a)} \\ 1,64^{a)} \\ 1,82^{a)} \\ - \\ - \\ - \\ - \end{array}$  | -<br>-<br>-<br>- | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>-<br>-<br>-<br>-                  | -                          | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>-<br>-<br>-<br>-                  | -<br>-<br>-         | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-                       | -<br>-<br>-                | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>- | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>-<br>-<br>- | -                          | 0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>-<br>-<br>-       | -<br>-<br>-<br>-<br>-<br>-<br>- | 0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>-<br>-<br>- |                  | 1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>- | 1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-    | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>- | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81<br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-   |             | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-   | -<br>-<br>-<br>-<br>-<br>-<br>-      |

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

CORONA, HWH, MH, DC and LP

HWH 4.8XL #1 HX8 with hexagon head

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|   | Drilling c<br><u>Timber s</u><br>For timber<br>$M_{y Rk} = 4$                        | ent I: Sent II: Sent | Stainles<br>Stainles<br>Stainles<br>S280GD<br>Structur<br>$\Sigma t_i \leq 2$<br><u>ures</u><br>ructures | The second sec |
|---|--|---|--|--|
| V <sub>R,k</sub> TOF t <sub>N,I</sub> = | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,07 <sup>a)</sup><br>1,12 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>1,60 <sup>a)</sup><br>-<br>-<br>-   | Bearing resistance of component I, V <sub>R,I,k</sub>  |  |
| $N_{R,k}$ for $r_{N,I} =$               | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73<br>4,44<br>-<br>-<br>-   | Pull-through resistance of component I, $N_{R_{\mathrm{I},\mathrm{K}}}$                                  |  |

CORONA, HWH, MH, DC and LP

HWH RXB 4.8XL #1 HX8 RX-14G for timber substructures with hexagon head and seal washer  $\ge \emptyset$ 14 mm

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|                           |  | ~L  |   |  |                            |   | Mate             | rials  |                            |   |  |  |                                      |  |                                 |  |   |
|---------------------------|--|---|---|--|----------------------------|---|------------------|--|----------------------------|---|--|--|--------------------------------------|--|---------------------------------|--|---|
|                           |  |   |   | -4,50  | ~02;90                     |   |                  |  | I:<br>II:                  | Stainle<br>Stainle<br>Stainle<br>S280G<br>S235 -  | ss st<br>ss st<br>ss st<br>D, Si<br>EN | teel (1.4<br>teel (1.4<br>teel (1.4<br>teel (1.4<br>320GD<br>10025-<br>320GD   | 4401<br>4301<br>4401<br>or S<br>2    | .) - EN<br>.) - EN<br>.) - EN<br>350GD   | 1008<br>1008<br>1008<br>– El    | 38<br>38<br>38<br>N 1034   |   |
|                           | -  | ~Ø16,0  |   | -•   |                            |   | Drillir          | ng capa  | acity                      | : Σt <sub>i</sub> ≤   | 2 x 1                                  | L,25 mr  | n                                    |  |                                 |  |   |
|                           |  |   |   | er subs<br>mber s  |                            |   | es no            | ) perfon   | nran                       | ce dete   | ermir                                  | ned  |                                      |  |                                 |  |   |
| t                         | N,II =   | 0,5   | 0 | 0,5  | 5                          | 0,0   | 53               | 0,7  | '5                         | 0,8   | 8                                      | 1,0  | 0                                    | 1,1  | 3                               | 1,2  | 5   |
| M                         | t,nom =  |   |   | _  |                            |   |                  | _  |                            | -   |  |  |                                      |  |                                 |  |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>0,96 <sup>a)</sup><br>-<br>-<br>- | - | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,11 <sup>a)</sup><br>-<br>-<br>-<br>- |                            | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,35 <sup>a)</sup><br>-<br>-<br>- |                  | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,73 <sup>a)</sup><br>1,73 <sup>a)</sup><br>1,73 <sup>a)</sup><br>1,73 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-                | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,07 <sup>a)</sup><br>-<br>-<br>-<br>-                  | -<br>-<br>-                            | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,41 <sup>a)</sup><br>2,41 <sup>a)</sup><br>-<br>-<br>-<br>- |                                      | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,73 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,41 <sup>a)</sup><br>2,41 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-<br>-                | 0,96 <sup>a)</sup><br>1,11 <sup>a)</sup><br>1,35 <sup>a)</sup><br>1,73 <sup>a)</sup><br>2,07 <sup>a)</sup><br>2,41 <sup>a)</sup><br>2,41 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>-<br>-<br>- |   | 0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>0,64 <sup>a)</sup><br>-<br>-<br>-      | -<br>-<br>-<br>-<br>-<br>- | 0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>0,76 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>0,94 <sup>a)</sup><br>-<br>-<br>-      | -<br>-<br>-<br>-<br>-<br>- | 1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>1,29 <sup>a)</sup><br>-<br>-<br>- | -                                      | $1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>$1,63^{a)}$<br>-<br>-<br>-<br>-             | -<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,77 <sup>a)</sup><br>1,91<br>1,91<br>1,91<br>1,91<br>1,91<br>1,91<br>-<br>-<br>-  | -<br>-<br>-<br>-<br>-<br>-<br>- | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,18<br>2,18<br>2,18<br>2,18<br>2,18<br>2,18<br>-<br>-<br>-<br>-   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-      |

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

CORONA, HWH, MH, DC and LP

HWH RXB 5.5XL #1 HX8 RX-16G with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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|                           |  | ~L   |  |  |  | Mate   | erials                                       |  |   |  |  |  |   |  |   |
|---------------------------|--|--|--|--|--|--|--|--|---|--|--|--|---|--|---|
|                           |  | -04,10   | ~1,80  | ~8,00  |  | Wasl<br>Com  | poner  | s<br>s<br>nt I:<br>nt II:  | Stainle<br>Stainle<br>Stainle<br>S280C<br>S235    | ess stee<br>ess stee<br>ess stee<br>SD, S320<br>– EN 10<br>SD or S3  | (1.4<br>  (1.4<br>  (1.4<br>)GD (<br>025-2           | 401) - E<br>301) - E<br>401) - E<br>or S3500<br>2  | EN 10<br>EN 10<br>EN 10<br>GD -                       | 088<br>088<br>088<br>EN 1034   | 46  |
|                           | +  | ~Ø16,0   |  | 1  |  | Drilli   | ng ca  |  |   | 6,0 mm   |  |  | .0340   |  |   |
|                           | (  |  |  |  |  | Timt   | ber su                                       | bstruct  | ures  | es no pe   |  | rance d  | eterm   | nined  |   |
| t                         | N,II =   | 1,5  | 50   | 1,7  | '5   | 2,0  | 00   | 2,5  | 50  | 3,0  | 0  | 3,5  | 0   | 4,0  | 0   |
| M                         | <sub>t,nom</sub> =   |  |  |  |  |  |  | -  |   |  |  |  |   |  |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,16<br>3,44<br>3,79<br>4,14<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,21<br>3,54<br>3,54<br>3,87<br>4,19<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,27<br>3,65<br>3,95<br>4,25<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,37<br>3,85<br>4,10<br>4,35<br>4,84<br>4,84<br>4,84                             | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84                       | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-      | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14   | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-      | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63                             | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>3,92<br>3,92<br>3,92 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-           | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-  | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-   | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-   |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8,3%.

CORONA, HWH, MH, DC and LP

HWH RXB 5.5XL #2+ HX8 RX-16G with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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|   |                      | ~L                      |           |                    |                    | Mate               | rials                        |                    |                   |                     |                |                                       |       |                    |    |
|---|----------------------|-------------------------|-----------|--------------------|--------------------|--------------------|------------------------------|--------------------|-------------------|---------------------|----------------|---------------------------------------|-------|--------------------|----|
|   | ~4,00                | ~04,10                  |           | ~8,00              | -04 <sup>,50</sup> | Faste              | ener:                        |                    |                   | n steel<br>nardene  | d and          | l galvani                             | ized  |                    |    |
| F   |                      | M. M. M. M. M. M. M. M. | <u> የ</u> |                    | 7                  | Wasł               | ner:                         | A                  | lumir             | nium (El            | N AW           | -1100-+                               | 18),  |                    | mm |
| {   |                      |                         |           | 1,80               | <u> </u>           |                    | ponei<br>ponei               | ntI: S<br>ntII: S  | 2800<br>235 ·     | GD, S320<br>- EN 10 | 0GD (<br>025-2 | nized, t<br>or S3500<br>2<br>D – EN 1 | GD -  | EN 1034            | 46 |
|   |                      | ~Ø16,0                  | -         |                    |                    | Drilli             | ng ca                        | pacity:            | Σt <sub>i</sub> ≤ | 6,0 mm              | ٦              |                                       |       |                    |    |
|   |                      |                         |           |                    |                    |                    | i <u>bstruct</u><br>r substr |                    | es no pe          | erforr              | nrance d       | etern                                 | nined |                    |    |
| t   | : <sub>N,II</sub> =  | 1,5                     | 50        | 1,7                | '5                 | 2,0                | 0                            | 2,5                | 50                | 3,0                 | 0              | 3,5                                   | 50    | 4,0                | 0  |
| М   | M <sub>t,nom</sub> = |                         |           |                    |                    |                    |                              | -                  |                   |                     |                |                                       |       |                    |    |
|   | 0,50                 | 2,04ª)                  | ac        | 2,04ª)             | ac                 | 2,04ª)             | ac                           | 2,04ª)             | ac                | 2,04ª)              | ac             | 2,04ª)                                | ac    | 2,04ª)             | ac |
|   | 0,55                 | 2,21ª)                  | ac        | 2,21ª)             | ac                 | 2,21ª)             | ac                           | 2,21ª)             | ac                | 2,21ª)              | ac             | 2,21ª)                                | ac    | 2,21ª)             | ac |
|   | 0,63                 | 2,46ª)                  | ac        | 2,46 <sup>a)</sup> | ac                 | 2,46 <sup>a)</sup> | ac                           | 2,46ª)             | ac                | 2,46ª)              | ac             | 2,46 <sup>a)</sup>                    | ac    | 2,46ª)             | ac |
| П   | 0,75                 | 2,88ª)                  | ac        | 2,88ª)             | ac                 | 2,88ª)             | ac                           | 2,88ª)             | ac                | 2,88ª)              | ac             | 2,88ª)                                | ac    | 2,88ª)             | ac |
| $V_{\scriptscriptstyle R,k}$ for $t_{\scriptscriptstyle N,I}$   | 0,88                 | 3,16                    | -         | 3,21               | -                  | 3,27               | -                            | 3,37               | -                 | 3,47ª)              | ac             | 3,47ª)                                | ac    | 3,47ª)             | ac |
| or  | 1,00                 | 3,44                    | -         | 3,54               | -                  | 3,65               | -                            | 3,85               | -                 | 4,06 <sup>a)</sup>  | ac             | 4,06 <sup>a)</sup>                    | ac    | 4,06 <sup>a)</sup> | ac |
| R,k f   | 1,13                 | 3,79                    | -         | 3,87               | -                  | 3,95               | -                            | 4,10               | -                 | 4,26                | -              | 4,26                                  | -     | 4,26               | -  |
| >   | 1,25                 | 4,14                    | -         | 4,19               | -                  | 4,25               | -                            | 4,35               | -                 | 4,45                | -              | 4,45                                  | -     | 4,45               | -  |
|   | 1,50                 | 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               | -  |
|   | 2,00                 | 4,84                    | -         | 4,84               | -                  | 4,84               | -                            | 4,84               | -                 | 4,84                | -              | 4,84                                  | -     | 4,84               | -  |
|   | 0,50                 | 1,65                    | ac        | 1,77ª)             | ac                 | 1,77ª)             | ac                           | 1,77 <sup>a)</sup> | ac                | 1,77ª)              | ac             | 1,77ª)                                | ac    | 1,77ª)             | ac |
|   | 0,55                 | 1,65                    | ac        | 1,96ª)             | ac                 | 1,96ª)             | ac                           | 1,96ª)             | ac                | 1,96ª)              | ac             | 1,96ª)                                | ac    | 1,96ª)             | ac |
|   | 0,63                 | 1,65                    | ac        | 2,14               | ac                 | 2,35               | ac                           | 2,35ª)             | ac                | 2,35ª)              | ac             | 2,35ª)                                | ac    | 2,35ª)             | ac |
| Ш   | 0,75                 | 1,65                    | ac        | 2,14               | ac                 | 2,63               | ac                           | 2,73 <sup>a)</sup> | ac                | 2,73ª)              | ac             | 2,73 <sup>a)</sup>                    | ac    | 2,73ª)             | ac |
|   | 0,88                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 2,86ª)             | -                 | 2,86ª)              | ac             | 2,86ª)                                | ac    | 2,86ª)             | ac |
| ort   | 1,00                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 2,98ª)             | -                 | 2,98ª)              | ac             | 2,98ª)                                | ac    | 2,98ª)             | ac |
| $N_{{\scriptscriptstyle R},{\scriptscriptstyle k}}$ for $t_{{\scriptscriptstyle N},{\scriptscriptstyle I}}$ | 1,13                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 3,40               | -                 | 3,40                | -              | 3,40                                  | -     | 3,40               | -  |
| Z   | 1,25                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 3,81               | -                 | 3,81                | -              | 3,81                                  | -     | 3,81               | -  |
|   | 1,50                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 3,92               | -                 | 4,87                | -              | 4,87                                  | -     | 4,87               | -  |
|   | 1,75                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 3,92               | -                 | 4,87                | -              | 4,87                                  | -     | 4,87               | -  |
| 1   | 2,00                 | 1,65                    | -         | 2,14               | -                  | 2,63               | -                            | 3,92               | -                 | 4,87                | -              | 4,87                                  | -     | 4,87               | -  |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

HWH 5.5XL #2+ HX8 ALU-16B with hexagon head and seal washer  $\ge @16 \text{ mm}$ 

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|                           | ~4,00  | ~L   |   |  |        | Mate   | <u>rials</u>   |  |                   |  |                |  |              |  |    |
|---------------------------|--|--|---|--|--------|--|----------------|--|-------------------|--|----------------|--|--------------|--|----|
| F                         | -01.10   | -05,50<br>   | 1 | ~8,00  | ~04,50 | Faste<br>Wash  |                | S<br>S   | tainl<br>tainl    | ess steel<br>ess steel<br>ess steel<br>ess steel   | (1.4<br>(1.4   | 401) - E<br>301) - E   | N 10<br>N 10 | 088<br>088   |    |
|                           |  | ~1,80  |   |  |        |  | ponei<br>ponei | ntI: S<br>ntII: S  | 2800<br>235       | GD, S320<br>- EN 100<br>GD or S3   | )GD (<br>)25-2 | or S3500<br>2  | GD -         | EN 1034  | 46 |
|                           |  | ~Ø16,0   | - |  |        | Drilli   | ng ca          | pacity:  | Σt <sub>i</sub> ≤ | 6,0 mm   | I              |  |              |  |    |
|                           |  | RXB  |   |  |        |  |                | <u>bstructu</u><br>r substru   |                   | es no pe   | erfom          | rance de   | etern        | nined  |    |
| t                         | -<br>N,II =  | 1,5  | 0 | 1,7  | 5      | 2,0  | 0              | 2,5  | 0                 | 3,0  | 0              | 3,5  | 0            | 4,0  | 0  |
| М                         | <sub>t,nom</sub> =   |  |   |  |        |  |                | -  |                   |  |                |  |              |  |    |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,92 <sup>a)</sup><br>0,97 <sup>a)</sup><br>1,09<br>1,21<br>1,44<br>1,44<br>1,44 |   | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,00 <sup>a)</sup><br>1,14 <sup>a)</sup><br>1,24<br>1,34<br>1,53<br>1,53<br>1,53 |        | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,09 <sup>a)</sup><br>1,31 <sup>a)</sup><br>1,39<br>1,47<br>1,63<br>1,63<br>1,63 |                | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>1,26 <sup>a)</sup><br>1,66 <sup>a)</sup><br>1,70<br>1,74<br>1,81<br>1,81<br>1,81                       |                   | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |                | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |              | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |    |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   |   | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14   |        | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63   |                | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>3,92<br>3,92<br>3,92 |                   | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   |                | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   |              | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87                           |    |

If component I is made of S320GD or S350GD, the values marked with  $^{\rm a)}$  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.

CORONA, HWH, MH, DC and LP

HWH RXB 5.5XL #2P+ HX8 RX-16G with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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|                           | ~4,00  | ~L   |          | •  |         | Mate   | rials         |  |   |  |  |  |                              |  |    |
|---------------------------|--|--|----------|--|---------|--|---------------|--|---|--|--|--|------------------------------|--|----|
| Ę                         | -04.10   | 05'50<br>00<br>1,80  | <u>.</u> | ~8,00  | ~ 04,50 |  | ner:<br>ponei | S<br>S<br>nt I: S<br>nt II: S  | tainle<br>tainle<br>tainle<br>2800<br>235 | ess steel<br>ess steel<br>ess steel<br>ess steel<br>GD, S320<br>– EN 100<br>GD or S3   | (1.4<br>(1.4<br>(1.4<br>)GD (<br>)25-2 | 401) - E<br>301) - E<br>401) - E<br>or S3500<br>2  | N 10<br>N 10<br>N 10<br>GD - | 088<br>088<br>088<br>EN 1034   | 46 |
|                           |  | ~Ø16,0   | -        |  |         | Drilli   | ng ca         | pacity:  | Σt <sub>i</sub> ≤                         | 6,0 mm   | 1                                      |  |                              |  |    |
|                           |  | RXB  |          | 1  |         |  |               | <u>bstructi</u><br>r substri   |   | es no pe   | erfom                                  | rance de   | etern                        | nined  |    |
| t                         |  | 1,5  | 50       | 1,7  | 5       | 2,0  | 0             | 2,5  | 0   | 3,0  | 0                                      | 3,5  | 0                            | 4,0  | 0  |
| М                         | t,nom =  |  |          |  |         |  |               | -  |   |  |  |  |                              |  |    |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,57<br>0,64<br>0,79<br>0,79<br>0,79 |          | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,52 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,91<br>0,67<br>0,80<br>0,80<br>0,80 |         | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,65<br>0,70<br>0,80<br>0,80 |               | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,72 <sup>a)</sup><br>0,72<br>0,72<br>0,82<br>0,82<br>0,82 |   | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |  | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |                              | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |    |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   |          | 1,77 <sup>a</sup> )<br>1,96 <sup>a</sup> )<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14   |         | 1,77°)<br>1,96°)<br>2,35<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63   | -             | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>3,92<br>3,92<br>3,92   |   | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   |  | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   | -                            | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   |    |

If component I is made of S320GD or S350GD, the values marked with  $^{\rm a)}$  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.

CORONA, HWH, MH, DC and LP

HWH RXB 5.5XL #2P+ HX8 RX-16G with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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English translation prepared by DIBt



|   | ~4,00  | ~L                 |   |                    | - | Mate               | rials        |                               |                   |                                  |                |                    |       |                    |    |
|---|--|--------------------|---|--------------------|---|--------------------|--------------|-------------------------------|-------------------|----------------------------------|----------------|--------------------|-------|--------------------|----|
| F   | -05,50   | - <sup>~1,80</sup> |   | ~8,00              |   | Faste              |              | С                             | ase h             | n steel<br>hardeneo              |                |                    |       |                    |    |
|   | 00000000   | ••••••             |   |                    |   | Wash               | ner:         |                               |                   | nium (EN<br>n steel,             |                |                    |       |                    | mm |
|   |  | ~Ø16,00            | - |                    |   |                    | pone<br>pone | ntI: S<br>ntII: S             | 2800<br>235       | GD, S320<br>- EN 100<br>GD or S3 | )GD (<br>025-2 | or S3500<br>2      | GD -  | EN 1034            | 16 |
|   |  |                    |   |                    |   | Drilli             | ng ca        | pacity:                       | Σt <sub>i</sub> ≤ | 6,0 mm                           | ı              |                    |       |                    |    |
|   |  |                    | Ŋ |                    |   |                    |              |                               |                   |                                  |                |                    |       |                    |    |
|   |  |                    |   |                    |   |                    |              | ı <u>bstructı</u><br>r substr |                   | es no pe                         | erfom          | irance de          | etern | nined              |    |
| t   | ,,,II =  | 1,5                | 0 | 1,7                | 5 | 2,0                | 0            | 2,5                           | 50                | 3,0                              | 0              | 3,5                | 0     | 4,0                | 0  |
| M   | $t_{N,II} = 1,50$ $M_{t,nom} = 1,50$ $0,50$ $0,82^{a} - 0,82^{a} - 0,82^{a} - 0,83^{a} - 0,63$ $0,63$ $0,84^{a} - 0,88^{a} - 0,84^{a} - 0,75$ $0,86^{a} - 0,86^{a} - 0,86^{a} - 0,86^{a} - 0,86^{a} - 0,75$ $1,00$ $0,97^{a} - 1,14^{a} - 1,53$ $1,75$ $1,44$ $-1,53$ $1,75$ $1,44$ $-1,53$ $-1,75$ $1,44$ $-1,53$ $-1,75$ $1,44$ $-1,53$ $-1,75$ $1,44$ $-1,53$ $-1,75$ $-2,00$ $1,44$ $-1,53$ $-1,75$ $-2,14$ $-0,55$ $-2,14$ $-0,75$ $-2,14$ $-1,55$ $-1,55$ $-2,14$ $-1,55$ $-1,5$ |                    |   |                    |   |                    |              | -                             |                   |                                  |                |                    |       |                    |    |
|   | 0,50   | 0,82ª)             | - | 0,82ª)             | - | 0,82ª)             | -            | 0,82ª)                        | -                 | 0,82ª)                           | -              | 0,82ª)             | -     | 0,82ª)             | -  |
|   | 0,55   | 0,83ª)             | - | 0,83 <sup>a)</sup> | - | 0,83ª)             | -            | 0,83ª)                        | -                 | 0,83ª)                           | -              | 0,83ª)             | -     | 0,83ª)             | -  |
|   | 0,63   | 0,84ª)             | - | 0,84 <sup>a)</sup> | - | 0 <b>,</b> 84ª)    | -            | 0,84 <sup>a)</sup>            | -                 | 0,84 <sup>a)</sup>               | -              | 0,84ª)             | -     | 0,84ª)             | -  |
| П   | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  |                    |   |                    |   | 0,86 <sup>a)</sup> | -            | 0,86ª)                        | -                 | 0,86 <sup>a)</sup>               | -              | 0,86ª)             | -     | 0,86ª)             | -  |
| L, I  | 0,88   | 0,92ª)             | - | 1,00ª)             | - | 1,09 <sup>a)</sup> | -            | 1,26 <sup>a)</sup>            | -                 | 1,43ª)                           | -              | 1,43ª)             | -     | 1,43ª)             | -  |
| or t  | 1,00   | 0,97ª)             | - | $1,14^{a}$         | - | 1,31ª)             | -            | 1,66ª)                        | -                 | 2,00ª)                           | -              | 2,00ª)             | -     | 2,00ª)             | -  |
| ۲×<br>۲   | 1,13   | 1,09               | - | 1,24               | - | 1,39               | -            | 1,70                          | -                 | 2,00 <sup>a)</sup>               | -              | 2,00ª)             | -     | 2,00ª)             | -  |
| >"  | 1,25   | 1,21               | - | 1,34               | - | 1,47               | -            | 1,74                          | -                 | 2,00 <sup>a)</sup>               | -              | 2,00 <sup>a)</sup> | -     | 2,00ª)             | -  |
|   | 1,50   | 1,44               | - | 1,53               | - | 1,63               | -            | 1,81                          | -                 | 2,00 <sup>a)</sup>               | -              | 2,00ª)             | -     | 2,00ª)             | -  |
|   | 1,75   | 1,44               | - | 1,53               | - | 1,63               | -            | 1,81                          | -                 | 2,00 <sup>a)</sup>               | -              | 2,00ª)             | -     | 2,00ª)             | -  |
|   | 2,00   | 1,44               | - | 1,53               | - | 1,63               | -            | 1,81                          | -                 | 2,00ª)                           | -              | 2,00ª)             | -     | 2,00ª)             | -  |
|   | 0,50   | 1,65               | - | 1,77 <sup>a)</sup> | - | 1,77ª)             | -            | 1,77ª)                        | -                 | 1,77ª)                           | -              | 1,77 <sup>a)</sup> | -     | 1,77ª)             | -  |
|   | 0,55   | 1,65               | - | 1,96 <sup>a)</sup> | - | 1,96 <sup>a)</sup> | -            | 1,96ª)                        | -                 | 1,96ª)                           | -              | 1,96ª)             | -     | 1,96ª)             | -  |
|   | 0,63   | 1,65               | - | 2,14               | - | 2,35               | -            | 2,35 <sup>a)</sup>            | -                 | 2,35 <sup>a)</sup>               | -              | 2,35ª)             | -     | 2,35ª)             | -  |
| Ш   | 0,75   | 1,65               | - | 2,14               | - | 2,63               | -            | 2,73 <sup>a)</sup>            | -                 | 2,73 <sup>a)</sup>               | -              | 2,73ª)             | -     | 2,73 <sup>a)</sup> | -  |
| t <sub>N,I</sub>  | 0,88   | 1,65               | - | 2,14               | - | 2,63               | -            | 2,86ª)                        | -                 | 2,86ª)                           | -              | 2,86ª)             | -     | 2,86ª)             | -  |
| or  | 1,00   | 1,65               | - | 2,14               | - | 2,63               | -            | 2,98ª)                        | -                 | 2,98ª)                           | -              | 2,98ª)             | -     | 2,98ª)             | -  |
| $N_{{\scriptscriptstyle R},{\scriptscriptstyle k}}$ for | 1,13   | 1,65               | - | 2,14               | - | 2,63               | -            | 3,40                          | -                 | 3,40                             | -              | 3,40               | -     | 3,40               | -  |
| Z   | 1,25   | 1,65               | - | 2,14               | - | 2,63               | -            | 3,81                          | -                 | 3,81                             | -              | 3,81               | -     | 3,81               | -  |
|   | 1,50   | 1,65               | - | 2,14               | - | 2,63               | -            | 3,92                          | -                 | 4,87                             | -              | 4,87               | -     | 4,87               | -  |
|   | 1,75   | 1,65               | - | 2,14               | - | 2,63               | -            | 3,92                          | -                 | 4,87                             | -              | 4,87               | -     | 4,87               | -  |
|   | 2,00   | 1,65               | - | 2,14               | - | 2,63               | -            | 3,92                          | -                 | 4,87                             | -              | 4,87               | -     | 4,87               | -  |

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.

CORONA, HWH, MH, DC and LP

HWH 5.5XL #2P+ HX8 ALU-16B with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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English translation prepared by DIBt



|                           | ~4,00  | -  | Mate | rials  |        |  |              |  |                   |  |                |  |       |  |   |
|---------------------------|--|--|------|--|--------|--|--------------|--|-------------------|--|----------------|--|-------|--|---|
|                           | -04,10   | ~1,80  |      | ~8,0   | -04,50 | Faste<br>Wasł  |              | C<br>A   | ase l<br>Iumi     | n steel<br>hardeneo<br>hium (EN<br>n steel,  | WA I           | -1100-H  | 18),  |  | mm  |
|                           |  | ~Ø16,00  |      |  |        |  | pone<br>pone | ntI: S<br>ntII: S  | 2800<br>235       | GD, S320<br>- EN 100<br>GD or S3   | )GD (<br>)25-2 | or S3500<br>2  | GD -  | EN 1034  | 16  |
|                           |  |  |      |  |        | Drilli   | ng ca        | pacity:  | Σt <sub>i</sub> ≤ | 6,0 mm   | 1              |  |       |  |   |
|                           |  |  |      |  |        |  |              | i <u>bstructi</u><br>r substr  |                   | es no pe   | erforr         | nrance de  | etern | nined  |   |
| t                         | N,II =   | 1,5  | 0    | 1,7  | 5      | 2,0  | 0            | 2,5  | 0                 | 3,0  | 0              | 3,5  | 0     | 4,0  | 0   |
| М                         | t,nom =  |  |      |  |        |  |              | -  |                   |  |                |  |       |  |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,57<br>0,57<br>0,64<br>0,79<br>0,79<br>0,79 |      | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,52 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,91<br>0,67<br>0,80<br>0,80 |        | 0,34 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,65<br>0,70<br>0,80<br>0,80<br>0,80 |              | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,72 <sup>a)</sup><br>0,74<br>0,77<br>0,82<br>0,82<br>0,82                             |                   | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |                | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |       | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   |      | 1,77 <sup>a</sup> )<br>1,96 <sup>a</sup> )<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14                                 | -      | 1,77°)<br>1,96°)<br>2,35<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63   |              | 1,77 <sup>a</sup> )<br>1,96 <sup>a</sup> )<br>2,35 <sup>a</sup> )<br>2,73 <sup>a</sup> )<br>2,86 <sup>a</sup> )<br>2,98 <sup>a</sup> )<br>3,40<br>3,81<br>3,92<br>3,92<br>3,92 |                   | 1,77 <sup>a</sup> )<br>1,96 <sup>a</sup> )<br>2,35 <sup>a</sup> )<br>2,73 <sup>a</sup> )<br>2,86 <sup>a</sup> )<br>2,98 <sup>a</sup> )<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   | -              | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   | -     | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87   |   |

If component I is made of S320GD or S350GD, the values marked with  $^{\rm a)}$  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.

CORONA, HWH, MH, DC and LP

HWH 5.5XL #2P+ HX8 ALU-16B with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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English translation prepared by DIBt



|                           | ~4,00  | ~L   |   |  |   | Materials  |   |  |   |  |  |                                     |                                      |
|---------------------------|--|--|---|--|---|--|---|--|---|--|--|-------------------------------------|--------------------------------------|
|                           | -04,10   | 93<br>93<br>93<br>93<br>94<br>94<br>94<br>94<br>94<br>94<br>94<br>94<br>94<br>94   |   | -04,90   |   | Fastener:<br>Washer:<br>Componer<br>Componer   |   | Stainless<br>Stainless<br>Stainless<br>S280GD,<br>S235 – E<br>S280GD   | steel<br>steel<br>steel<br>S320<br>N 100                      | (1.4401)<br>(1.4301)<br>(1.4401)<br>GD or S3<br>25-2   | ) - EN<br>) - EN<br>) - EN<br>350GD                  | 10088<br>10088<br>10088<br>- EN 103 | 346                                  |
|                           |  |  |   |  |   | Drilling ca  | pacity  | $\Sigma t_i \leq 12$   | 2,5 mn  | n  |  |                                     |                                      |
|                           |  |  |   | 1  |   | <u>Fimber su</u><br>For timber   | r subst   | tructures  |   |  |  | 1                                   |                                      |
| t                         | $E_{N,II} = 4,00$ 5,00   |  |   |  | 0   | 6,0  | 0   | 8,0  | 0   | 10,  | 00   | 12,0                                | 00                                   |
| M                         | t,nom =  |  |   |  |   |  |   | -  |   |  |  |                                     |                                      |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 2,26 <sup>a)</sup><br>2,54 <sup>a)</sup><br>2,97 <sup>a)</sup><br>3,67 <sup>a)</sup><br>4,38 <sup>a)</sup><br>5,08 <sup>a)</sup><br>5,53<br>5,98<br>6,87<br>6,87<br>6,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a)</sup><br>2,54 <sup>a)</sup><br>2,97 <sup>a)</sup><br>3,67 <sup>a)</sup><br>4,38 <sup>a)</sup><br>5,08 <sup>a)</sup><br>5,53<br>5,98<br>6,87<br>6,87<br>6,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a</sup> )<br>2,54 <sup>a</sup> )<br>2,97 <sup>a</sup> )<br>3,67 <sup>a</sup> )<br>4,38 <sup>a</sup> )<br>5,08 <sup>a</sup> )<br>5,53<br>5,98<br>6,87<br>6,87<br>6,87   | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a)</sup><br>2,54 <sup>a)</sup><br>2,97 <sup>a)</sup><br>3,67 <sup>a)</sup><br>4,38 <sup>a)</sup><br>5,08 <sup>a)</sup><br>5,53<br>5,98<br>6,87<br>6,87<br>6,87         | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a</sup> )<br>2,54 <sup>a</sup> )<br>2,97 <sup>a</sup> )<br>3,67 <sup>a</sup> )<br>4,38 <sup>a</sup> )<br>5,08 <sup>a</sup> )<br>5,53<br>5,98<br>6,87<br>6,87<br>6,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>a<br>a<br>a<br>- | 2,26 <sup>a)</sup>                  | a<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-       | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-       | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-       | 1,77 <sup>a)</sup><br>1,96 <sup>a)</sup><br>2,35 <sup>a)</sup><br>2,73 <sup>a)</sup><br>2,86 <sup>a)</sup><br>2,98 <sup>a)</sup><br>3,40<br>3,81<br>4,87<br>4,87<br>4,87<br>4,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-       | 1,77°)<br>1,96°)<br>2,35°)<br>2,73°)<br>2,86°)<br>2,98°)<br>3,40<br>3,81<br>4,87<br>4,87<br>4,87<br>4,87   | ас<br>ас<br>ас<br>ас<br>ас<br>а<br>а<br>а<br>а<br>-  | 1,77 <sup>a)</sup>                  | a<br>-<br>-<br>-<br>-<br>-<br>-      |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

HWH RXB 5.5XL #5 RX-16G with hexagon head and seal washer  $\ge @16 \text{ mm}$ 

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|   | •   | ~L      |        |                    |    | Materials                      |        |   |               |                  |        |          |      |
|---|---|---------|--------|--------------------|----|--------------------------------|--------|---|---------------|------------------|--------|----------|------|
|   | <ul> <li>-4,00     <li>-4,00     <li>-9,00     <li>-9,00     <li>-9,00     <li>-9,00     </li> </li></li></li></li></li></ul> | I       |        |                    |    | Fastener:                      |        | Carbon s                                  |               | and cal          |        |          |      |
|   | ~   | +       | ~15,00 | -04,90             |    | Washer:                        |        | Case har<br>Aluminiu                      |               |                  |        |          | 3 mm |
| E   |   |         | 1,00   |                    |    | Componer<br>Componer           |        | Carbon s<br>S280GD,<br>S235 - E<br>S280GD | S320<br>N 100 | GD or S3<br>25-2 | 350GD  | - EN 103 | 346  |
|   |   | ~Ø16,00 |        |                    | Γ  | Drilling ca                    | pacity | : Σt <sub>i</sub> ≤ 12                    | 2,5 mn        | n                |        |          |      |
|   |   | -010,00 |        |                    |    | <u>Timber su</u><br>For timber |        |   | no pei        | rfomranc         | e dete | rmined   |      |
| t   | <sub>N,II</sub> = 4,00 5,0  |         |        |                    | 0  | 6,0                            | 0      | 8,0                                       | 0             | 10,              | 00     | 12,0     | 00   |
| М   | <sub>t,nom</sub> =  |         |        |                    |    |                                |        | -   |               |                  |        |          |      |
|   | 0,50  | 2,26ª)  | ac     | 2,26ª)             | ac | 2,26ª)                         | ac     | 2,26ª)                                    | ac            | 2,26ª)           | ac     | 2,26ª)   | а    |
|   | 0,55  | 2,54ª)  | ac     | 2,54ª)             | ac | 2,54ª)                         | ac     | 2,54ª)                                    | ac            | 2,54ª)           | ac     | -        | -    |
|   | 0,63  | 2,97ª)  | ac     | 2,97ª)             | ac | 2,97ª)                         | ac     | 2,97ª)                                    | ac            | 2,97ª)           | ac     | -        | -    |
| П   | 0,75  | 3,67ª)  | ac     | 3,67ª)             | ac | 3,67ª)                         | ac     | 3,67ª)                                    | ac            | 3,67ª)           | ac     | -        | -    |
| $V_{\scriptscriptstyle R,k}$ for $t_{\scriptscriptstyle N,I}$   | 0,88  | 4,38ª)  | ac     | 4,38ª)             | ac | 4,38ª)                         | ac     | 4,38ª)                                    | ac            | 4,38ª)           | ac     | -        | -    |
| or  | 1,00  | 5,08ª)  | ac     | 5,08ª)             | ac | 5,08ª)                         | ac     | 5,08ª)                                    | ac            | 5,08ª)           | ac     | -        | -    |
| ,× f  | 1,13  | 5,53    | ac     | 5,53               | ac | 5,53                           | ac     | 5,53                                      | ac            | 5,53             | а      | -        | -    |
| >   | 1,25  | 5,98    | ac     | 5,98               | ac | 5,98                           | ac     | 5,98                                      | ac            | 5,98             | а      | -        | -    |
|   | 1,50  | 6,87    | ac     | 6,87               | ac | 6,87                           | ac     | 6,87                                      | ac            | 6,87             | а      | -        | -    |
|   | 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  | 1,77ª)  | ac     | 1,77ª)             | ac | 1,77 <sup>a)</sup>             | ac     | 1,77ª)                                    | ac            | 1,77ª)           | ac     | 1,77ª)   | а    |
|   | 0,55  | 1,96ª)  | ac     | 1,96ª)             | ac | 1,96ª)                         | ac     | 1,96ª)                                    | ac            | 1,96ª)           | ac     | -        | -    |
|   | 0,63  | 2,35ª)  | ac     | 2,35 <sup>a)</sup> | ac | 2,35 <sup>a)</sup>             | ac     | 2,35ª)                                    | ac            | 2,35ª)           | ac     | -        | -    |
| П   | 0,75  | 2,73ª)  | ac     | 2,73ª)             | ac | 2,73ª)                         | ac     | 2,73ª)                                    | ac            | 2,73ª)           | ac     | -        | -    |
| t <sub>N,I</sub>  | 0,88  | 2,86ª)  | ac     | 2,86ª)             | ac | 2,86ª)                         | ac     | 2,86ª)                                    | ac            | 2,86ª)           | ac     | -        | -    |
| or  | 1,00  | 2,98ª)  | ac     | 2,98ª)             | ac | 2,98ª)                         | ac     | 2,98ª)                                    | ac            | 2,98ª)           | ac     | -        | -    |
| $N_{{\scriptscriptstyle R},{\scriptscriptstyle k}}$ for $t_{{\scriptscriptstyle N},{\scriptscriptstyle I}}$ | 1,13  | 3,40    | ac     | 3,40               | ac | 3,40                           | ac     | 3,40                                      | ac            | 3,40             | а      | -        | -    |
| Z   | 1,25  | 3,81    | ac     | 3,81               | ac | 3,81                           | ac     | 3,81                                      | ас            | 3,81             | а      | -        | -    |
|   | 1,50  | 4,87    | ac     | 4,87               | ac | 4,87                           | ac     | 4,87                                      | ас            | 4,87             | а      | -        | -    |
|   | 1,75  | 4,87    | -      | 4,87               | -  | 4,87                           | -      | 4,87                                      | -             | 4,87             | -      | -        | -    |
|   | 2,00  | 4,87    | -      | 4,87               | -  | 4,87                           | -      | 4,87                                      | -             | 4,87             | -      | -        | -    |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

HWH 5.5XL #5 ALU-16G with hexagon head and seal washer  $\geq \emptyset$ 16 mm

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|                           |  | ~L   | ~1,60 |   | -      |   | Mate                     | rials   |                          |  |                             |   |                           |  |              |  |   |
|---------------------------|--|--|-------|---|--------|---|--------------------------|---|--------------------------|--|-----------------------------|---|---------------------------|--|--------------|--|---|
|                           | -03:50   | <sup>88</sup> <sup>4</sup> <sup>6</sup> / <sub>2</sub> , <b>→ → → → → → → → → →</b>  |       | - <sup>~4,50</sup>  | ~02,90 | -   | Com                      | er:<br>ponent<br>ponent   | II:                      | Stainle<br>Stainle<br>None<br>S280GI<br>S235 –<br>S280GI   | ss st<br>D, S<br>EN<br>D, S | eel (1.4<br>320GD<br>10025-<br>320GD  | 1401<br>or S<br>2<br>or S | .) - EN<br>350GD   | 1008<br>– El | 38<br>N 1034   |   |
|                           |  |  |       |   |        | L   | Drillir                  | ng capa   | acity                    | : Σt <sub>i</sub> ≤ 2  | 2 x 1                       | .,25 mr   | n                         |  |              |  |   |
|                           |  |  | )     |   | I      |   | <u>er subs</u><br>mber s |   | <u>tures</u><br>tructure | es no  | perfon                      | nran  | ce dete                   | ermir  | ned          |  |   |
| t                         | N,II =   |  |       |   |        |   |                          | 0,7   | 5                        | 0,8  | 8                           | 1,0   | 0                         | 1,1  | 3            | 1,2  | 5   |
| M                         | t,nom =  |  |       |   |        |   |                          |   |                          | -  |                             |   |                           |  |              |  |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,63<br>0,75   | 1,52 <sup>a)</sup><br>1,52 <sup>a)</sup><br>1,52 <sup>a)</sup><br>1,52 <sup>a)</sup><br>1,52 <sup>a)</sup><br>1,52 <sup>a)</sup><br>-<br>-<br>-                  |       | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>-<br>-<br>- |        | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-         | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>-<br>-<br>- | -                        | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-                 | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-<br>-                  | -<br>-<br>-<br>-          | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-  | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>0,57 <sup>a)</sup><br>-<br>- |       | 0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>-<br>-<br>- |        | 0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>-<br>-<br>-                       | -<br>-<br>-<br>-         | $1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>$1,05^{a)}$<br>-<br>-<br>-<br>-                              |                          | 1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>-<br>-<br>-      | -<br>-<br>-                 | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,58 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>-<br>-<br>- |                           | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81 <sup>a)</sup><br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-<br>-                           | -            | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81 <sup>a)</sup><br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-                           |   |

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

CORONA, HWH, MH, DC and LP

MH RXB 4.8XL #1 TX20 with mushroom head with TX drive system

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|                           | -  | ~L  | _~1,60 | •   |                  |   | Mate             | rials  |      |  |              |   |      |  |       |  |   |
|---------------------------|--|---|--------|---|------------------|---|------------------|--|------|--|--------------|---|------|--|-------|--|---|
|                           | -03,56   | -04'8   |        | ~4,50   | ~ 02,90          |   |                  | er:<br>ponent  |      | Carbon<br>Case ha<br>None<br>S280GI<br>S235 -  | arde<br>D, S | ned and<br>320GD  | or S |  |       | N 1034   | 6   |
|                           |  |   |        |   |                  |   | Com              | onent  | 11.  | 5255 -<br>S280GI   |              |   |      | 350GD  | – Eľ  | N 1034   | 6   |
|                           |  | ~Ø9,50  |        | •   |                  |   | Drillir          | ng capa  | city | : Σt <sub>i</sub> ≤ 2  | 2 x 1        | .,25 mr   | n    |  |       |  |   |
|                           |  | = 0,50 0,55   |        |   |                  |   |                  | <u>er subs</u><br>mber s   |      | <u>tures</u><br>tructure   | es no        | perfor  | nran | ce dete  | ermir | ned  |   |
| t                         | N,II =   |   |        |   |                  |   |                  | 0,7  | 5    | 0,8  | 8            | 1,0   | 0    | 1,1  | 3     | 1,2  | 5   |
| M                         | t,nom =  |   |        |   |                  |   |                  | _  |      | -  |              |   |      | _  |       |  |   |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>1,52°)<br>-<br>-<br>-<br>-<br>- | -<br>- | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,64 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>1,82 <sup>a)</sup><br>-<br>-<br>- |                  | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,11 <sup>a)</sup><br>-<br>-<br>-<br>- |      | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>2,79 <sup>a)</sup><br>-<br>-<br>-<br>- |              | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-                       |      | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-<br>- |       | 1,52 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,11 <sup>a)</sup><br>2,79 <sup>a)</sup><br>3,47 <sup>a)</sup><br>3,47 <sup>a)</sup><br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57°)<br>0,57°)<br>0,57°)<br>0,57°)<br>0,57°)<br>0,57°)<br>0,57°)<br>-<br>-<br>-<br>-                |        | 0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>0,62 <sup>a)</sup><br>-<br>-<br>- |                  | 0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>-<br>-<br>-      |      | 1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>-<br>-<br>-      |              | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,58 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>-<br>-<br>- |      | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81 <sup>a)</sup><br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-<br>-                           |       | 1,35 <sup>a)</sup><br>1,53 <sup>a)</sup><br>1,81 <sup>a)</sup><br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-                   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-                     |

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

CORONA, HWH, MH, DC and LP

DC 4.8XL #1 TX20 with mushroom head with TX drive system

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|                           | •  | ~L   |  | -  |        |   | Mate             | rials   |           |   |                      |   |                                 |   |                  |  |  |
|---------------------------|--|--|--|--|--------|---|------------------|---|-----------|---|----------------------|---|---------------------------------|---|------------------|--|--|
|                           | -d9.50   | 05 <sup>1</sup> 07<br>1.6  | I                                      | 4,50   |        |   |                  | er:<br>oonent   | I:<br>II: | Stainle<br>Stainle<br>None<br>S280GI<br>S235 –<br>S280GI  | ss st<br>D, S:<br>EN | eel (1.<br>320GD<br>10025-  | 4401<br>or S<br>·2              | .) - EN<br>350GD  | 1008<br>– Eľ     | 38<br>N 1034   |  |
|                           |  | ~Ø13,80  | -                                      |  |        |   | Drillir          | ng capa   | acity     | $\Sigma \Sigma t_i \leq 2$  | 2 x 1                | .,25 mi   | m                               |   |                  |  |  |
|                           |  |  |  |  |        |   |                  | <u>er subs</u><br>mber s  |           | <u>tures</u><br>ructure   | es no                | perfor  | nran                            | ce dete   | ermir            | ned  |  |
| t                         | <sub>N,II</sub> =  | 0,50   |  | 0,5  | 5      | 0,  | 63               | 0,7   | 5         | 0,8   | 8                    | 1,0   | 0                               | 1,1   | 3                | 1,2  | 5  |
| M                         | .,nom =  |  |  |  |        |   |                  |   |           | -   |                      |   |                                 |   |                  |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,07 <sup>a)</sup> -<br>1,07 <sup>a)</sup> -<br>1,07 <sup>a)</sup> -<br>   | - 1<br>- 1<br>- 1<br>- 1<br>- 1<br>- 1 | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,30 <sup>a)</sup><br>-<br>- | -<br>- | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,65 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,22 <sup>a)</sup><br>-<br>-<br>-<br>-                  |           | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,62 <sup>a)</sup><br>2,62 <sup>a)</sup><br>2,62 <sup>a)</sup><br>2,62 <sup>a)</sup><br>-<br>-<br>-<br>-                  | -<br>-<br>-          | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,62 <sup>a)</sup><br>3,02 <sup>a)</sup><br>3,02 <sup>a)</sup><br>-<br>-<br>-                       |                                 | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,62 <sup>a)</sup><br>3,02 <sup>a)</sup><br>3,56 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,07 <sup>a)</sup><br>1,30 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,22 <sup>a)</sup><br>2,62 <sup>a)</sup><br>3,02 <sup>a)</sup><br>3,56 <sup>a)</sup><br>4,09 <sup>a)</sup><br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-      |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br>0,57 <sup>a)</sup> -<br><br> | - C<br>- C<br>- C<br>- C               | ),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>),62 <sup>a)</sup><br>-<br>-<br>-                  | -      | 0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>0,71 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>- | 1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>1,05 <sup>a)</sup><br>-<br>-<br>- |           | 1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>1,34 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-          | 1,45 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>1,62 <sup>a)</sup><br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>-<br>- | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>1,92<br>-<br>-<br>-   | -                | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>2,22<br>-<br>-<br>-<br>-   | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |

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

CORONA, HWH, MH, DC and LP

CORONA RXB 4.8XL #1 TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|                                       | Compor   | r:<br>:<br>nent I:<br>nent II:   | Stainles<br>None<br>S280GD<br>Structur                       | s steel (1.4301) - EN 10088<br>s steel (1.4401) - EN 10088<br>o, S320GD or S350GD - EN 10346<br>ral timber - EN 14081 |
|---------------------------------------|--|--|--|---|
|                                       | <u>Timber</u><br>For tim   | <u>substruct</u><br>per subst<br>4,992 Nr  | ructures   | s perfomrance determined with r $I_{ef} \ge 24 \text{ mm}$  |
| V <sub>o</sub> , for t <sub>v</sub> = | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,09 <sup>a)</sup><br>1,20 <sup>a)</sup><br>1,64 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>2,18 <sup>a)</sup><br>-<br>- | Bearing resistance of component I, V <sub>R,I,k</sub>        |   |
| N<br>for<br>t.                        | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>6,56<br>-<br>-<br>-<br>-   | Pull-through resistance of component I, $N_{R,\mathrm{I},k}$ |   |

CORONA, HWH, MH, DC and LP

CORONA RXB 4.8XL #1 TX20 EPDM-9,5B for timber substructures with undercut, mushroom head with TX drive system and EPDM seal ring

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|                           |  | ۲~<br>ای او  |  | -  |   | Mate   | erials  |  |  |  |  |  |  |  |  |
|---------------------------|--|--|--|--|---|--|---|--|--|--|--|--|--|--|--|
|                           |  | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  | ~8,00  | ~@4,50   |   | Faste  | ener:   |  |  | ess stee   |  |  |  |  |  |
|                           | 06,50  |  | 1,80   |  |   | Stainless steel (1.4401) - EN 10088           Washer:         None           Component I:         S280GD, S320GD or S350GD - EN 1034           Component II:         S235 - EN 10025-2           S280GD or S320GD - EN 10346 |   |  |  |  |  | 46   |  |  |  |
|                           |  | ~Ø13,80  |  |  |   | Drilli   | ng ca   | pacity:  | Σt <sub>i</sub> ≤                            | 6,0 mm   | ו  |  |  |  |  |
|                           | t <sub>N,II</sub> = 1,50 1,75  |  |  |  |   |  |   | <u>bstruct</u><br>r substr   |  | es no pe   | erfom  | rance d  | eterm  | nined  |  |
| t                         | t <sub>N,II</sub> = 1,50 1,75  |  |  |  |   | 2,0  | 0   | 2,5  | 50   | 3,0  | 0  | 3,5  | 0  | 4,0  | 0  |
| M                         | t,nom =  |  |  |  |   |  |   | -  |  |  |  |  |  |  |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,16<br>3,44<br>3,79<br>4,14<br>4,84<br>4,84<br>4,84 | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,21<br>3,54<br>3,87<br>4,19<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,27<br>3,65<br>3,95<br>4,25<br>4,84<br>4,84<br>4,84   | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88<br>3,37<br>3,85<br>4,10<br>4,35<br>4,84<br>4,84<br>4,84                             | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84         | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>- | 2,04 <sup>a)</sup><br>2,21 <sup>a)</sup><br>2,46 <sup>a)</sup><br>2,88 <sup>a)</sup><br>3,47 <sup>a)</sup><br>4,06 <sup>a)</sup><br>4,26<br>4,45<br>4,84<br>4,84<br>4,84 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,45 <sup>a)</sup><br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   | ac<br>ac<br>ac<br>-<br>-<br>-<br>-                   | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14               | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-           | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63   | ac<br>ac<br>ac<br>-<br>-<br>-<br>-                | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>3,92<br>3,92<br>3,92<br>3,92<br>3,92<br>3,92 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-           | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,21<br>5,21<br>5,21<br>5,21<br>5,21<br>5,21 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-       | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>5,63<br>5,63<br>5,63<br>5,63 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-       | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>6,05<br>6,05<br>6,05<br>6,05 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-           |

If component I is made of S320GD or S350GD, the values marked with  $^{a)}$  may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

CORONA RXB 5.5XL #2+ TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|   | •<br>• •           | L~<br>2019         |       | -                        |    | Mate   | erials |                            |                   |  |         |  |         |  |         |
|---|--------------------|--------------------|-------|--------------------------|----|--|--------|----------------------------|-------------------|--|---------|--|---------|--|---------|
|   | 09'60~             | ~ 05,50            | ~1,80 | ~00,8<br>~07,20<br>~07,8 | -  | Wasł   |        | C                          | Case h<br>Ione    |  |         | l galvani                                |         |  | 4.5     |
|   |                    | ♥₩₩₩               |       |                          | L  | Component I: S280GD, S320GD or S350GD – EN 10346<br>Component II: S235 – EN 10025-2<br>S280GD or S320GD – EN 10346 |        |                            |                   |  |         |  |         | 46                                       |         |
|   | -                  | ~Ø13,8             | 30    | 1                        |    | Drilli   | ng ca  | pacity:                    | Σt <sub>i</sub> ≤ | 6,0 mm                                   | า       |  |         |  |         |
|   |                    |                    |       |                          |    |  |        | <u>bstruct</u><br>r substr |                   | es no pe                                 | erforr  | irance d                                 | eterm   | nined                                    |         |
| t   | -<br>N,II =        | 1,5                | 50    | 1,7                      | '5 | 2,0  | 0      | 2,5                        | 50                | 3,0                                      | 0       | 3,5                                      | 0       | 4,0                                      | 0       |
| М   | <sub>t,nom</sub> = |                    |       |                          |    |  |        | -                          |                   |  |         |  |         |  |         |
|   | 0,50               | 2,04ª)             | ac    | 2,04 <sup>a)</sup>       | ас | 2,04ª)   | ac     | 2,04ª)                     | ac                | 2,04ª)                                   | ac      | 2,04ª)                                   | ac      | 2,04ª)                                   | ac      |
|   | 0,55               | 2,21 <sup>a)</sup> | -     | 2,21 <sup>a)</sup>       | ac | 2,21 <sup>a)</sup>   | ac     | 2,21 <sup>a)</sup>         | ac                | 2,21 <sup>a)</sup>                       | ac      | 2,21 <sup>a)</sup>                       | ac      | 2,21ª)                                   | ac      |
|   | 0,63               | 2,46 <sup>a)</sup> | -     | 2,46 <sup>a)</sup>       | ac | 2,46 <sup>a)</sup>   | ac     | 2,46 <sup>a)</sup>         | ac                | 2,46 <sup>a)</sup>                       | ac      | 2,46 <sup>a)</sup>                       | ac      | 2,46 <sup>a)</sup>                       | ac      |
| <br>  | 0,75               | 2,88ª)             | -     | 2,88ª)                   | ac | 2,88ª)   | ac     | 2,88                       | ac                | 2,88ª)                                   | ac      | 2,88ª)                                   | ac      | $2,88^{a}$                               | ac      |
| $V_{\scriptscriptstyle R,k}$ for $t_{\scriptscriptstyle N,I}$   | 0,88               | 3,16<br>3,44       | -     | 3,21                     | -  | 3,27<br>3,65   | -      | 3,37<br>3,85               | -                 | 3,47 <sup>a)</sup><br>4,06 <sup>a)</sup> | ac      | 3,47 <sup>a)</sup><br>4,06 <sup>a)</sup> | ac      | 3,47 <sup>a)</sup><br>4,06 <sup>a)</sup> | ac      |
| for   | 1,00<br>1,13       | 3,79               | -     | 3,54<br>3,87             | -  | 3,95   | -      | 4,10                       | -                 | 4,00%                                    | ac<br>- | 4,00%                                    | ac<br>- | 4,06                                     | ac<br>- |
| ×<br>۳, к   | 1,15               | 4,14               | -     | 4,19                     | -  | 4,25   | -      | 4,10                       | -                 | 4,20                                     | -       | 4,20                                     | -       | 4,20                                     | -       |
|   | 1,50               | 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                                     | -       |
|   | 2,00               | 4,84               | -     | 4,84                     | -  | 4,84   | -      | 4,84                       | -                 | 4,84                                     | -       | 4,84                                     | -       | 4,84                                     | -       |
|   | 0,50               | 1,45ª)             | ac    | 1,45ª)                   | ас | 1,45ª)   | ac     | 1,45ª)                     | ас                | 1,45ª)                                   | ac      | 1,45ª)                                   | ac      | 1,45ª)                                   | ac      |
|   | 0,55               | 1,65               | ac    | 1,65ª)                   | ac | 1,65ª)   | ac     | 1,65ª)                     | ac                | 1,65ª)                                   | ac      | 1,65ª)                                   | ac      | 1,65ª)                                   | ac      |
|   | 0,63               | 1,65               | ac    | 1,97 <sup>a)</sup>       | ac | 1,97ª)   | ac     | 1,97 <sup>a)</sup>         | ac                | 1,97ª)                                   | ac      | 1,97ª)                                   | ac      | 1,97ª)                                   | ac      |
| Ш   | 0,75               | 1,65               | ac    | 2,14                     | ac | 2,63   | ac     | 3,06ª)                     | ac                | 3,06ª)                                   | ac      | 3,06ª)                                   | ac      | 3,06ª)                                   | ac      |
| t <sub>N,I</sub>  | 0,88               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,68ª)                     | -                 | 3,68ª)                                   | ac      | 3,68ª)                                   | ac      | 3,68ª)                                   | ac      |
| $N_{{\scriptscriptstyle R},{\scriptscriptstyle k}}$ for $t_{{\scriptscriptstyle N},{\scriptscriptstyle I}}$ | 1,00               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,92                       | -                 | 4,29ª)                                   | ac      | 4,29ª)                                   | ac      | 4,29ª)                                   | ac      |
| R,k f   | 1,13               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,92                       | -                 | 5,21                                     | -       | 5,43                                     | -       | 5,43                                     | -       |
| Z   | 1,25               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,92                       | -                 | 5,21                                     | -       | 6,19                                     | -       | 6,56                                     | -       |
|   | 1,50               | 1,65               | -     | 2,14                     | -  | - 2,63 - 3,92 - 5,21 - 6,19 - 6,56 -   |        |                            |                   |  |         |  |         |  | -       |
|   | 1,75               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,92                       | -                 | 5,21                                     | -       | 6,19                                     | -       | 6,56                                     | -       |
|   | 2,00               | 1,65               | -     | 2,14                     | -  | 2,63   | -      | 3,92                       | -                 | 5,21                                     | -       | 6,19                                     | -       | 6,56                                     | -       |

If component I is made of S320GD or S350GD, the values marked with  $^{a)}$  may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

CORONA 5.5XL #2+ TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|                           | ~03,50   | ~L   | 0<br>0 | ~8,00  | -04,50      | Com  | ener:<br>ner:<br>poner<br>poner | S<br>N<br>nt I: S<br>nt II: S<br>S   | tainl<br>one<br>2800<br>235<br>2800  | ess steel<br>ess steel<br>GD, S320<br>– EN 100<br>GD or S3<br>6,0 mm   | (1.4<br>)GD c<br>)25-2<br>20GE | 401) - E<br>or S3500<br>2  | SD - | 088<br>EN 1034   | 46 |
|---------------------------|--|--|--------|--|-------------|--|---------------------------------|--|--------------------------------------|--|--------------------------------|--|------|--|----|
|                           |  | 1,5  |        | 1,7  | 5           |  | imbe                            | bstructu<br>r substru<br>2,5   | uctur                                | -es no pe<br>3,0   |                                | rance de 3,5   |      | nined  | 0  |
|                           | , <sub>N,II</sub> =<br>=   | 1,5  | 0      | 1,7  | 5           | 2,0  | 0                               | - 2,5  | 0                                    | 3,0  | 0                              | 5,5  | 0    | 4,0  | 0  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,86 <sup>a)</sup><br>0,92 <sup>a)</sup><br>0,97 <sup>a)</sup><br>1,09<br>1,21<br>1,44<br>1,44<br>1,44 |        | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,84 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,14 <sup>a)</sup><br>1,24<br>1,34<br>1,53<br>1,53<br>1,53 | -<br>-<br>- | 0,82°)<br>0,83°)<br>0,86°)<br>1,09°)<br>1,31°)<br>1,39<br>1,47<br>1,63<br>1,63<br>1,63                   | -                               | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,26 <sup>a)</sup><br>1,66 <sup>a)</sup><br>1,70<br>1,74<br>1,81<br>1,81<br>1,81                 |                                      | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |                                | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |      | 0,82 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,86 <sup>a)</sup><br>1,43 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup><br>2,00 <sup>a)</sup> |    |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,45 <sup>a)</sup><br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   |        | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14   | -           | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63 | -                               | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>3,92<br>3,92<br>3,92<br>3,92<br>3,92<br>3,92<br>3,92 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,45 <sup>a</sup> )<br>1,65 <sup>a</sup> )<br>1,97 <sup>a</sup> )<br>3,06 <sup>a</sup> )<br>3,68 <sup>a</sup> )<br>4,29 <sup>a</sup> )<br>5,21<br>5,21<br>5,21<br>5,21<br>5,21<br>5,21                                   | -                              | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>5,63<br>5,63<br>5,63<br>5,63<br>5,63   |      | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>6,05<br>6,05<br>6,05<br>6,05   |    |

If component I is made of S320GD or S350GD, the values marked with  $^{\rm a)}$  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.

CORONA, HWH, MH, DC and LP

CORONA RXB 5.5XL #2P+ TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|                           | ~Ø9,50<br>~Ø4,10<br>~Ø5,50  | ~L   | 1,80     | ~8,00  | ~04,50                                    | <u>Mate</u><br>Faste   |               | S  | tainl                        | ess steel  | (1.4                    | 301) - F   | N 10  | 088  |    |
|---------------------------|---|--|----------|--|---|--|---------------|--|------------------------------|--|-------------------------|--|-------|--|----|
|                           | <u> </u>  | ~Ø13,8   | <u> </u> |  |   | Wash<br>Com  | ner:<br>ponei | S<br>N<br>nt I: S<br>nt II: S  | tainl<br>Ione<br>2800<br>235 | ESS steel<br>GD, S320<br>– EN 100<br>GD or S3  | (1.4)<br>)GD (<br>)25-2 | 401) - E<br>or S3500<br>2  | SD -  | 088<br>EN 1034   | 46 |
|                           |   |  | <u> </u> |  |   | Drilli   | ng ca         | pacity:  | Σt <sub>i</sub> ≤            | 6,0 mm   | I                       |  |       |  |    |
|                           | Timber si           For timber           t <sub>N,II</sub> =         1,50         1,75         2,00 |  |          |  |   |  |               |  |                              | es no pe   | erfom                   | rance de   | etern | nined  |    |
| t                         | N,II =  | 1,5  | 0        | 1,7  | 5   | 2,0  | 0             | 2,5  | 0                            | 3,0  | 0                       | 3,5  | 0     | 4,0  | 0  |
| М                         | <sub>t,nom</sub> =  |  |          |  |   |  |               | -  |                              |  |                         |  |       |  |    |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00                | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,49 <sup>a)</sup><br>0,57<br>0,64<br>0,79<br>0,79<br>0,79 |          | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,52 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,91<br>0,67<br>0,80<br>0,80 | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,55 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,65<br>0,70<br>0,80<br>0,80<br>0,80 |               | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,60 <sup>a)</sup><br>0,72 <sup>a)</sup><br>0,74<br>0,77<br>0,82<br>0,82<br>0,82                 |                              | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |                         | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |       | 0,34 <sup>a)</sup><br>0,37 <sup>a)</sup><br>0,42 <sup>a)</sup><br>0,66 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup><br>0,83 <sup>a)</sup> |    |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00                | 1,45 <sup>a)</sup><br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65<br>1,65   |          | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14<br>2,14             | -   | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63<br>2,63   |               | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>3,92<br>3,92<br>3,92<br>3,92<br>3,92<br>3,92<br>3,92 |                              | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,21<br>5,21<br>5,21<br>5,21<br>5,21<br>5,21   |                         | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>5,63<br>5,63<br>5,63<br>5,63   |       | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>6,05<br>6,05<br>6,05<br>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.

CORONA, HWH, MH, DC and LP

CORONA RXB 5.5XL #2P+ TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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|                           | -04,50   | ~L   | ~15.0   | ~04,90   | 1   | Materials  |   |  |   |  |   |                    |                                      |
|---------------------------|--|--|---|--|---|--|---|--|---|--|---|--------------------|--------------------------------------|
|                           |  | ~1.00<br>~Ø13.80   | -   |  |   | Fastener:<br>Washer:<br>Componer<br>Componer   | nt II:  | S280GD   | steel<br>S320<br>N 100<br>or S32                              | (1.4401)<br>GD or S3<br>25-2<br>20GD – E   | ) - EN<br>350GD                                     | 10088<br>- EN 103  | 346                                  |
|                           |  |  |   |  | Ľ   | Drilling ca  | pacity  | $2: 2t_i \leq 12$  | 2,5 mn  | n  |   |                    |                                      |
|                           |  |  | )   | 1  |   | <u>Fimber su</u><br>For timber   |   |  | no pe   | rfomranc   | e dete  | rmined             |                                      |
| t                         | $t_{N,II} = 4,00$ 5,00<br>$\eta_{t,nom} =$   |  |   |  | 0   | 6,0  | 0   | 8,0  | 0   | 10,  | 00  | 12,0               | 00                                   |
| М                         | <sub>t,nom</sub> =   |  |   |  |   |  |   | -  |   |  |   |                    |                                      |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 2,26 <sup>a)</sup><br>2,54 <sup>a)</sup><br>2,97 <sup>a)</sup><br>3,67 <sup>a)</sup><br>4,38 <sup>a)</sup><br>5,08 <sup>a)</sup><br>5,53<br>5,98<br>6,87<br>6,87<br>6,87 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a)</sup><br>2,54 <sup>a)</sup><br>2,97 <sup>a)</sup><br>3,67 <sup>a)</sup><br>4,38 <sup>a)</sup><br>5,08 <sup>a)</sup><br>5,53<br>5,98<br>6,87<br>6,87<br>6,87         | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a</sup> )<br>2,54 <sup>a</sup> )<br>2,97 <sup>a</sup> )<br>3,67 <sup>a</sup> )<br>4,38 <sup>a</sup> )<br>5,08 <sup>a</sup> )<br>5,53<br>5,98<br>6,87<br>6,87<br>6,87         | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a</sup> )<br>2,54 <sup>a</sup> )<br>2,97 <sup>a</sup> )<br>3,67 <sup>a</sup> )<br>4,38 <sup>a</sup> )<br>5,08 <sup>a</sup> )<br>5,53<br>5,98<br>6,87<br>6,87<br>6,87         | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>- | 2,26 <sup>a</sup> )<br>2,54 <sup>a</sup> )<br>2,97 <sup>a</sup> )<br>3,67 <sup>a</sup> )<br>4,38 <sup>a</sup> )<br>5,08 <sup>a</sup> )<br>5,53<br>5,98<br>6,87<br>6,87<br>6,87         | ac<br>ac<br>ac<br>ac<br>ac<br>a<br>a<br>a<br>-      | 2,26 <sup>a)</sup> | a<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>5,43<br>5,74<br>5,74<br>5,74<br>5,74<br>5,74               | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac            | 1,45 <sup>a)</sup><br>1,65 <sup>a)</sup><br>1,97 <sup>a)</sup><br>3,06 <sup>a)</sup><br>3,68 <sup>a)</sup><br>4,29 <sup>a)</sup><br>6,56<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac      | 1,45 <sup>a</sup> )<br>1,65 <sup>a</sup> )<br>1,97 <sup>a</sup> )<br>3,06 <sup>a</sup> )<br>3,68 <sup>a</sup> )<br>4,29 <sup>a</sup> )<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac      | 1,45 <sup>a</sup> )<br>1,65 <sup>a</sup> )<br>1,97 <sup>a</sup> )<br>3,06 <sup>a</sup> )<br>3,68 <sup>a</sup> )<br>4,29 <sup>a</sup> )<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56 | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>-       | 1,45 <sup>a</sup> )<br>1,65 <sup>a</sup> )<br>1,97 <sup>a</sup> )<br>3,06 <sup>a</sup> )<br>3,68 <sup>a</sup> )<br>4,29 <sup>a</sup> )<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56<br>6,56 | ас<br>ас<br>ас<br>ас<br>ас<br>а<br>а<br>а<br>а<br>- | 1,45 <sup>a)</sup> | a<br>-<br>-<br>-<br>-<br>-<br>-<br>- |

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

CORONA RXB 5.5XL #5 TX20 EPDM-9,5B with undercut, mushroom head with TX drive system and EPDM seal ring

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English translation prepared by DIBt



| 06'20-                    | Compone<br>Drilling ca<br><u>Timber si</u><br>For timbe                              | ent I:<br>ent II:<br>apacity:<br>ubstruct<br>er subst                            | Stainles<br>Aluminiu<br>S280GD<br>Structur<br>$\Sigma t_i \le 2$<br><u>sures</u><br>ructures | s steel (1.4301) - EN 10088<br>s steel (1.4401) - EN 10088<br>Jm (EN AW-5052-H32), t = 0,8 mm<br>o, S320GD or S350GD - EN 10346<br>ral timber - EN 14081<br>x x 1,25 mm<br>s perfomrance determined with<br>r $ _{ef} \ge 24 mm$ |
|---------------------------|--|--|--|--|
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 |  | Bearing resistance of component I, $V_{R,I,k}$   |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,32<br>1,35<br>1,40<br>1,92<br>2,29<br>2,66<br>2,96<br>3,25<br>-<br>-<br>-<br>- | Pull-through resistance of component I, N <sub>R,I,k</sub>                                   |  |

The values listed above are valid for component I. For component II see Annex 2.

CORONA, HWH, MH, DC and LP

LP 4.8/5.5XL #1 TX20 M-ALU-14B for timber substructures with countersunk head with TX drive system and seal washer  $\geq \emptyset$ 14 mm

Annex 34

electronic copy of the eta by dibt: eta-10/0021

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English translation prepared by DIBt



| ~L                        |  |   |  |  |  |  | Materials   |  |  |  |   |  |   |  |   |  |
|---------------------------|--|---|--|--|--|--|---|--|--|--|---|--|---|--|---|--|
|                           |  |   |  |  |  | Wash<br>Com  | 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         Stainless steel (1.4401) - EN 10088         Component I:       S280GD, S320GD or S350GD - EN 10346         Component II:       S235 - EN 10025-2  |  |  |  |   |  |   |  | 46  |  |
| ~Ø14,00                   |  |   |  |  |  | Drilli   | S280GD or S320GD – EN 10346<br>Drilling capacity: $\Sigma t_i \leq 6,0$ mm  |  |  |  |   |  |   |  |   |  |
| ~Ø10,00 <b>-</b>          |  |   |  |  |  |  | $\sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i$ |  |  |  |   |  |   |  |   |  |
|                           |  |   |  |  |  |  | <u>Timber substructures</u><br>For timber substructures no perfomrance determined   |  |  |  |   |  |   |  |   |  |
| $t_{_{N,II}} =$           |  | 1,50  |  | 1,75   |  | 2,00   |   | 2,50   |  | 3,00   |   | 3,50   |   | 4,00   |   |  |
| М                         | <sub>t,nom</sub> =   |   |  |  |  |  |   | -  |  |  |   |  |   |  |   |  |
| $V_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,89 <sup>a)</sup><br>2,00<br>2,18<br>2,46<br>2,75<br>3,03<br>3,40<br>3,77<br>3,77<br>3,77<br>3,77                            | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,05<br>2,29<br>2,69<br>2,94<br>3,19<br>3,56<br>3,93<br>3,93<br>3,93<br>3,93 <sup>a)</sup>               | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,13<br>3,34<br>3,71<br>4,09<br>4,09<br>4,09<br>4,09         | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,65<br>4,03<br>4,40<br>4,40<br>4,40<br>4,40       | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,34<br>4,72<br>4,72<br>4,72<br>4,72                             | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,66<br>5,03<br>5,03<br>5,03<br>5,03                     | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>- | 1,89 <sup>a)</sup><br>2,09 <sup>a)</sup><br>2,40 <sup>a)</sup><br>2,91 <sup>a)</sup><br>3,44<br>3,96<br>4,66<br>5,35<br>5,35<br>5,35<br>5,35                             | ac<br>ac<br>ac<br>ac<br>ac<br>ac<br>a<br>-<br>- |  |
| $N_{R,k}$ for $t_{N,I} =$ | 0,50<br>0,55<br>0,63<br>0,75<br>0,88<br>1,00<br>1,13<br>1,25<br>1,50<br>1,75<br>2,00 | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>1,77<br>1,77<br>1,77<br>1,77<br>1,77<br>1,77<br>1,77<br>1,7 | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-           | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,18<br>2,18<br>2,18<br>2,18<br>2,18<br>2,18<br>2,18<br>2,18 | ac<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,58<br>2,58<br>2,58<br>2,58<br>2,58<br>2,58<br>2,58<br>2,58 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-<br>-   | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,57<br>3,57<br>3,57<br>3,57<br>3,57 | ac<br>ac<br>ac<br>-<br>-<br>-<br>-           | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73<br>4,44<br>4,44<br>4,44<br>4,44 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73<br>4,44<br>4,44<br>4,44 | ac<br>ac<br>ac<br>ac<br>ac<br>-<br>-<br>-<br>-      | 1,37 <sup>a)</sup><br>1,45 <sup>a)</sup><br>1,58 <sup>a)</sup><br>2,36 <sup>a)</sup><br>2,69 <sup>a)</sup><br>3,01 <sup>a)</sup><br>3,73<br>4,44<br>4,44<br>4,44<br>4,44 | ас<br>ас<br>ас<br>ас<br>ас<br>ас<br>а<br>-<br>- |  |

If component I is made of S320GD or S350GD, the values marked with  $^{a)}$  may be increased by 8.3%.

CORONA, HWH, MH, DC and LP

HWH RXB 4.8XL #2+ HX8 RX-14G with hexagon head and seal washer  $\ge Ø14$  mm