

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-15/0011**  
**of 29 January 2015**

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Capatect Schraubdübel Rondelle

Product family  
to which the construction product belongs

Screwed-in anchor for fixing of external thermal insulation  
composite systems with rendering in concrete, masonry,  
lightweight aggregate concrete and autoclaved aerated  
concrete

Manufacturer

Synthesa Chemie Gesellschaft m.b.H  
Dirnbergerstraße 29-31  
4320 PERG  
ÖSTERREICH

Manufacturing plant

DAW Herstellwerk 10182

This European Technical Assessment  
contains

20 pages including 3 annexes which form an integral part  
of this assessment

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

Guideline for European technical approval of "Plastic  
anchors for fixing of external thermal insulation composite  
systems with rendering", ETAG 014,  
edition February 2011,  
used as European Assessment Document (EAD)  
according to Article 66 Paragraph 3 of Regulation (EU)  
No 305/2011.

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## Specific Part

### 1 Technical description of the product

The screwed-in anchor Capatect Schraubdübel Rondelle consists of a plastic part made of polyethylene and an accompanying specific screw of galvanized steel or stainless steel and an anchor cap made of polystyrene (for mounting the anchor on the surface of the insulating material) or an insulation cover made of polystyrene or mineral wool (for deep mounting of the anchor in the insulating material).

For mounting on the surface the anchor may additionally be combined with the anchor plates SBL 140 plus, VT 90 and VT 2G made of polyamide.

The product description is given in Annex A.

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

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

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

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

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

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

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

Not applicable.

#### 3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances there may be requirements (e.g. transposed European legislation and national laws, regulations and administrative provisions) applicable to the products falling within the scope of this European Technical Assessment. In order to meet the provisions of Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

#### 3.4 Safety in use (BWR 4)

| Essential characteristic    | Performance |
|-----------------------------|-------------|
| Characteristic resistance   | See Annex C |
| Edge distances and spacing  | See Annex B |
| Point thermal transmittance | See Annex C |
| Plate stiffness             | See Annex C |
| Displacements               | See Annex C |

English translation prepared by DIBt

**3.5 Protection against noise (BWR 5)**

Not applicable.

**3.6 Energy economy and heat retention (BWR 6)**

Not applicable.

**3.7 Sustainable use of natural resources (BWR 7)**

The sustainable use of natural resources was not investigated.

**3.8 General aspects**

The verification of durability is part of testing the essential characteristics. Durability is only ensured if the specifications of intended use according to Annex B are taken into account.

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

According to Decision 97/463/EC of the Commission of 27 June 1997 (Official Journal of the European Communities L 198 of 25.07.1997, p. 31–32) the system of assessment and verification of constancy of performance (AVCP) (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

| Product   | Intended use   | Level or class | System |
|---|--|----------------|--------|
| Plastic anchors for use in concrete and masonry | For use in systems, such as façade systems, for fixing or supporting elements which contribute to the stability of the systems | —              | 2+     |

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

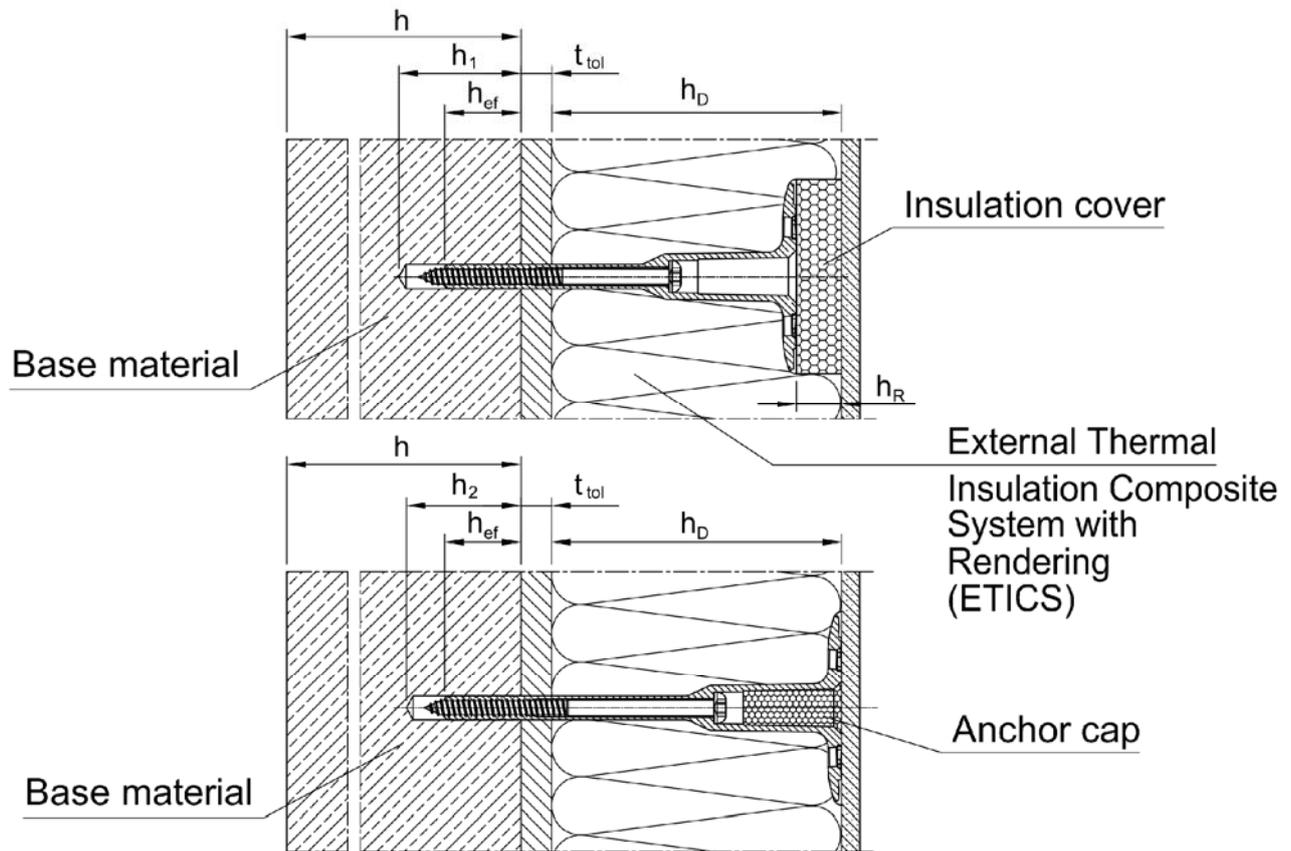
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 29 January 2015 by Deutsches Institut für Bautechnik.

Andreas Kummerow  
p. p. Head of Department

*beglaubigt:*  
Ziegler

### Capatect Schraubdübel Rondelle



#### Intended use

- Anchorage of ETICS in concrete and masonry
- Anchorage of ETICS in autoclaved aerated concrete

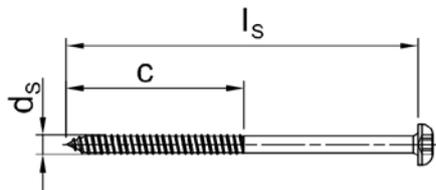
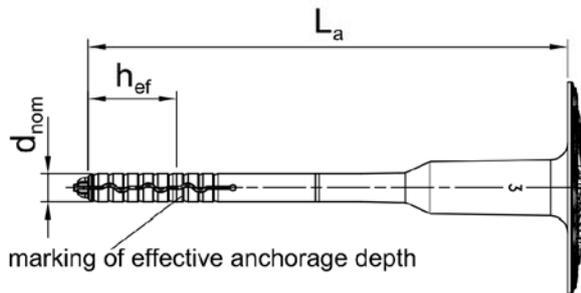
Legend:  $h_D$  = thickness of insulation material  
 $h_{ef}$  = effective anchorage depth  
 $h$  = thickness of member (wall)  
 $h_{1,2}$  = depth of drilled hole to deepest point  
 $h_R$  = thickness of insulation cover  
 $t_{tol}$  = thickness of equalizing layer or non-load-bearing coating

Capatect Schraubdübel Rondelle

Product description  
Installed condition

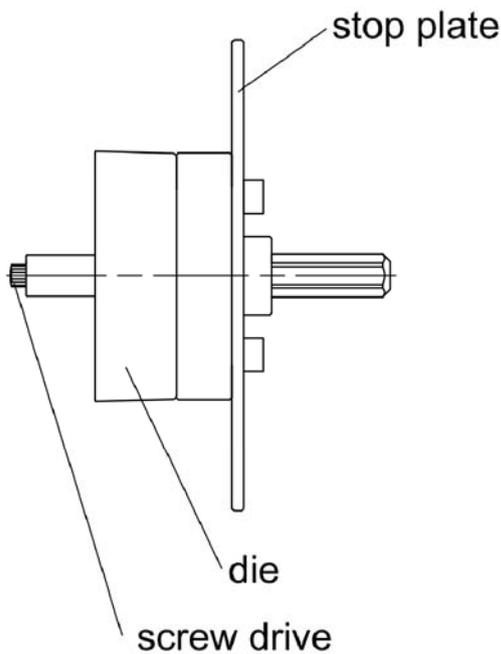
Annex A 1

### Components for deep mounting in use category A, B, C, D

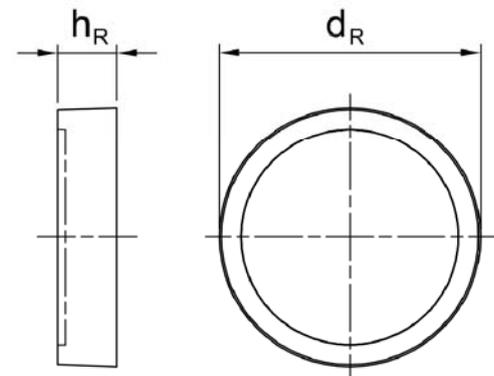


Marking:  
Identifying mark (Capatect)  
Anchor type (Schraubdübel Rondelle Ø8)  
Length of anchor (e.g. L295)  
Use category (A,B,C,D, E)

### CSR-Installation tool



### Insulation cover



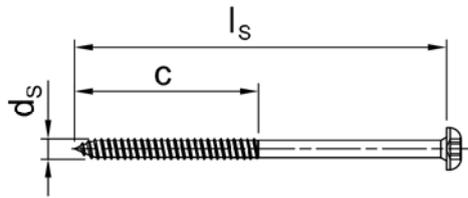
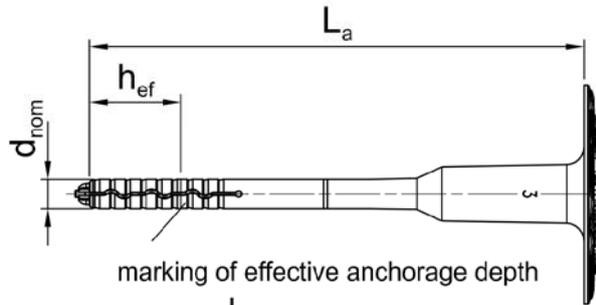
### Capatect Schraubdübel Rondelle

#### Product description

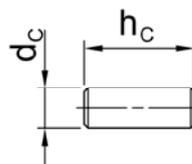
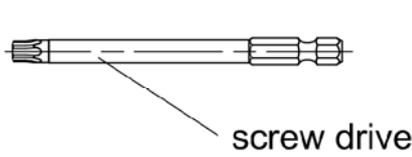
Components for deep mounting, use category A, B, C, D – Capatect Schraubdübel Rondelle, Installation tool

Annex A 2

Components for mounting on the surface in use category A, B, C, D



Marking:  
Identifying mark (Capatect)  
Anchor type (Schraubdübel Rondelle Ø8)  
Length of anchor (e.g. L295)  
Use category (A,B,C,D, E)



Anchor cap (to lock up the anchor in case of mounting on the surface)

Table A1: Dimensions

| Anchor Typ                     | Colour | Anchor sleeve    |                 |                    |                    | Accompanying Specific screw |    |                    |                    | Anchor cap     |                | Insulation cover |                |
|--------------------------------|--------|------------------|-----------------|--------------------|--------------------|-----------------------------|----|--------------------|--------------------|----------------|----------------|------------------|----------------|
|                                |        | d <sub>nom</sub> | h <sub>ef</sub> | min L <sub>a</sub> | max L <sub>a</sub> | d <sub>s</sub>              | c  | min l <sub>s</sub> | max l <sub>s</sub> | h <sub>c</sub> | d <sub>c</sub> | h <sub>R</sub>   | d <sub>R</sub> |
| Capatect Schraubdübel Rondelle | orange | 8                | 25              | 115                | 295                | 5,5                         | 60 | 78                 | 258                | 23             | 15             | 15               | 66             |

Determination of maximum thickness of insulation h<sub>D</sub> for Capatect Schraubdübel Rondelle:

$$h_D = L_a - t_{tol} - h_{ef} \quad (L_a = \text{e.g. } 115; t_{tol} = 10)$$

$$\text{e.g. } h_D = 115 - 10 - 25$$

$$h_{Dmax.} = 80$$

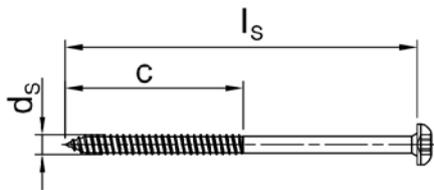
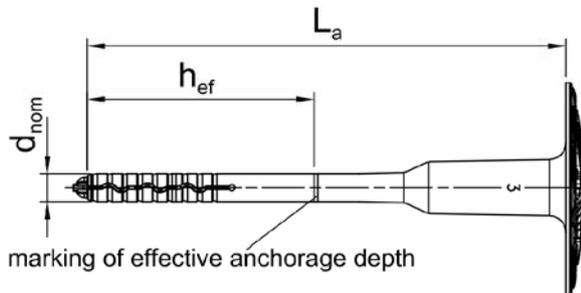
Capatect Schraubdübel Rondelle

Product description

Components for mounting on the surface, use category A, B, C, D – Capatect Schraubdübel Rondelle, Installation tool, Dimensions

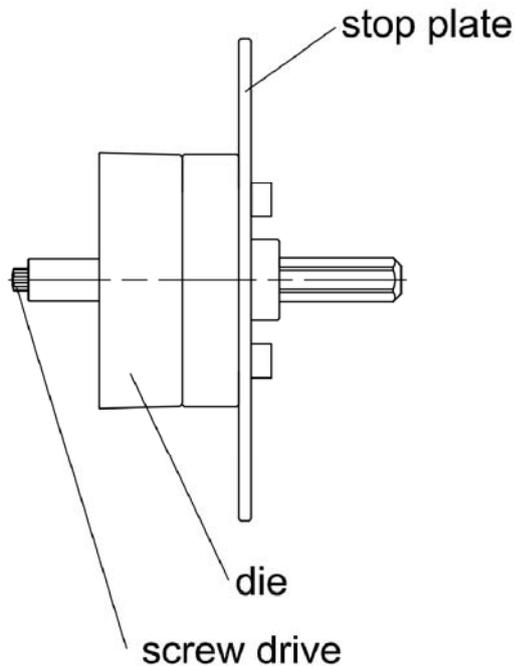
Annex A 3

### Components for deep mounting in use category E

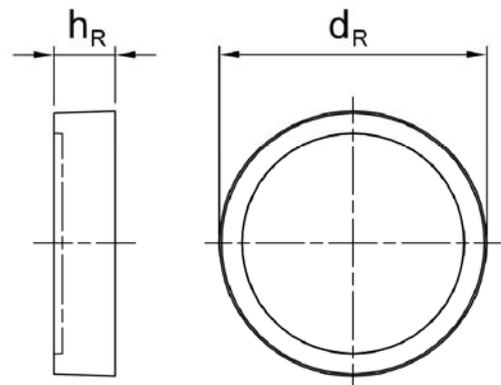


Marking:  
Identifying mark (Capatect)  
Anchor type (Schraubdübel Rondelle  $\text{Ø}8$ )  
Length of anchor (e.g. L295)  
Use category (A,B,C,D, E)

### CSR-Installation tool



### Insulation cover



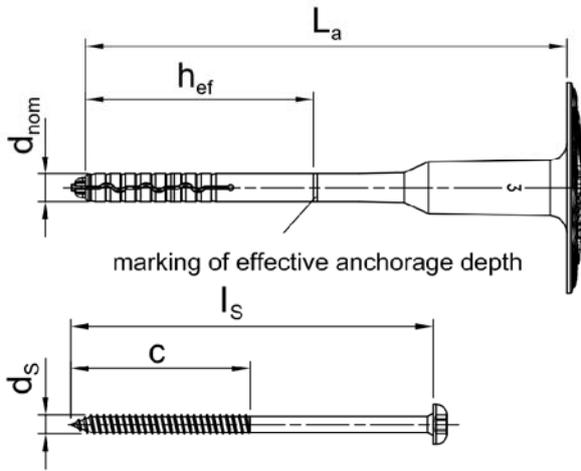
### Capatect Schraubdübel Rondelle

#### Product description

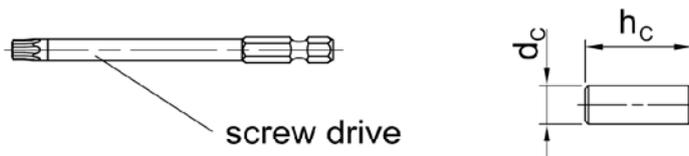
Components for deep mounting, use category E – Capatect Schraubdübel Rondelle, Installation tool

Annex A 4

### Components for mounting on the surface in use category E



Marking:  
Identifying mark (Capatect)  
Anchor type (Schraubdübel Rondelle Ø8)  
Length of anchor (e.g. L295)  
Use category (A,B,C,D, E)



Anchor cap (to lock up the anchor in case of mounting on the surface)

**Table A2: Dimensions**

| Anchor Type                    | Colour | Anchor sleeve |          |           |           | Accompanying Specific screw |     |           |           | Anchor cap |       | Insulation cover |       |
|--------------------------------|--------|---------------|----------|-----------|-----------|-----------------------------|-----|-----------|-----------|------------|-------|------------------|-------|
|                                |        | $d_{nom}$     | $h_{ef}$ | min $L_a$ | max $L_a$ | $d_s$                       | $c$ | min $l_s$ | max $l_s$ | $h_c$      | $d_c$ | $h_R$            | $d_R$ |
| Capatect Schraubdübel Rondelle | orange | 8             | 65       | 115       | 295       | 5,5                         | 60  | 78        | 258       | 23         | 15    | 15               | 66    |

Determination of maximum thickness of insulation  $h_D$  for Capatect Schraubdübel Rondelle:

$$h_D = L_a - t_{tol} - h_{ef} \quad (L_a = \text{e.g. } 115; t_{tol} = 10)$$

$$\text{e.g. } h_D = 115 - 10 - 25$$

$$h_{Dmax.} = 80$$

#### Capatect Schraubdübel Rondelle

#### Product description

Components for mounting on the surface, use category E – Capatect Schraubdübel Rondelle, Installation tool, Dimensions

**Annex A 5**

**Table A3: Materials**

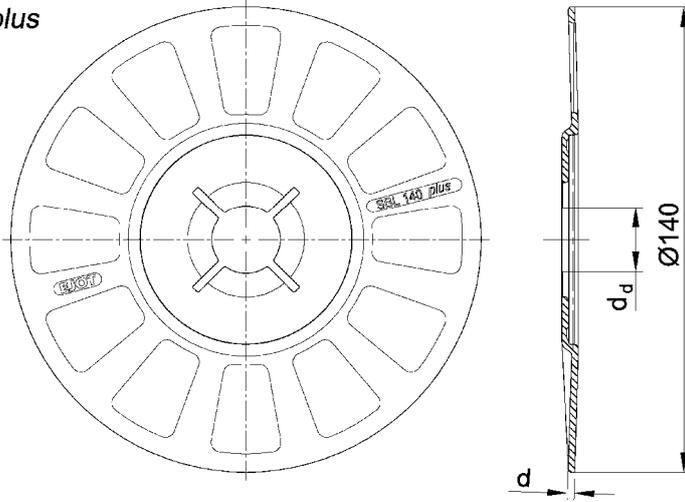
| Name                                 | Materials  |
|--------------------------------------|--|
| Anchor sleeve                        | Polyethylene, PE-HD, orange  |
| Plate in combination with the sleeve | Polyamide  |
| Insulation Cover                     | Polystyrene PS 20  |
|                                      | Mineral wool Typ HD  |
| Anchor cap                           | Polystyrene PS 30  |
| Specific screw                       | Steel, electrogalvanized $\geq 5 \mu\text{m}$ according to EN ISO 4042,<br>blue passivated                         |
|                                      | stainless steel, according to ISO 3506<br><br>material number 1.4401 or 1.4571<br>material number 1.4301 or 1.4567 |

**Capatect Schraubdübel Rondelle**

**Product description**  
Materials

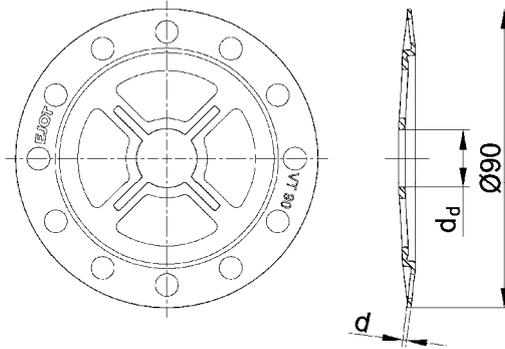
**Annex A 6**

SBL 140 plus



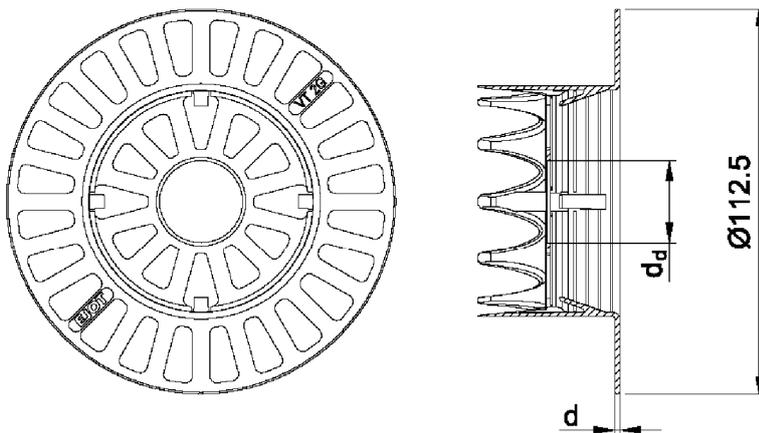
| SBL 140 plus |        |
|--------------|--------|
| colour       | nature |
| $d_d$ [mm]   | 20,0   |
| $d$ [mm]     | 2,0    |

VT 90



| VT 90      |        |
|------------|--------|
| colour     | nature |
| $d_d$ [mm] | 17,5   |
| $d$ [mm]   | 1,2    |

VT 2G



| VT 2G      |        |
|------------|--------|
| colour     | nature |
| $d_d$ [mm] | 24,0   |
| $d$ [mm]   | 1,5    |

**Capatect Schraubdübel Rondelle**

**Product description**

Plates in combination with Capatect Schraubdübel Rondelle

**Annex A 7**

### Specifications of intended use

**Anchorage subject to:**

- The anchor may only be used for transmission of wind suction loads and shall not be used for the transmission of dead loads of the thermal insulation composite system.

**Base materials:**

- Normal weight concrete (use category A) according to Annex C 1
- Solid masonry (use category B), according to Annex C 1
- Hollow or perforated masonry (use category C), according to Annex C 1
- Lightweight aggregate concrete (use category D), according to Annex C 1
- autoclaved aerated concrete (use category E), according to Annex C 1
- For other base materials of the use categories A, B, C, D or E the characteristic resistance of the anchor may be determined by job site tests according to ETAG 014 Edition February 2011, Annex D.

**Temperature Range:**

- 0°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C)

**Design:**

- The anchorages are designed in accordance with the ETAG 014 Edition February 2011 under the responsibility of an engineer experienced in anchorages and masonry work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings.
- Fasteners are only to be used for multiple fixings of thermal insulation composite systems.

**Installation:**

- Hole drilling by the drill modes according to Annex C 1
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Installation temperature from 0°C to +40°C
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks

**Capatect Schraubdübel Rondelle**

**Intended use**  
Specifications

**Annex B 1**

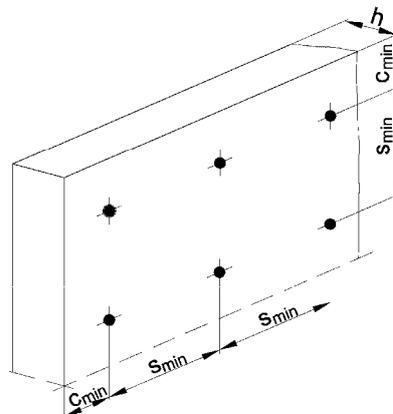
**Table B1: Installation parameters**

| Anchor type                            |                  | Capatect Schraubdübel Rondelle |      |
|--|------------------|--------------------------------|------|
|  |                  | Use category                   |      |
|  |                  | A B C D                        | E    |
| Drill hole diameter                    | $d_0$ [mm]       | 8                              | 8    |
| Cutting diameter of drill bit          | $d_{cut}$ [mm] ≤ | 8,45                           | 8,45 |
| Depth of drilled hole to deepest point |                  |                                |      |
| - deep mounting                        | $h_1$ [mm] ≥     | 50                             | 90   |
| - mounting on the surface              | $h_2$ [mm] ≥     | 35                             | 75   |
| Effective anchorage depth              | $h_{ef}$ [mm] ≥  | 25                             | 65   |

**Table B2: Anchor distances and dimensions of members**

| Anchor type                     |                     | Capatect Schraubdübel Rondelle             |     |
|---------------------------------|---------------------|--|-----|
|                                 |                     | Use category                               |     |
|                                 |                     | A B C D                                    | E   |
| Minimum allowable spacing       | $s_{min} \geq$ [mm] | 100  | 100 |
| Minimum allowable edge distance | $c_{min} \geq$ [mm] | 100  | 100 |
| Minimum thickness of member     |                     |  |     |
| - deep mounting                 | $h \geq$ [mm]       | 100<br>40<br>(only thin skins of concrete) | 120 |
| - mounting on the surface       | $h \geq$ [mm]       | 100<br>40<br>(only thin skins of concrete) | 120 |

Scheme of distances and spacing



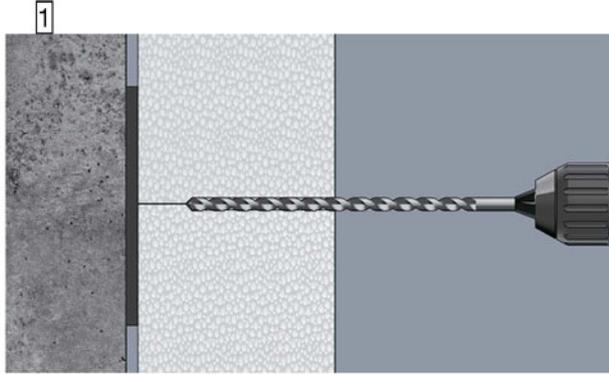
**Capatect Schraubdübel Rondelle**

**Intended use**

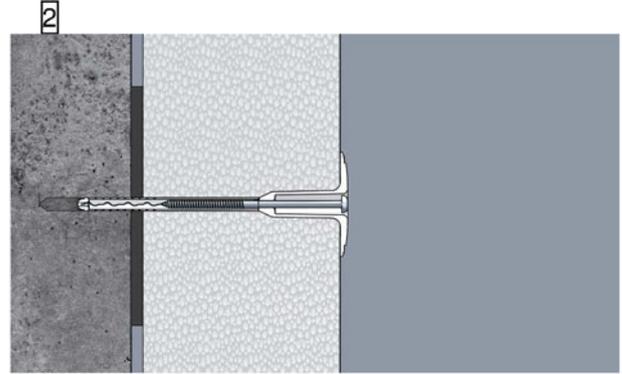
Installations parameters,  
Edge distances and spacings

**Annex B 2**

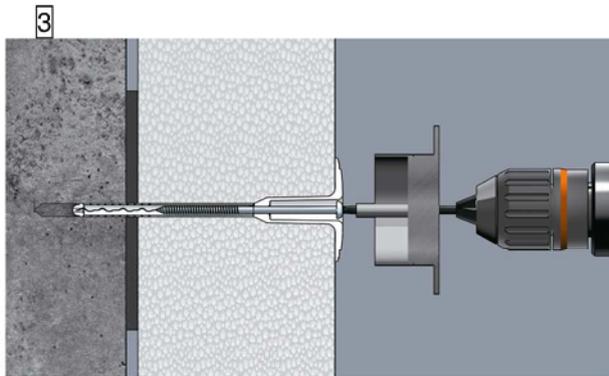
### Installation instructions



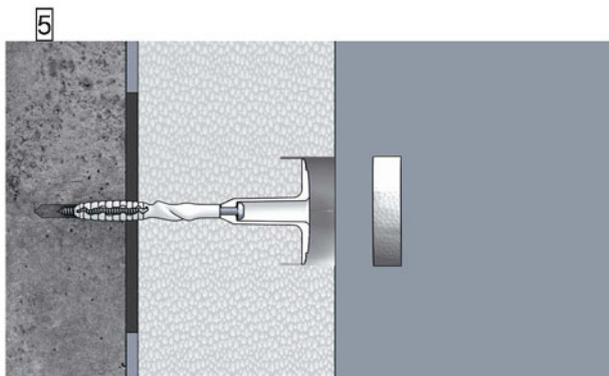
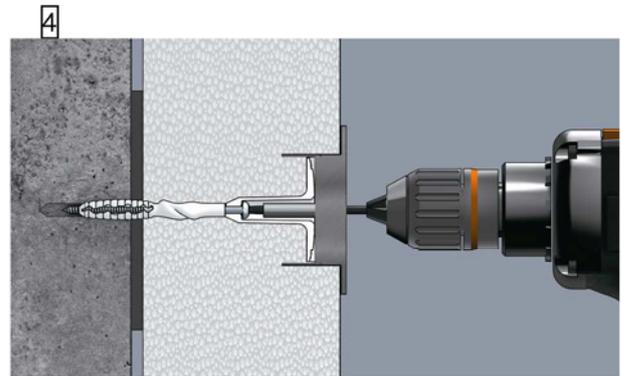
Drill the hole



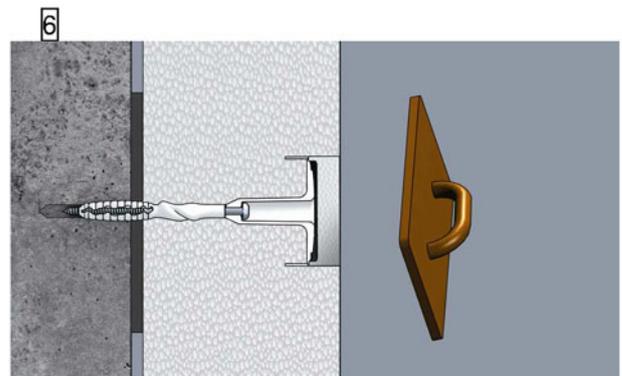
Insert the anchor



Countersunk installation with CSR-Installation tool



Insert the cap with the help of a float

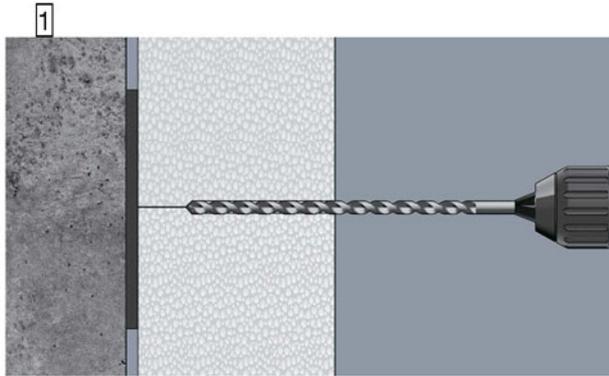


Capatect Schraubdübel Rondelle

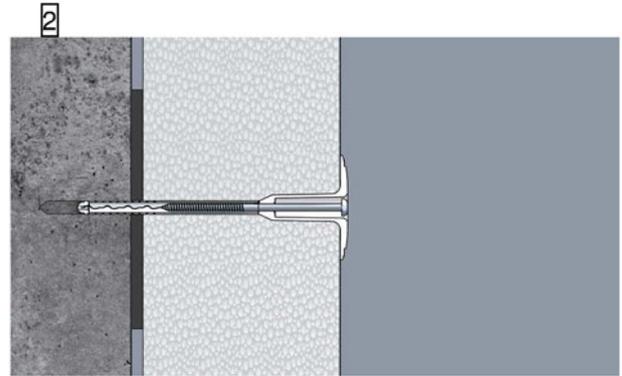
Intendend use  
Countersunk installation with a cap

Annex B 3

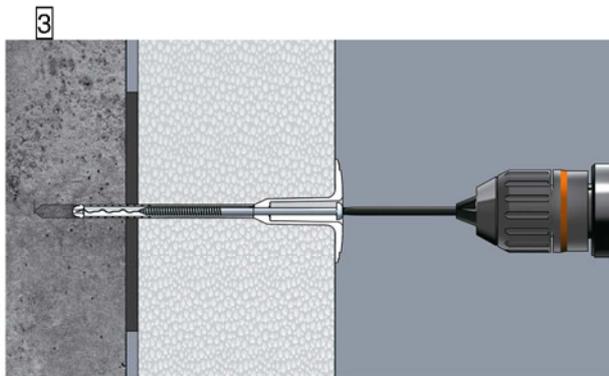
### Installation instructions



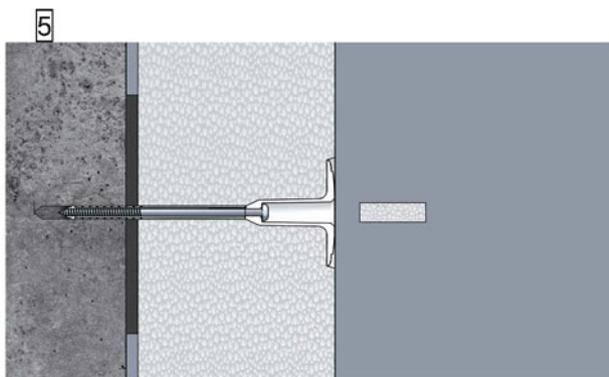
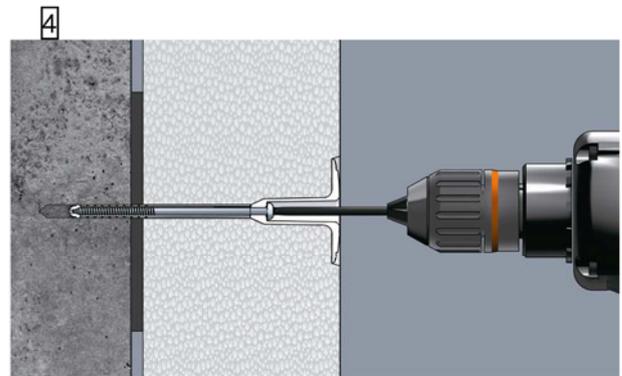
Drill the hole



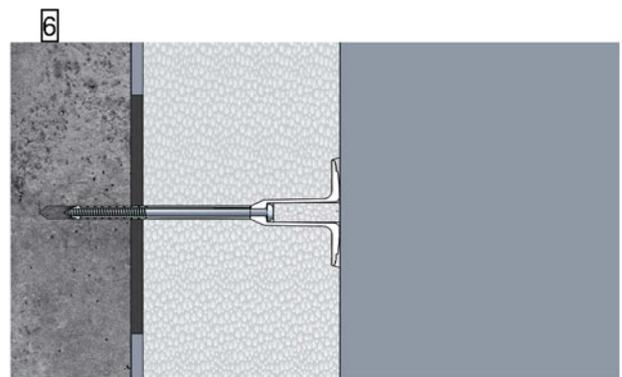
Insert the anchor



Surface fixed installation with a standard bit



Insert the plug

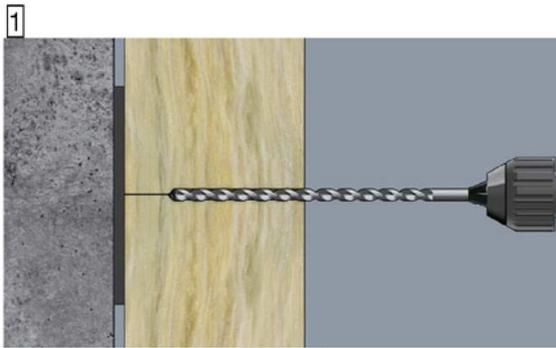


Capatect Schraubdübel Rondelle

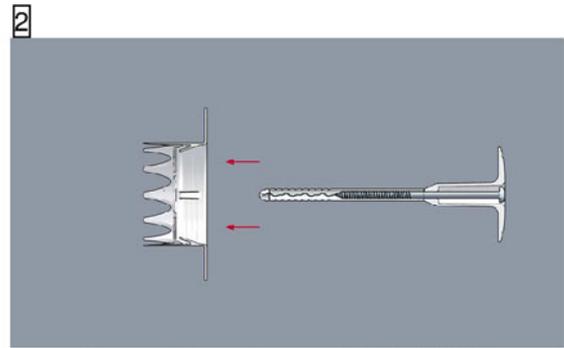
Intendend use  
Surface fixed installation with a plug

Annex B 4

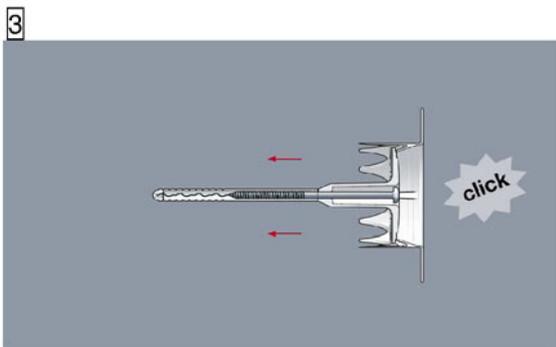
### Installation instructions



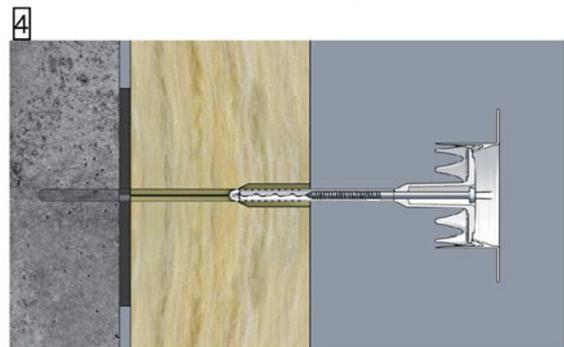
Drill the hole



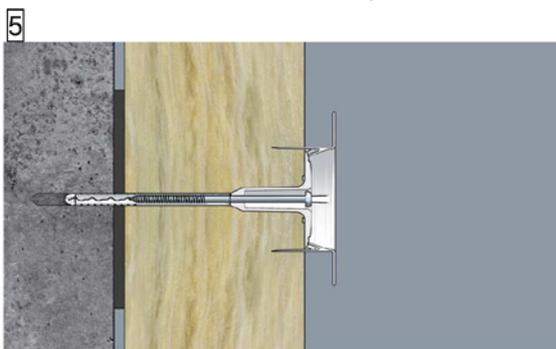
Assemble anchor and plate VT 2G



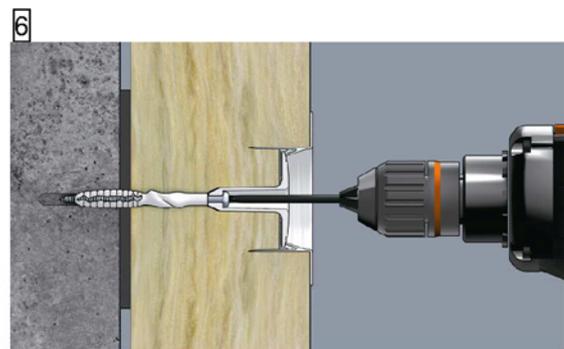
Assemble anchor and plate VT 2G



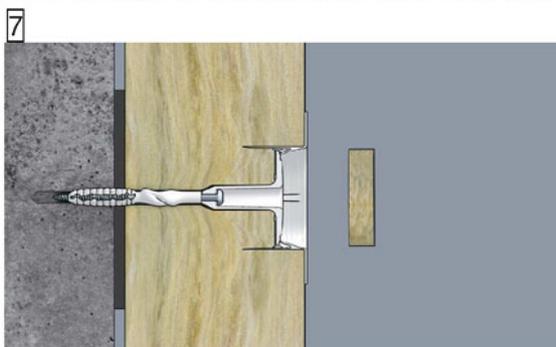
Insert the anchor into the drill hole



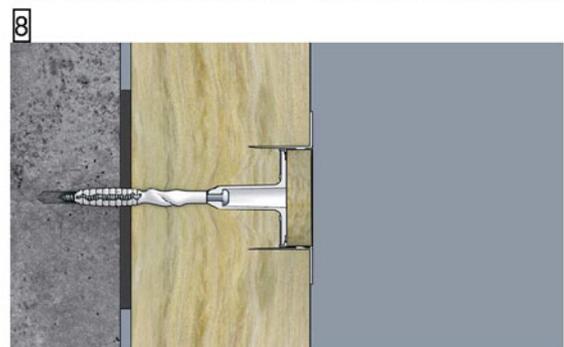
Drive through VT 2G until plate rests on surface



Mounting on the surface with an installation bit



Insert the cap



Installed anchor

**Capatect Schraubdübel Rondelle**

**Intendend use**  
Installation with plate VT 2G and cap

**Annex B 5**

**Table C1: Characteristic resistance to tension loads  $N_{Rk}$  [kN] in concrete and masonry for a single anchor**

| Anchor type<br>Capatect Schraubdübel Rondelle  |   |   |  |              |                   |
|--|---|---|--|--------------|-------------------|
| Base materials   | Bulk density class<br>$\rho$<br>[kg/dm <sup>3</sup> ] | minimum compressive strength<br>$f_b$<br>[N/mm <sup>2</sup> ] | General remarks  | Drill method | $N_{Rk}$<br>[kN]  |
| Concrete C12/15 – C50/60   |   |   | EN 206-1   | hammer       | 1,5               |
| Thin concrete members<br>(e.g. weather resistant skin)<br>C16/20 – C50/60                |   |   | Thickness of the thin skin:<br>100 mm > h ≥ 40 mm  | hammer       | 1,5               |
| Clay brick, Mz<br>DIN 105-100:2012-01 /<br>EN 771-1:2011-07                              | ≥ 1,8   | 12  | Vertically perforation up to<br>15 %   | hammer       | 1,5               |
| Sand-lime solid brick, KS<br>DIN V 106:2005-10 /<br>EN 771-2:2011-07                     | ≥ 1,8   | 12  | Vertically perforation up to<br>15 %   | hammer       | 1,5               |
| Lightweight concrete solid<br>block, V<br>DIN V 18152-100:2005-10 /<br>EN 771-3:2011-07  | ≥ 0,9   | 4   | Proportion of hole up to<br>10% maximum extension<br>of hole: length = 110mm;<br>wide = 45mm | rotary       | 0,6               |
| Vertically perforated clay<br>brick, HLz<br>DIN 105-100:2012-01 /<br>EN 771-1:2011-07    | ≥ 1,2   | 12  | Vertically perforation more<br>than 15% and less than<br>50 %                                | rotary       | 1,2               |
| Sand-lime perforated brick,<br>KSL DIN V 106:2005-10 /<br>EN 771-2:2011-07               | ≥ 1,6   | 12  | Vertically perforation up to<br>15 %   | rotary       | 1,5 <sup>1)</sup> |
| Lightweight concrete hollow<br>block, Hbl<br>DIN 18151-100:2005-10 /<br>EN 771-3:2011-07 | ≥ 0,5   | 2   | see Annex C 4  | rotary       | 0,6               |
| Prefabricated reinforced<br>components of lightweight<br>aggregate concrete (LAC)        | ≥ 1,8   | 4   | EN 1520: 2002 + AC:<br>2003  | hammer       | 0,9               |
| Autoclaved aerated<br>concrete<br>DIN V 4165-100:2005-10 /<br>EN 771-4:2011-07           | ≥ 0,4   | 2   | PP/PPE   | rotary       | 0,75              |
| Vertically perforated clay<br>brick, Hlz 25x38x23,5                                      |   |   | see Annex C 4  | rotary       | 0,75              |

<sup>1)</sup> The value applies only for outer web thickness ≥ 20 mm; otherwise the characteristic resistance shall be determined by job site pull-out tests.

**Capatect Schraubdübel Rondelle**

**Performances**  
Characteristic resistance

**Annex C 1**

**Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2007-06**

| Anchor type  | Insulation thickness<br>$H_D$<br>[mm] | point thermal<br>transmittance<br>$\alpha$<br>[W/K] |
|--|---------------------------------------|---|
| Capatect Schraubdübel Rondelle<br>- mounted on the surface with<br>anchor cap    | 60 - 420                              | 0,002   |
| Capatect Schraubdübel Rondelle<br>- mounted countersunk with<br>insulation cover | 80 – 420                              | 0,002   |

**Table C3: Plate stiffness according EOTA Technical Report TR 026:2007-06**

| Anchor type                    | diameter<br>of the anchor plate<br>[mm] | load resistance<br>of the anchor plate<br>[kN] | plate stiffness<br>[kN/mm] |
|--------------------------------|---|--|----------------------------|
| Capatect Schraubdübel Rondelle | 60                                      | 2,08   | 0,6                        |

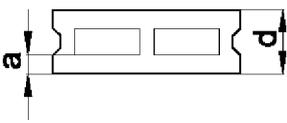
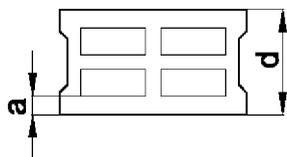
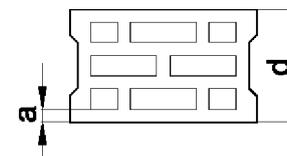
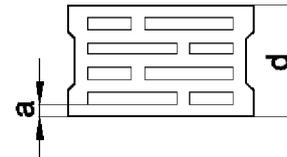
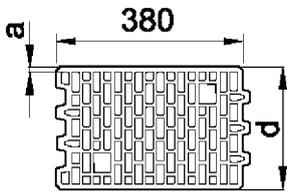
**Capatect Schraubdübel Rondelle**

**Performances**  
Point thermal transmittance,  
Plate stiffness

**Annex C 2**

| <b>Table C4: Displacements</b>   |   |  |                           |   |
|--|---|--|---------------------------|---|
| Base material  | Bulk density class<br>$\rho$<br>[kg/dm <sup>3</sup> ] | min. compressive strength<br>$f_b$<br>[N/mm <sup>2</sup> ] | Tension load<br>N<br>[kN] | Displacements<br>$\delta(N)$<br>[kN/mm] |
| Concrete C12/15 – C50/60<br>(EN 206-1)   |   |  | 0,50                      | 0,7                                     |
| Concrete C12/15 – C50/60<br>thin members<br>100 mm > h ≥ 40 mm                             |   |  | 0,50                      | 0,7                                     |
| Clay brick, Mz<br>(DIN 105-100:2012-01 /<br>EN 771-1:2011-07)                              | ≥ 1,8   | 12   | 0,50                      | 0,7                                     |
| Sand-lime solid brick, KS<br>(DIN V 106:2005-10 /<br>EN 771-2:2011-07)                     | ≥ 1,8   | 12   | 0,50                      | 0,7                                     |
| Lightweight concrete solid block, V<br>(DIN V 18152-100:2005-10 /<br>EN 771-3:2011-07)     | ≥ 0,9   | 4  | 0,20                      | 0,7                                     |
| Vertically perforated clay brick, HLz<br>(DIN 105-100:2012-01 /<br>EN 771-1:2011-07)       | ≥ 1,2   | 12   | 0,40                      | 0,7                                     |
| Sand-lime perforated brick, KSL<br>(DIN V 106:2005-10 /<br>EN 771-2:2011-07)               | ≥ 1,6   | 12   | 0,50                      | 0,7                                     |
| Lightweight concrete hollow block,<br>Hbl<br>(DIN 18151-100:2005-10 /<br>EN 771-3:2011-07) | ≥ 0,5   | 2  | 0,20                      | 0,7                                     |
| Prefabricated reinforced<br>components of lightweight<br>aggregate concrete (LAC)          | ≥ 1,8   | 4  | 0,30                      | 0,7                                     |
| Autoclaved aerated concrete<br>P2 – P7<br>(DIN V 4165-100:2005-10 /<br>EN 771-4:2011-07)   | ≥ 0,4   | 2  | 0,25                      | 0,7                                     |
| Vertically perforated clay brick,<br>Hlz 250mm x 380mm x 235mm                             |   |  | 0,25                      | 0,7                                     |
| <b>Capatect Schraubdübel Rondelle</b>  |   |  |                           | <b>Annex C 3</b>                        |
| <b>Performances</b><br>Displacements   |   |  |                           |   |

**Table C5: Assignment type of anchor for lightweight concrete hollow blocks according to DIN V 18 151-100 and vertically perforated clay brick HLz 250x380x235**

| Geometry   | Thickness<br>d<br>[mm] | Outer web in<br>longitudinal<br>direction<br>a<br>[mm] | Anchor type |
|--|------------------------|--|-------------|
|                       | 175                    | 50   | ●           |
|                       | 240<br>300             | 50   | ●           |
|  | 175                    | 35   | ●           |
|                     | 240<br>300<br>365      | 35   | ●           |
|                     | 240<br>300<br>365      | 30   | ●           |
| HLz 250x380x235<br> | 250                    | 10,3   | ●           |

Anchor shall be placed in the brick in such way, that the spreading part of the expansion sleeve is located in the outer web.

**Capatect Schraubdübel Rondelle**

**Performances**

Assignment type of anchor for lightweight concrete hollow blocks  
HLz 250x380x235

**Annex C 4**