

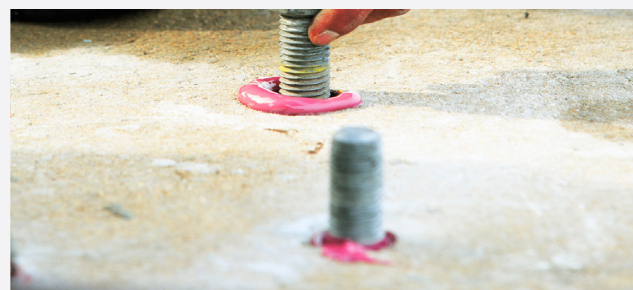
# SMCH1 EP



## CHEMICAL RESIN PURE EPOXY “XTREME” S-IRE

“Extreme Performance” injection mortar with ETA approval for use in cracked concrete and post-installed rebar connections.

### TYPE S-IRE



### ADVANTAGES

- Variable anchorage depths from 4x to 20x anchor diameter allow high flexibility in design and installation.
- High bond strengths and low shrinkage allow very high loads in both cracked and un-cracked concrete.
- Approved for very small edge distances and spacing, overhead applications, flooded holes and drilling by percussion or diamant drilling.

### FUNCTIONING

- Read the installation instructions carefully.
- Resin and hardener are stored in two separate chambers and are not mixed and activated until extrusion through the static mixer.
- Partially used cartridges can be reused, simply by changing the static mixer.

## CHEMISCHE MORTEL PURE EPOXY “XTREME” S-IRE

“Extreme Performance” chemische mortel met goedkeuring voor gebruik in gescheurd beton en achteraf aangebrachte wapeningsstaven.

### VOORDELEN

- Variabele verankeringsdieptes van 4 tot 20 keer draadstangdiameter.
- Zeer hoge uittrekwaarden met minimale krimp in zowel niet-gescheurde als gescheurde beton.
- Gekeurd voor kleine afstanden, bovenhoofdse toepassing, hamer-en diamantboren en watergevulde boorgaten.

### TOEPASSING

- Lees aandachtig de gebruiksaanwijzing op de verpakking.
- Hars en verharder worden bewaard in 2 aparte kamers in de koker. De 2 componenten worden gemixt door middel van de mengtuit. Direct bruikbaar.
- Gedeeltelijk gebruikte kokers kunnen bewaard worden, het volstaat om achteraf een nieuwe mengtuit op te schroeven.

## SCELLEMENT CHIMIQUE EPOXY PURE “XTREME” S-IRE

Résine chimique “Performance Extrême” pour applications dans le béton fissuré et scellement d’armatures rapportées.

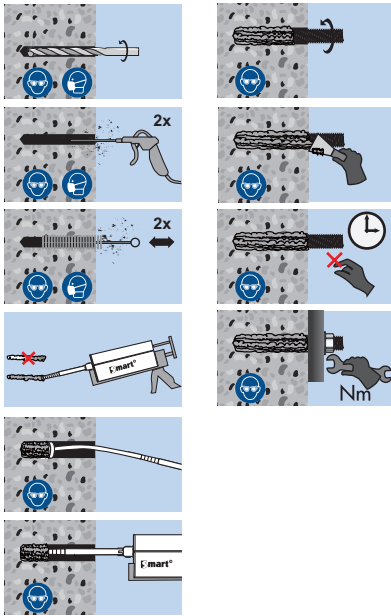
### AVANTAGES

- Des profondeurs d’ancrage variables de 4x à 20x le diamètre des tiges filetées.
- La performance supérieure et le faible retrait de la résine permettent une charge maximale dans le béton fissuré et non fissuré.
- Approuvé pour des distances aux bords et des entraxes très réduits, applications au-dessus de la-tête, trous inondés et forage au percussion ou diamant.

### APPLICATION

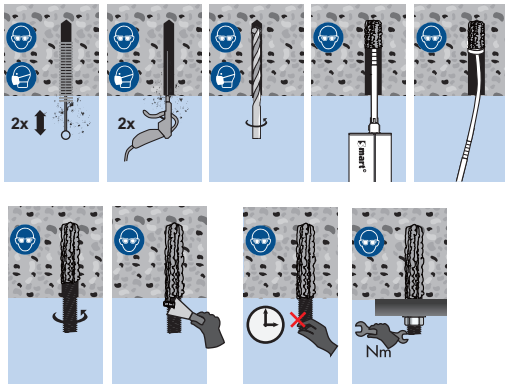
- Consultez le mode emploi avant utilisation.
- La résine et le durcisseur sont stockés dans deux compartiments séparés ils ne se mélangent et ne sont activés que dans le bec mélangeur. Prêt à utiliser.
- Des cartouches entamées peuvent être réutilisées en changeant simplement le bec mélangeur.

### INSTALLATION SCHEME



| size | language | pgb code       | EAN13         |   |
|------|----------|----------------|---------------|---|
| 385  | NL-FR    | SMCH13385 EP   | 5902134194714 | 1 |
| 385  | EN-DE    | SMCH13385EN EP | 5902134202037 | 1 |
| 585  | NL-FR    | SMCH13585 EP   | 5902134194721 | 1 |
| 585  | EN-DE    | SMCH13585EN EP | 5902134202037 | 1 |

### INSTALLATION SCHEME - OVERHEAD



### DRILLING METHOD



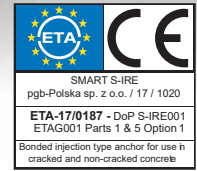
Chemical fixings

### HARDENING TIMES - UITHARDINGSTIJDEN - TEMPS DE PRISE <sup>1)</sup>

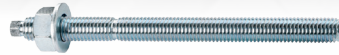
| Temp.   | 10°C | 10-15°C | 15-20°C | 20-25°C | 25-30°C | > 30°C |
|---|------|---------|---------|---------|---------|--------|
| working time / verwerkingstijd/ temps de manipulation | 300' | 8'      | 6'      | 5'      | 4'      | 4'     |
| loading time / uithardingstijd/ temps de prise        | 24hr | 85'     | 75'     | 50'     | 40'     | 35'    |

<sup>1)</sup> T<sub>work</sub> is the typical gel time at the highest temperature, Tload is set at the lowest temperature. Service temperature range -40°C to +70°C. Maximum short temperature =+70°C. Maximum long temperature = +50°C.  
De verwerkingstijd is gebaseerd op de hoogste temperatuur, de uithardingstijd is volgens de laagste temperatuur.  
Le temps de manipulation se fait sur la base de la température la plus élevée, le temps de prise se calcule sur base de la température la plus basse.

The cartridges must be conditioned in a dry environment to a minimum of +10°C.  
De kokers moeten bewaard worden in een droge omgeving en bij een minimum temperatuur van +10°C.  
Les cartouches doivent être conservées dans un endroit sec et à une température de +10°C minimum.



**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



Recommended loads for a single anchor in UN-CRACKED concrete with commercial threaded rods at MINIMUM embedment depth.  
 Maximaal aanbevolen belasting voor één anker in ONGESCHEURD beton met standaard draadstang bij MINIMALE verankeringsdiepte.  
 Charges maximales conseillées pour un ancrage simple dans du béton NON FISSURÉ avec tige filetée standard et profondeur d'ancrage MINIMALE.

| rod  | d <sub>0</sub><br>[mm] | brush diameter | T <sub>inst</sub><br>[Nm] | h <sub>ef,min</sub><br>[mm] |                        |                          |                          |                           |                           |                          |    | Consumption <sup>3)</sup><br>385ml - 585ml |       | N <sub>ALL</sub><br>[kN] | dry/wet flooded hole |
|------|------------------------|----------------|---------------------------|-----------------------------|------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|----|--|-------|--------------------------|----------------------|
|      |                        |                |                           | h <sub>ef</sub><br>[mm]     | h <sub>0</sub><br>[mm] | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] |    |  |       |                          |                      |
| M 8  | 10                     | S11HF          | 10                        | 60                          | 65                     | 40                       | 40                       | 120                       | 240                       | 100                      | 80 | 130  | 10,05 |                          |                      |
| M 10 | 12                     | S14HF          | 20                        | 60                          | 65                     | 40                       | 40                       | 120                       | 240                       | 100                      | 65 | 104  | 11,20 |                          |                      |
| M 12 | 14                     | S14/15HF       | 40                        | 70                          | 75                     | 40                       | 40                       | 140                       | 280                       | 100                      | 47 | 75   | 14,10 |                          |                      |
| M 16 | 18                     | S22HF          | 80                        | 80                          | 85                     | 40                       | 40                       | 160                       | 320                       | 110                      | 30 | 48   | 17,20 |                          |                      |
| M 20 | 22                     | S24HF          | 120                       | 90                          | 95                     | 50                       | 50                       | 180                       | 360                       | 134                      | 20 | 32   | 20,50 |                          |                      |
| M 24 | 26                     | S31HF          | 160                       | 96                          | 101                    | 50                       | 50                       | 192                       | 384                       | 148                      | 15 | 24   | 22,60 |                          |                      |
| M 27 | 30                     | S31HF          | 180                       | 108                         | 113                    | 50                       | 50                       | 216                       | 432                       | 168                      | 10 | 16   | 27,00 |                          |                      |
| M 30 | 35                     | S38HF          | 200                       | 120                         | 125                    | 50                       | 50                       | 240                       | 480                       | 190                      | 5  | 9  | 31,60 |                          |                      |

**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



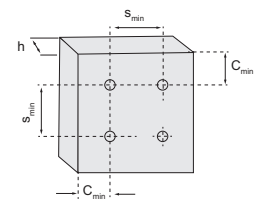
Recommended loads for a single anchor in UN-CRACKED concrete with commercial threaded rods at MAXIMUM embedment depth.  
 Maximaal aanbevolen belasting voor één anker in ONGESCHEURD beton met standaard draadstang bij MAXIMALE verankeringsdiepte.  
 Charges maximales conseillées pour un ancrage simple dans du béton NON FISSURÉ avec tige filetée standard et profondeur d'ancrage MAXIMALE.

| rod  | d <sub>0</sub><br>[mm] | brush diameter | T <sub>inst</sub><br>[Nm] | h <sub>ef,max</sub> = 20d<br>[mm] |                        |                          |                          |                           |                           |                          |    | Consumption <sup>3)</sup><br>385ml - 585ml |        | N <sub>ALL</sub><br>[kN] | dry/wet flooded hole |
|------|------------------------|----------------|---------------------------|-----------------------------------|------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|----|--|--------|--------------------------|----------------------|
|      |                        |                |                           | h <sub>ef</sub><br>[mm]           | h <sub>0</sub><br>[mm] | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] |    |  |        |                          |                      |
| M 8  | 10                     | S11HF          | 10                        | 160                               | 165                    | 80                       | 80                       | 320                       | 640                       | 190                      | 32 | 51   | 26,80  |                          |                      |
| M 10 | 12                     | S14HF          | 20                        | 200                               | 205                    | 100                      | 100                      | 400                       | 800                       | 230                      | 20 | 33   | 38,90  |                          |                      |
| M 12 | 14                     | S14/15HF       | 40                        | 240                               | 245                    | 120                      | 120                      | 480                       | 960                       | 270                      | 14 | 23   | 56,00  |                          |                      |
| M 16 | 18                     | S22HF          | 80                        | 320                               | 325                    | 160                      | 160                      | 640                       | 1280                      | 350                      | 7  | 12   | 92,00  |                          |                      |
| M 20 | 22                     | S24HF          | 120                       | 400                               | 405                    | 200                      | 200                      | 800                       | 1600                      | 444                      | 4  | 7  | 143,00 |                          |                      |
| M 24 | 26                     | S31HF          | 160                       | 480                               | 485                    | 240                      | 240                      | 960                       | 1920                      | 532                      | 3  | 5  | 189,00 |                          |                      |
| M 27 | 30                     | S31HF          | 180                       | 540                               | 545                    | 270                      | 270                      | 1080                      | 2160                      | 600                      | 2  | 3  | 217,00 |                          |                      |
| M 30 | 35                     | S38HF          | 200                       | 600                               | 605                    | 300                      | 300                      | 1200                      | 2400                      | 670                      | 1  | 1  | 242,00 |                          |                      |

<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) and include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>F</sub> = 1.4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> Standard commercial threaded rod (in the case of rods made of galvanised steel - standard rods of the strength class ≤ 8.8 only) with marked embedment depth h<sub>ef</sub> from 4x to 20x anchor diameter.

<sup>3)</sup> Theoretical value of the number of holes that can be filled with one cartridge.

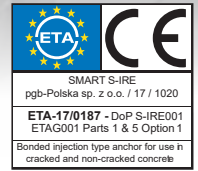


**SHEAR LOADS - AFSHUIFBELASTING - CHARGE DE CISAILLEMENT <sup>1) 2)</sup>**

| Grade                      |                                | M 8  | M 10 | M 12 | M 16  | M 20  | M 24  | M 27  | M 30  |
|----------------------------|--------------------------------|------|------|------|-------|-------|-------|-------|-------|
| Galvanized steel class 5.8 | V <sub>Rk,s</sub>              | 5,1  | 8,6  | 12,0 | 22,3  | 34,9  | 50,3  | 65,7  | 80,0  |
|                            | M <sup>0</sup> <sub>Rk,s</sub> | 10,9 | 21,1 | 37,7 | 94,9  | 185,7 | 320,6 | 475,4 | 642,9 |
| Stainless steel A4-70      | V <sub>Rk,s</sub>              | 6,0  | 9,2  | 13,7 | 25,2  | 39,4  | 56,8  | 73,7  | 89,7  |
|                            | M <sup>0</sup> <sub>Rk,s</sub> | 11,9 | 23,8 | 42,1 | 106,7 | 207,9 | 359,9 | 533,4 | 720,7 |

<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) and include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>F</sub> = 1.4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> For all embedment depths ≥ h<sub>ef,min</sub>



**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



Recommended loads for a single anchor in CRACKED concrete with commercial threaded rods at MINIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in GESCHEURD beton met standaard draadstang bij MINIMALE verankeringsdiepte.

Charges maximales conseillées pour un ancrage simple dans du béton FISSURÉ avec tige fileté standard et profondeur d'ancrage MINIMALE.

| rod  | d <sub>0</sub><br>[mm] | brush diameter | T <sub>inst</sub><br>[Nm] | h <sub>ef,min</sub><br>[mm] |                          |                          |                           |                           |                          |  |     | N <sub>ALL</sub><br>[kN] |
|------|------------------------|----------------|---------------------------|-----------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|--|-----|--------------------------|
|      |                        |                |                           | h <sub>ef</sub><br>[mm]     | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] | Consumption <sup>3)</sup><br>385ml - 585ml |     |                          |
| M 8  | 10                     | S11HF          | 10                        | 60                          | 40                       | 40                       | 120                       | 240                       | 100                      | 80   | 130 | 5,70                     |
| M 10 | 12                     | S14HF          | 20                        | 60                          | 40                       | 40                       | 120                       | 240                       | 100                      | 65   | 104 | 7,10                     |
| M 12 | 14                     | S14/15HF       | 40                        | 70                          | 40                       | 40                       | 140                       | 280                       | 100                      | 47   | 75  | 9,40                     |
| M 16 | 18                     | S22HF          | 80                        | 80                          | 40                       | 40                       | 160                       | 320                       | 110                      | 30   | 48  | 12,25                    |
| M 20 | 22                     | S24HF          | 120                       | 90                          | 50                       | 50                       | 180                       | 360                       | 134                      | 20   | 32  | 14,60                    |
| M 24 | 26                     | S31HF          | 160                       | 96                          | 50                       | 50                       | 192                       | 384                       | 148                      | 15   | 24  | 16,10                    |
| M 27 | 30                     | S31HF          | 180                       | 108                         | 50                       | 50                       | 216                       | 432                       | 168                      | 10   | 16  | 19,20                    |
| M 30 | 35                     | S38HF          | 200                       | 120                         | 50                       | 50                       | 240                       | 480                       | 190                      | 5  | 9   | 22,50                    |

**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



Recommended loads for a single anchor in CRACKED concrete with commercial threaded rods at MAXIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in GESCHEURD beton met standaard draadstang bij MAXIMALE verankeringsdiepte.

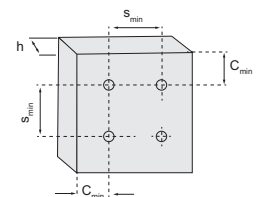
Charges maximales conseillées pour un ancrage simple dans du béton FISSURÉ avec tige fileté standard et profondeur d'ancrage MAXIMALE.

| rod  | d <sub>0</sub><br>[mm] | brush diameter | T <sub>inst</sub><br>[Nm] | h <sub>ef,max</sub> = 20d<br>[mm] |                          |                          |                           |                           |                          |  |    | N <sub>ALL</sub><br>[kN] |
|------|------------------------|----------------|---------------------------|-----------------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|--|----|--------------------------|
|      |                        |                |                           | h <sub>ef</sub><br>[mm]           | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] | Consumption <sup>3)</sup><br>385ml - 585ml |    |                          |
| M 8  | 10                     | S11HF          | 10                        | 160                               | 80                       | 80                       | 320                       | 640                       | 190                      | 32   | 51 | 15,30                    |
| M 10 | 12                     | S14HF          | 20                        | 200                               | 100                      | 100                      | 400                       | 800                       | 230                      | 20   | 33 | 23,90                    |
| M 12 | 14                     | S14/15HF       | 40                        | 240                               | 120                      | 120                      | 480                       | 960                       | 270                      | 14   | 23 | 32,30                    |
| M 16 | 18                     | S22HF          | 80                        | 320                               | 160                      | 160                      | 640                       | 1280                      | 350                      | 7  | 12 | 57,40                    |
| M 20 | 22                     | S24HF          | 120                       | 400                               | 200                      | 200                      | 800                       | 1600                      | 444                      | 4  | 7  | 83,60                    |
| M 24 | 26                     | S31HF          | 160                       | 480                               | 240                      | 240                      | 960                       | 1920                      | 532                      | 3  | 5  | 120,60                   |
| M 27 | 30                     | S31HF          | 180                       | 540                               | 270                      | 270                      | 1080                      | 2160                      | 600                      | 2  | 3  | 109,00                   |
| M 30 | 35                     | S38HF          | 200                       | 600                               | 300                      | 300                      | 1200                      | 2400                      | 670                      | 1  | 1  | 134,60                   |

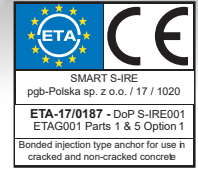
<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) and include the resistances' partial safety factors as per approvals and a partial safety factor on the action of v<sub>pr</sub> = 1,4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> Standard commercial threaded rod (in the case of rods made of galvanised steel - standard rods of the strength class ≤ 8.8 only) with marked embedment depth h<sub>ef</sub> from 4x to 20x anchor diameter.

<sup>3)</sup> Theoretical value of the number of holes that can be filled with one cartridge.



Chemical fixings



## LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>



Recommended loads for a single anchor in UN-CRACKED concrete with rebars at MINIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in ONGESCHEURD beton met wapeningsstaven bij MINIMALE verankeringsdiepte.

Charges maximales conseillées pour un ancrage simple dans du béton NON FISSURÉ avec fers à béton et profondeur d'ancrage MINIMALE.

| Bars and de-coiled rods | d <sub>0</sub><br>[mm] | brush diameter<br>[mm] | h <sub>ef,min</sub><br>[mm] |                        |                          |                          |                           |                           |                          |              | Consumption <sup>3)</sup><br>385ml - 585ml |       | N <sub>ALL</sub><br>[kN] | N <sub>ALL</sub><br>[kN] |
|-------------------------|------------------------|------------------------|-----------------------------|------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|--------------|--|-------|--------------------------|--------------------------|
|                         |                        |                        | h <sub>ef</sub><br>[mm]     | h <sub>0</sub><br>[mm] | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] | dry/wet hole | flooded hole                               |       |                          |                          |
| Ø 8                     | 12                     | S12/13HF               | 60                          | 65                     | 40                       | 40                       | 120                       | 240                       | 100                      | 68           | 109  | 8,60  | 7,20                     |                          |
| Ø 10                    | 14                     | S14/15HF               | 60                          | 65                     | 40                       | 40                       | 120                       | 240                       | 100                      | 57           | 91   | 10,70 | 8,90                     |                          |
| Ø 12                    | 16                     | S18HF                  | 70                          | 75                     | 40                       | 40                       | 140                       | 280                       | 100                      | 42           | 67   | 14,10 | 11,70                    |                          |
| Ø 16                    | 20                     | S22HF                  | 80                          | 85                     | 40                       | 40                       | 160                       | 320                       | 120                      | 29           | 46   | 17,20 | 14,30                    |                          |
| Ø 20                    | 25                     | S27HF                  | 90                          | 95                     | 50                       | 50                       | 180                       | 360                       | 140                      | 16           | 26   | 20,50 | 17,10                    |                          |
| Ø 25                    | 32                     | S35HF                  | 100                         | 105                    | 50                       | 50                       | 200                       | 400                       | 164                      | 8            | 13   | 24,00 | 20,00                    |                          |
| Ø 32                    | 40                     | S43HF                  | 128                         | 133                    | 70                       | 70                       | 256                       | 512                       | 208                      | 4            | 7  | 34,80 | 29,00                    |                          |

## LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>



Recommended loads for a single anchor in UN-CRACKED concrete with rebars at MAXIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in ONGESCHEURD beton met wapeningsstaven bij MAXIMALE verankeringsdiepte.

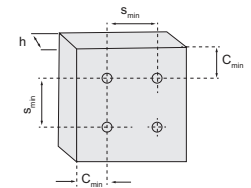
Charges maximales conseillées pour un ancrage simple dans du béton NON FISSURÉ avec fers à béton et profondeur d'ancrage MAXIMALE.

| Bars and de-coiled rods | d <sub>0</sub><br>[mm] | brush diameter<br>[mm] | h <sub>ef,max</sub> = 20d<br>[mm] |                        |                          |                          |                           |                           |                          |              | Consumption <sup>3)</sup><br>385ml - 585ml |        | N <sub>ALL</sub><br>[kN] | N <sub>ALL</sub><br>[kN] |
|-------------------------|------------------------|------------------------|-----------------------------------|------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|--------------|--|--------|--------------------------|--------------------------|
|                         |                        |                        | h <sub>ef</sub><br>[mm]           | h <sub>0</sub><br>[mm] | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] | dry/wet hole | flooded hole                               |        |                          |                          |
| Ø 8                     | 12                     | S12/13HF               | 160                               | 165                    | 80                       | 80                       | 320                       | 640                       | 190                      | 27           | 43   | 22,90  | 19,10                    |                          |
| Ø 10                    | 14                     | S14/15HF               | 200                               | 205                    | 100                      | 100                      | 400                       | 800                       | 230                      | 18           | 29   | 35,90  | 29,90                    |                          |
| Ø 12                    | 16                     | S18HF                  | 240                               | 245                    | 120                      | 120                      | 480                       | 960                       | 270                      | 13           | 21   | 51,70  | 43,10                    |                          |
| Ø 16                    | 20                     | S22HF                  | 320                               | 325                    | 160                      | 160                      | 640                       | 1280                      | 350                      | 7            | 12   | 84,20  | 70,20                    |                          |
| Ø 20                    | 25                     | S27HF                  | 400                               | 405                    | 200                      | 200                      | 800                       | 1600                      | 450                      | 3            | 6  | 131,60 | 109,70                   |                          |
| Ø 25                    | 32                     | S35HF                  | 500                               | 505                    | 250                      | 250                      | 1000                      | 2000                      | 564                      | 2            | 3  | 197,50 | 164,50                   |                          |
| Ø 32                    | 40                     | S43HF                  | 640                               | 645                    | 320                      | 320                      | 1280                      | 2560                      | 720                      | -            | 1  | 180,95 | 150,80                   |                          |

<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) and include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>F</sub> = 1.4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> Standard commercial reinforcing bar BSt 500S with marked embedment depth h<sub>ef</sub> t from 4x to 20x anchor diameter. Characteristic yield strength f<sub>yk</sub> or f<sub>0,2k</sub> 400 to 600 MPa.

<sup>3)</sup> Theoretical value of the number of holes that can be filled with one cartridge.

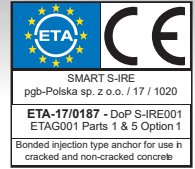


## SHEAR LOADS - AFSHUIFBELASTING - CHARGE DE CISAILLEMENT <sup>1) 2)</sup>

| Type            |                                | Ø 8  | Ø 10 | Ø 12 | Ø 16  | Ø 20  | Ø 25  | Ø 32  |
|-----------------|--------------------------------|------|------|------|-------|-------|-------|-------|
| Rebar BSt 500 S | V <sub>Rk,s</sub>              | 6,7  | 10,1 | 14,2 | 25,2  | 39,4  | 61,8  | 101,2 |
|                 | M <sup>0</sup> <sub>Rk,s</sub> | 15,7 | 29,8 | 51,3 | 121,3 | 237,2 | 463,8 | 971,6 |

<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>F</sub> = 1.4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> For all embedment depths ≥ h<sub>ef,min</sub>



**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



Recommended loads for a single anchor in CRACKED concrete with rebars at MINIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in GESCHEURD beton met wapeningsstaven bij MINIMALE verankeringsdiepte.

Charges maximales conseillées pour un ancrage simple dans du béton FISSURÉ avec fers à béton et profondeur d'ancrage MINIMALE.

| Bars and de-coiled rods | d <sub>0</sub><br>[mm] | brush diameter<br>[mm] | h <sub>ef,min</sub><br>[mm] |                          |                          |                           |                           |                          |    | Consumption <sup>3)</sup><br>385ml - 585ml |       | N <sub>ALL</sub><br>[kN]<br>dry/wet hole | N <sub>ALL</sub><br>[kN]<br>flooded hole |
|-------------------------|------------------------|------------------------|-----------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|----|--|-------|--|--|
|                         |                        |                        | h <sub>ef</sub><br>[mm]     | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] |    |  |       |  |  |
| Ø 8                     | 12                     | S12/13HF               | 60                          | 40                       | 40                       | 120                       | 240                       | 100                      | 68 | 109  | 5,00  | 4,20                                     |  |
| Ø 10                    | 14                     | S14/15HF               | 60                          | 40                       | 40                       | 120                       | 240                       | 100                      | 57 | 91   | 7,90  | 6,60                                     |  |
| Ø 12                    | 16                     | S18HF                  | 70                          | 40                       | 40                       | 140                       | 280                       | 100                      | 42 | 67   | 10,00 | 8,40                                     |  |
| Ø 16                    | 20                     | S22HF                  | 80                          | 40                       | 40                       | 160                       | 320                       | 120                      | 29 | 46   | 12,20 | 10,20                                    |  |
| Ø 20                    | 25                     | S27HF                  | 90                          | 50                       | 50                       | 180                       | 360                       | 140                      | 16 | 26   | 14,60 | 12,20                                    |  |
| Ø 25                    | 32                     | S35HF                  | 100                         | 50                       | 50                       | 200                       | 400                       | 164                      | 8  | 13   | 17,10 | 14,30                                    |  |
| Ø 32                    | 40                     | S43HF                  | 128                         | 70                       | 70                       | 256                       | 512                       | 208                      | 4  | 7  | 24,80 | 20,70                                    |  |

**LOADS - BELASTINGEN - CHARGES <sup>1) 2)</sup>**



Recommended loads for a single anchor in CRACKED concrete with rebars at MAXIMUM embedment depth.

Maximaal aanbevolen belasting voor één anker in ESCHEURD beton met wapeningsstaven bij MAXIMALE verankeringsdiepte.

Charges maximales conseillées pour un ancrage simple dans du béton FISSURÉ avec fers à béton et profondeur d'ancrage MAXIMALE.

| Bars and de-coiled rods | d <sub>0</sub><br>[mm] | brush diameter<br>[mm] | h <sub>ef,max</sub> = 20d<br>[mm] |                          |                          |                           |                           |                          |    | Consumption <sup>3)</sup><br>385ml - 585ml |        | N <sub>ALL</sub><br>[kN]<br>dry/wet hole | N <sub>ALL</sub><br>[kN]<br>flooded hole |
|-------------------------|------------------------|------------------------|-----------------------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|----|--|--------|--|--|
|                         |                        |                        | h <sub>ef</sub><br>[mm]           | C <sub>min</sub><br>[mm] | S <sub>min</sub><br>[mm] | C <sub>cr,N</sub><br>[mm] | S <sub>cr,N</sub><br>[mm] | h <sub>min</sub><br>[mm] |    |  |        |  |  |
| Ø 8                     | 12                     | S12/13HF               | 160                               | 80                       | 80                       | 320                       | 640                       | 190                      | 27 | 43   | 13,40  | 11,20                                    |  |
| Ø 10                    | 14                     | S14/15HF               | 200                               | 100                      | 100                      | 400                       | 800                       | 230                      | 18 | 29   | 29,90  | 24,90                                    |  |
| Ø 12                    | 16                     | S18HF                  | 240                               | 120                      | 120                      | 480                       | 960                       | 270                      | 13 | 21   | 38,80  | 32,30                                    |  |
| Ø 16                    | 20                     | S22HF                  | 320                               | 160                      | 160                      | 640                       | 1280                      | 350                      | 7  | 12   | 68,90  | 57,40                                    |  |
| Ø 20                    | 25                     | S27HF                  | 400                               | 200                      | 200                      | 800                       | 1600                      | 450                      | 3  | 6  | 95,70  | 79,80                                    |  |
| Ø 25                    | 32                     | S35HF                  | 500                               | 250                      | 250                      | 1000                      | 2000                      | 564                      | 2  | 3  | 143,60 | 119,70                                   |  |
| Ø 32                    | 40                     | S43HF                  | 640                               | 320                      | 320                      | 1280                      | 2560                      | 720                      | -  | 1  | 129,20 | 107,70                                   |  |

Chemical fixings

<sup>1)</sup> Load figures are according to ETA-17/0187 (design method TR029) and include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>F</sub> = 1,4. For combined loads, anchor groups and installations close to an edge, concrete edge failure has to be checked as per ETAG, Annex C, Design Method A.

<sup>2)</sup> Standard commercial reinforcing bar BST 500S with marked embedment depth h<sub>ef</sub> from 4x to 20x anchor diameter. Characteristic yield strength f<sub>yk</sub> or f<sub>0,2k</sub> 400 to 600 MPa.

<sup>3)</sup> Theoretical value of the number of holes that can be filled with one cartridge.

