



# E-PLUS

NTC 2018'e uygun inşaat uygulamaları için ürün  
Prodotto per uso strutturale in accordo a NTC 2018  
Product for structural applications  
Produit pour applications structurales



Option 1 - Option 7



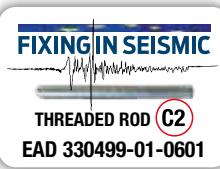
SEISMIC - C2



Rebar Fixing



Post-Installed Rebar



## BCR-585 E-PLUS

Mekik kartuş  
Cartuccia shuttle  
Shuttle cartridge  
Shuttlekartusche  
585 ml  
cod. 747485



## BCR-385 E-PLUS

Mekik kartuş  
Cartuccia shuttle  
Shuttle cartridge  
Shuttlekartusche  
385 ml  
cod. 747460



DEPOLAMA VE SAKLAMA  
STOCCAGGIO E CONSERVAZIONE  
STORAGE AND CONSERVATION  
LAGERUNG UND AUFBEWAHRUNG



KARTUŞ  
CARTUCCIA  
CARTRIDGE  
KARTUSCHE



ÖMRÜ (ay)  
DURATA (mesi)  
EXPIRY (months)  
HALTBARKEIT (Monate)





# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT

## Ürün gamı | Gamma prodotti | Product's range | Warenangebot

|  | KOD > CODICE<br>CODE > NUMMER | PARÇA > ARTICOLO<br>ITEM > ARTIKEL | AÇIKLAMA > DESCRIZIONE<br>DESCRIPTION > BESCHREIBUNG                           | Nr. |
|--|-------------------------------|------------------------------------|--------------------------------------------------------------------------------|-----|
|  |                               | <b>E-PLUS</b>                      |                                                                                |     |
|  | <b>747485</b>                 | <b>BCR 585 E-PLUS</b>              | Kartuş boyutu > Cartuccia da<br>Cartridge of > Kartusche von<br>585 ml & Mixer | 12  |
|  | <b>747460</b>                 | <b>BCR 385 E-PLUS</b>              | Kartuş boyutu > Cartuccia da<br>Cartridge of > Kartusche von<br>385 ml & Mixer | 12  |

İlave karıştırıcı > Secondo mixer  
Additional mixer > Doppelmischer



KARTUŞ KODU > CODICE CARTUCCIA  
CODE CARTRIDGE > KARTUSCHE NUMBER  
**000000AX**

## Prizlenme süresi | Tempi di posa | Setting times | Verlegungszeit



# E-PLUS

40°C  
35 °C  
30 °C  
25 °C  
20 °C  
15 °C  
10 °C  
5 °C  
0 °C

**+5°C**

Uygulama için minimum ürün sıcaklığı  
Temperatura minima del prodotto per l'applicazione  
Minimum product temperature for application  
Min Kartouchetemperatur für die Anwendung

8 min  
12 min  
15 min  
20 min  
30 min  
45 min  
1 h  
1 h 15'  
2 h

3 h  
3 h  
3 h  
4 h  
4 h  
6 h  
12 h  
24 h  
48 h

5 h  
5 h  
5 h  
10 h  
12 h  
18 h  
24 h  
48 h  
96 h

**WITH H<sub>2</sub>O X2 CURING TIME**

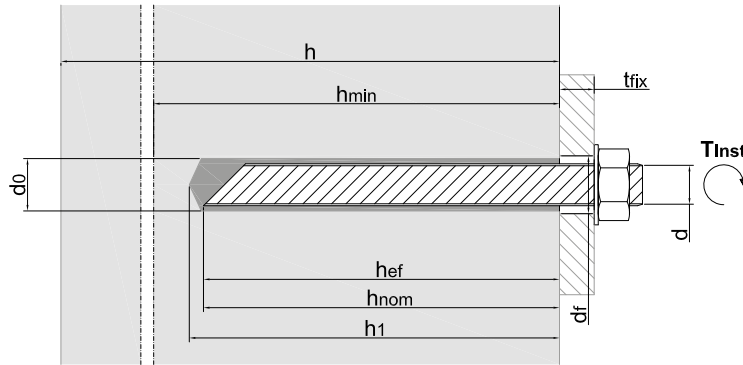
- 01 Taban malzemesi sıcaklığı > Temperatura supporto > Base material temperature > Grundmaterial-temperatur
- 02 İşlenebilirlik süresi > Tempo di lavorabilità > Open time > Verarbeitungszeit
- 03 Sıkma işlemi bekleniyor > Attesa per il serraggio > Torque time > Drehmomentzeit
- 04 Yüke bindirme için bekleme > Attesa per la messa in carico > Curing time > Bauzeit



## Kurulum bilgileri | Dati installazione | Installation data | Installationsangaben

|               |                                                                                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>D</b>      | Malzeme > Materiale > Material > Material                                                                                                   |
| <b>d [mm]</b> | Çubuk çapı > Diametro barra > Rod diameter > Stangedurchmesser                                                                              |
| <b>N</b>      | Çubuk tipi > Tipologia di barra > Type of rod > Stange-Klasse                                                                               |
|               | Kovan > Gabbietta > Plastic sleeve > Hülse                                                                                                  |
| <b>E</b>      | $h_{min}$ [mm] Taban malzemenin asgari kalınlığı > Spessore minimo del supporto<br>Minimum thickness of base material > Mindestbauteildicke |
| <b>G</b>      | $d_o$ [mm] Delik çapı > Diametro foro > Hole diameter > Bohrloch-Durchmesser                                                                |
|               | $h_1$ [mm] Delik derinliği > Profondità del foro > Hole depth > Bohrlochtiefe                                                               |
| <b>E</b>      | $h_{nom}$ [mm] Yerleştirme derinliği > Profondità di inserimento<br>Embedment depth > Setztiefe                                             |
| <b>L</b>      | $h_{ef}$ [mm] Etkili ankraj derinliği > Profondità effettiva ancoraggio<br>Effective anchorage depth > Effektive Verankerungstiefe          |

|          |                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>D</b> | $S_{cr}$ [mm] Karakteristik aralık > Interasse caratteristico<br>Characteristic spacing > Charakteristischerachsabstand                                    |
| <b>C</b> | $C_{cr}$ [mm] Kenara olan karakteristik mesafe > Distanza dal bordo caratteristica<br>Characteristic edge distance > Charakteristischerandabstand          |
| <b>S</b> | $S_{min}$ [mm] Asgari aralık > Interasse minimo<br>Minimum allowable spacing > Minimaler Achsabstand                                                       |
| <b>C</b> | $C_{min}$ [mm] Kenara olan asgari mesafe > Distanza minima dal bordo<br>Minimum allowable edge distance > Minimaler Randabstand                            |
| <b>t</b> | $t_{fix}$ [mm] Tespit kalınlığı > Spessore fissabile<br>Fixture thickness > Anbauteildicke                                                                 |
| <b>d</b> | $d_i$ [mm] Tespit kalınlığı delik çapı > Diametro foro spessore fissabile<br>Diameter of clearance hole in the fixture > Bohrloch-Durchmesser im Anbauteil |
| <b>S</b> | $S_w$ [mm] Anahtar > Chiave > Key > Schlüsselweite                                                                                                         |
| <b>T</b> | $T_{inst}$ [Nm] Sıkma torku > Coppia di serraggio<br>Installation torque > Drehmoment Beim Verankern                                                       |



- > **NOT:** Ürünün kurulumundan önce, bu bölüme ve ilerleyen sayfalarda açıklanan eksiksiz kurulum prosedürüne bakın. Ürünün uygunsu kullanılması halinde her türlü sorumluluk reddedilir.
- > **NOTA:** Prima dell'installazione del prodotto consultare la presente sezione e la procedura di installazione completa riportata nelle pagine successive. Si declina ogni responsabilità per l'uso improprio del prodotto.
- > **WARNING:** Before use see this section and the complete procedure of installation reported in the next pages. We assume no liability for the not correct use of the product.
- > **ANMERKUNG:** vor der Installation des Produktes bitte diesen Abschnitt und das komplette Installationsverfahren in den folgenden Seiten lesen. Wir übernehmen keine Haftung für die inkorrekte Anwendung des Produktes.

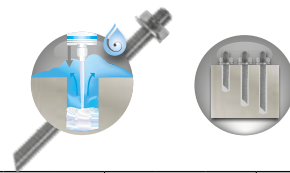


Seçenek > Option 1  
**M12 ... M30**

Seçenek > Option 7  
**M8 ... M30**



SEISMIC - C2  
**M12 ... M24**



| MALZEME<br>MATERIAL                                  | ÇUBUK ÇAPı<br>ROD<br>DIAMETER | ÇUBUK TİPİ<br>TYPE<br>OF ROD | TABAN MALZEMENİN ASGARİ<br>KALINLIĞI<br>MIN. THICKNESS BASE MATERIAL | DELİK ÇAPı<br>HOLE<br>DIAMETER | DELİK DERİNLİĞİ<br>HOLE DEPTH | YERLEŞTİRME DERİNLİĞİ<br>EMBEDMENT DEPTH | ETKİLİ ANKRAJ DERİNLİĞİ<br>EFFECTIVE<br>ANCHORAGE DEPTH | KARAKTERİSTİK ARALIK<br>CHARACTERISTIC<br>SPACING | KENARA OLAN KARAKTERİSTİK<br>MESAFE<br>CHARACTERISTIC<br>EDGE DISTANCE |
|------------------------------------------------------|-------------------------------|------------------------------|----------------------------------------------------------------------|--------------------------------|-------------------------------|------------------------------------------|---------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------|
| <b>E-PLUS</b>                                        | $d$ [mm]                      |                              | $h_{min}$ [mm]                                                       | $d_o$ [mm]                     | $h_1$ [mm]                    | $h_{nom}$ [mm]                           | $h_{ef}$ [mm]                                           | $S_{cr, N}$ [mm]                                  | $C_{cr, N}$ [mm]                                                       |
|                                                      |                               |                              | min med max                                                          |                                | min med max                   | min med max                              | min med max                                             | min med max                                       | min med max                                                            |
| M8-M30<br>Çatlaksız beton<br>Non cracked<br>Concrete | M8                            | $\geq 5.8 - A4/70$           | 100 110 190                                                          | 10                             | 65 85 165                     | 60 80 160                                | 60 80 160                                               | 180 202 202                                       | 90 101 101                                                             |
|                                                      | M10                           | $\geq 5.8 - A4/70$           | 100 120 230                                                          | 12                             | 65 95 205                     | 60 90 200                                | 60 90 200                                               | 180 242 242                                       | 90 121 121                                                             |
| M12-M30<br>Çatlaklı beton<br>Cracked Concrete        | M12                           | $\geq 5.8 - A4/70$           | 100 140 270                                                          | 14                             | 75 115 245                    | 70 110 240                               | 70 110 240                                              | 210 291 291                                       | 105 145 145                                                            |
| M12-M24<br>SEISMIC C2                                | M16                           | $\geq 5.8 - A4/70$           | 116 161 356                                                          | 18                             | 85 130 325                    | 80 125 320                               | 80 125 320                                              | 240 375 388                                       | 120 188 194                                                            |
|                                                      | M20                           | $\geq 5.8 - A4/70$           | 138 218 448                                                          | 22-24                          | 95 175 405                    | 90 170 400                               | 90 170 400                                              | 270 462 462                                       | 135 231 231                                                            |
|                                                      | M24                           | $\geq 5.8 - A4/70$           | 152 266 536                                                          | 28                             | 100 215 485                   | 96 210 480                               | 96 210 480                                              | 288 554 554                                       | 144 277 277                                                            |
|                                                      | M27                           | $\geq 5.8 - A4/70$           | 170 300 600                                                          | 30                             | 115 245 545                   | 110 240 540                              | 110 240 540                                             | 330 624 624                                       | 165 312 312                                                            |
|                                                      | M30                           | $\geq 5.8 - A4/70$           | 190 340 670                                                          | 35                             | 125 275 605                   | 120 270 600                              | 120 270 600                                             | 360 693 693                                       | 180 346 346                                                            |



# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT



Seçenek > Option 1

Seçenek > Option 7

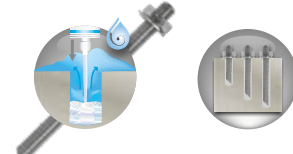
M12 ... M30

M8 ... M30



SEISMIC - C2

M12 ... M24

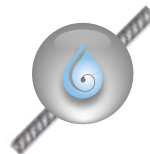


| MALZEME<br>MATERIAL                                  | ÇUBUK ÇAPRI<br>ROD<br>DIAMETER | ÇUBUK TİPİ<br>TYPE<br>OF ROD | ASGARI ARALIK<br>ALLOWABLE SPACING | KENARA OLAN ASGARI MESAFE<br>MIN. ALLOWABLE EDGE DISTANCE | TESPİT KALINLIĞI<br>MAX<br>FIXTURE THICKNESS | TESPİT KALINLIĞI DELİK ÇAPRI<br>DIAMETER OF CLEARANCE HOLE<br>IN THE FIXTURE | ANAHTAR<br>KEY      | SIKMA TORKU<br>INSTALLATION TORQUE |
|------------------------------------------------------|--------------------------------|------------------------------|------------------------------------|-----------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------|---------------------|------------------------------------|
| <b>E-PLUS</b>                                        | d [mm]                         |                              | S <sub>min</sub> [mm]              | C <sub>min</sub> [mm]                                     | t <sub>fix</sub> [mm]<br>min ÷ max           | d <sub>t</sub> [mm]                                                          | S <sub>w</sub> [mm] | T <sub>inst</sub> [Nm]             |
| M8-M30<br>Çatlaksız beton<br>Non cracked<br>Concrete | M8                             | ≥ 5.8 - A4/70                | 40                                 | 35                                                        | 0 ÷ 1500                                     | 9                                                                            | 13                  | 10                                 |
| M12-M30<br>Çatlaklı beton<br>Cracked<br>Concrete     | M10                            | ≥ 5.8 - A4/70                | 50                                 | 40                                                        | 0 ÷ 1500                                     | 12                                                                           | 17                  | 20                                 |
|                                                      | M12                            | ≥ 5.8 - A4/70                | 60                                 | 45                                                        | 0 ÷ 1500                                     | 14                                                                           | 19                  | 40                                 |
| M12-M24<br>SEISMIC C2                                | M16                            | ≥ 5.8 - A4/70                | 75                                 | 50                                                        | 0 ÷ 1500                                     | 18                                                                           | 24                  | 80                                 |
|                                                      | M20                            | ≥ 5.8 - A4/70                | 90                                 | 55                                                        | 0 ÷ 1500                                     | 22                                                                           | 30                  | 130                                |
|                                                      | M24                            | ≥ 5.8 - A4/70                | 115                                | 60                                                        | 0 ÷ 1500                                     | 26                                                                           | 36                  | 200                                |
|                                                      | M27                            | ≥ 5.8 - A4/70                | 120                                | 75                                                        | 0 ÷ 1500                                     | 29                                                                           | 41                  | 270                                |
|                                                      | M30                            | ≥ 5.8 - A4/70                | 140                                | 80                                                        | 0 ÷ 1500                                     | 33                                                                           | 46                  | 300                                |

- > Yarılmaya kaynaklı bir kırılmayı önlemek için, beton taban malzemenin kalınlığının  $h \geq 2h_{ef}$  olması gerekir
- > Per evitare una possibile rottura per splitting, lo spessore del supporto in calcestruzzo dovrà essere  $h \geq 2h_{ef}$
- > To avoid splitting failure, the thickness of the concrete member shall be  $h \geq 2h_{ef}$
- > Um einen splittingbedingten Bruch zu verhindern, die Dicke der Unterlage aus Beton muss  $h \geq 2h_{ef}$  sein



Ø 8 ... 32 mm



| MALZEME<br>MATERIAL                         | ÇUBUK ÇAPRI<br>ROD<br>DIAMETER | ÇUBUK TİPİ<br>TYPE<br>OF ROD | DIAMETRO FORO<br>HOLE DIAMETER | ANKRAJ UZUNLUĞU<br>ANCHORAGE LENGTH<br>(**) |                    |                    | ASGARI ARALIK<br>MIN. ALLOWABLE SPACING | KENARA OLAN ASGARI MESAFE<br>MIN. ALLOWABLE EDGE DISTANCE |                    |                    |
|---------------------------------------------|--------------------------------|------------------------------|--------------------------------|---------------------------------------------|--------------------|--------------------|-----------------------------------------|-----------------------------------------------------------|--------------------|--------------------|
| <b>E-PLUS</b>                               | d [mm]                         |                              | d <sub>0</sub> [mm]            | l <sub>v</sub> [mm]                         |                    |                    | S <sub>min</sub> [mm]                   | C <sub>min</sub> [mm]                                     |                    |                    |
|                                             |                                |                              |                                | MIN l <sub>b</sub>                          | MIN l <sub>o</sub> | MAX l <sub>b</sub> |                                         | MIN l <sub>b</sub>                                        | MIN l <sub>o</sub> | MAX l <sub>b</sub> |
| C20/25<br>Calcestruzzo<br>Concrete<br>Beton | Ø 8                            | Rebar (*)                    | 10-12                          | 115                                         | 200                | 700                | 40                                      | 37                                                        | 42                 | 72                 |
|                                             | Ø 10                           | Rebar (*)                    | 12-14                          | 145                                         | 200                | 900                | 40                                      | 39                                                        | 42                 | 84                 |
|                                             | Ø 12                           | Rebar (*)                    | 14-16                          | 170                                         | 200                | 1100               | 48                                      | 40                                                        | 42                 | 96                 |
|                                             | Ø 14                           | Rebar (*)                    | 18                             | 200                                         | 210                | 1300               | 56                                      | 42                                                        | 43                 | 108                |
|                                             | Ø 16                           | Rebar (*)                    | 20                             | 230                                         | 240                | 1400               | 64                                      | 44                                                        | 45                 | 114                |
|                                             | Ø 20                           | Rebar (*)                    | 25                             | 285                                         | 300                | 1800               | 80                                      | 47                                                        | 48                 | 138                |
|                                             | Ø 25                           | Rebar (*)                    | 30-32                          | 355                                         | 375                | 2200               | 100                                     | 61                                                        | 63                 | 172                |
|                                             | Ø 28                           | Rebar (*)                    | 35                             | 400                                         | 420                | 2500               | 112                                     | 64                                                        | 65                 | 190                |
|                                             | Ø 32                           | Rebar (*)                    | 40                             | 455                                         | 480                | 2500               | 128                                     | 67                                                        | 69                 | 190                |

(\*) Rebar = B450C; BST 500

(\*\*) EC2 ve TR023'e uygun ankraj uzunluğu.

Lunghezza di ancoraggio in accordo a EC2 e TR023.

Anchorage lengths according to EC2 and TR023.

Verankerung Länge einigung mit EC2 und TR023.

l<sub>b</sub> = Ankraj uzunluğu

l<sub>b</sub> = lunghezza di ancoraggio

l<sub>b</sub> = anchorage length

l<sub>b</sub> = Verankerung Länge

l<sub>o</sub> = Üst üste binme uzunluğu

l<sub>o</sub> = lunghezza di sovrapposizione

l<sub>o</sub> = overlap joint length

l<sub>o</sub> = Überlagerung Länge



**Rebar Fixing**



Ø 8 ... 32 mm

| MALZEME<br>MATERIAL                        | DIAMETRO<br>BARRA<br>ROD<br>DIAMETER | ÇUBUK TIPI<br>TYPE<br>OF ROD | TABAN<br>ZEMİNİN ASGARI<br>KALINLIĞI<br>MIN. THICKNESS BASE<br>MATERIAL | DELİK ÇAPI<br>HOLE<br>DIAMETER | DELİK DERİNLİĞİ<br>HOLE DEPTH | YERLEŞTİRME DERİNLİĞİ<br>EMBEDMENT DEPTH | ETKİLİ ANKRAJ DERİNLİĞİ<br>EFFECTIVE<br>ANCHORAGE DEPTH | KARAKTERİSTİK ARALIK<br>CHARACTERISTIC<br>SPACING | KENARA OLAN<br>KARAKTERİSTİK MESAFE<br>CHARACTERISTIC<br>EDGE DISTANCE | ASGARI ARALIK<br>ALLOWABLE<br>SPACING | KENARA OLAN<br>ASGARI MESAFE<br>MIN. ALLOWABLE<br>EDGE DISTANCE |
|--------------------------------------------|--------------------------------------|------------------------------|-------------------------------------------------------------------------|--------------------------------|-------------------------------|------------------------------------------|---------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------|
| E-PLUS                                     | d [mm]                               |                              | h <sub>min</sub> [mm]                                                   | d <sub>0</sub> [mm]            | h <sub>1</sub> [mm]           | h <sub>nom</sub> [mm]                    | h <sub>ef</sub> [mm]                                    | S <sub>cr</sub> [mm]                              | C <sub>cr</sub> [mm]                                                   | S <sub>min</sub> [mm]                 | C <sub>min</sub> [mm]                                           |
| Çatlaksız beton<br>Non cracked<br>Concrete |                                      |                              | min med max                                                             |                                | min med max                   | min med max                              | min med max                                             | min med max                                       | min med max                                                            |                                       |                                                                 |
|                                            | Ø 8                                  | Rebar (*)                    | 100 110 190                                                             | 10-12                          | 65 85 165                     | 60 80 160                                | 60 80 160                                               | 120 160 320                                       | 60 80 160                                                              | 40                                    | 40                                                              |
|                                            | Ø 10                                 | Rebar (*)                    | 100 120 230                                                             | 12-14                          | 75 95 205                     | 70 90 200                                | 70 90 200                                               | 140 180 400                                       | 70 90 200                                                              | 50                                    | 45                                                              |
|                                            | Ø 12                                 | Rebar (*)                    | 102 142 275                                                             | 14-16                          | 85 115 245                    | 80 110 240                               | 80 110 240                                              | 160 220 480                                       | 80 110 240                                                             | 60                                    | 45                                                              |
|                                            | Ø 14                                 | Rebar (*)                    | 116 161 316                                                             | 18                             | 85 130 285                    | 80 125 280                               | 80 125 280                                              | 160 250 560                                       | 80 125 280                                                             | 70                                    | 50                                                              |
|                                            | Ø 16                                 | Rebar (*)                    | 120 180 360                                                             | 20                             | 85 145 325                    | 100 140 320                              | 100 140 320                                             | 200 280 640                                       | 100 140 320                                                            | 80                                    | 50                                                              |
|                                            | Ø 20                                 | Rebar (*)                    | 140 220 450                                                             | 25                             | 125 175 405                   | 120 170 400                              | 120 170 400                                             | 240 340 800                                       | 120 170 400                                                            | 100                                   | 65                                                              |
|                                            | Ø 22                                 | Rebar (*)                    | 172 252 492                                                             | 26                             | 125 205 445                   | 120 200 440                              | 120 200 440                                             | 240 400 880                                       | 120 200 440                                                            | 105                                   | 65                                                              |
|                                            | Ø 25                                 | Rebar (*)                    | 210 270 560                                                             | 30-32                          | 155 215 505                   | 150 210 500                              | 100 210 500                                             | 200 420 1000                                      | 100 210 500                                                            | 125                                   | 70                                                              |
|                                            | Ø 28                                 | Rebar (*)                    | 250 340 630                                                             | 35                             | 117 275 565                   | 180 270 560                              | 150 270 560                                             | 300 540 1120                                      | 150 270 560                                                            | 140                                   | 75                                                              |
| Ø 30                                       | Rebar (*)                            | 250 340 670                  | 35                                                                      | 185 275 605                    | 180 270 600                   | 180 270 600                              | 360 540 1200                                            | 180 270 600                                       | 150                                                                    | 80                                    |                                                                 |
| Ø 32                                       | Rebar (*)                            | 208 380 720                  | 40                                                                      | 205 305 645                    | 200 300 640                   | 200 300 640                              | 400 600 1280                                            | 128 300 640                                       | 150                                                                    | 80                                    |                                                                 |

(\*) Rebar = B450C; BST 500

Ankrajlama teorisine uygun uygulamalar için geçerli kurulum parametreleri > Parametri d'installazione validi per applicazioni in accordo alla teoria dell'ancoraggio  
Installation parameters suitable for application according to the anchors theory > Installationsparameter in Übereinstimmung mit der Verankerungstheorie

| MALZEME MATERIAL                                            | DIAMETRO BARRA ROD DIAMETER | ÇUBUK TIPI TYPE OF ROD  | TABAN MALZEMENİN ASGARI KALINLIĞI MIN. THICKNESS BASE MATERIAL | DELİK ÇAPI HOLE DIAMETER | DELİK DERİNLİĞİ HOLE DEPTH | YERLEŞTİRME DERİNLİĞİ EMBEDMENT DEPTH | ETKİLİ ANKRAJ DERİNLİĞİ EFFECTIVE ANCHORAGE DEPTH | KARAKTERİSTİK ARALIK CHARACTERISTIC SPACING | KENARA OLAN KARAKTERİSTİK MESAFE CHARACTERISTIC EDGE DISTANCE | ASGARI ARALIK ALLOWABLE SPACING | KENARA OLAN ASGARI MESAFE MIN. ALLOWABLE EDGE DISTANCE | TESPİT KALINLIĞI MAX FIXTURE THICKNESS | TESPİT KALINLIĞI DELİK ÇAPI DIAMETER OF CLEARANCE HOLE IN THE FIXTURE | ANAHTAR KEY | SIKMA TORKU INSTALLATION TORQUE |
|-------------------------------------------------------------|-----------------------------|-------------------------|----------------------------------------------------------------|--------------------------|----------------------------|---------------------------------------|---------------------------------------------------|---------------------------------------------|---------------------------------------------------------------|---------------------------------|--------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|-------------|---------------------------------|
| E-PLUS                                                      | d [mm]                      |                         | $h_{min}$ [mm]                                                 | $d_0$ [mm]               | $h_1$ [mm]                 | $h_{nom}$ [mm]                        | $h_{ef}$ [mm]                                     | $S_{cr}$ [mm]                               | $C_{cr}$ [mm]                                                 | $S_{min}$ [mm]                  | $C_{min}$ [mm]                                         | $t_{fx}$ [mm]                          | $d_f$ [mm]                                                            | $S_w$ [mm]  | $T_{inst}$ [Nm]                 |
| Dolu tuğla<br>Mattone pieno<br>Solid Brick<br>Vollmauerwerk | M8                          | ≥ 4.6<br>A2-70<br>A4-70 | 200                                                            | 10                       | 85                         | 80                                    | 80                                                | 160                                         | 200                                                           | 100                             | 100                                                    | 10                                     | 9                                                                     | 13          | 7                               |
|                                                             | M10                         | ≥ 4.6<br>A2-70<br>A4-70 | 250                                                            | 12                       | 90                         | 85                                    | 85                                                | 200                                         | 200                                                           | 100                             | 100                                                    | 20                                     | 12                                                                    | 17          | 15                              |
|                                                             | M12                         | ≥ 4.6<br>A2-70<br>A4-70 | 300                                                            | 14                       | 100                        | 95                                    | 95                                                | 240                                         | 200                                                           | 100                             | 100                                                    | 30                                     | 14                                                                    | 19          | 25                              |
|                                                             | M16                         | ≥ 4.6<br>A2-70<br>A4-70 | 350                                                            | 18                       | 130                        | 125                                   | 125                                               | 320                                         | 200                                                           | 100                             | 100                                                    | 35                                     | 18                                                                    | 24          | 30                              |

| MALZEME MATERIAL                                     | DIAMETRO BARRA ROD DIAMETER | ÇUBUK TIPI TYPE OF ROD  | TABAN MALZEMENİN ASGARI KALINLIĞI MIN. THICKNESS BASE MATERIAL | DELİK ÇAPI HOLE DIAMETER | DELİK DERİNLİĞİ HOLE DEPTH | YERLEŞTİRME DERİNLİĞİ EMBEDMENT DEPTH | ETKİLİ ANKRAJ DERİNLİĞİ EFFECTIVE ANCHORAGE DEPTH | KARAKTERİSTİK ARALIK CHARACTERISTIC SPACING | KENARA OLAN KARAKTERİSTİK MESAFE CHARACTERISTIC EDGE DISTANCE | ASGARI ARALIK ALLOWABLE SPACING | KENARA OLAN ASGARI MESAFE MIN. ALLOWABLE EDGE DISTANCE | TESPİT KALINLIĞI MAX FIXTURE THICKNESS | TESPİT KALINLIĞI DELİK ÇAPI DIAMETER OF CLEARANCE HOLE IN THE FIXTURE | ANAHTAR KEY | SIKMA TORKU INSTALLATION TORQUE |
|------------------------------------------------------|-----------------------------|-------------------------|----------------------------------------------------------------|--------------------------|----------------------------|---------------------------------------|---------------------------------------------------|---------------------------------------------|---------------------------------------------------------------|---------------------------------|--------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|-------------|---------------------------------|
| E-PLUS                                               | d [mm]                      |                         | $h_{min}$ [mm]                                                 | $d_0$ [mm]               | $h_1$ [mm]                 | $h_{nom}$ [mm]                        | $h_{ef}$ [mm]                                     | $S_{cr}$ [mm]                               | $C_{cr}$ [mm]                                                 | $S_{min}$ [mm]                  | $C_{min}$ [mm]                                         | $t_{fx}$ [mm]                          | $d_f$ [mm]                                                            | $S_w$ [mm]  | $T_{inst}$ [Nm]                 |
| Lamine ahşap<br>Legno lamellare<br>Laminated<br>Holz | M8                          | ≥ 4.6<br>A2-70<br>A4-70 | 160                                                            | 10                       | 85                         | 80                                    | 80                                                | 100                                         | 80                                                            | 50                              | 50                                                     | 10                                     | 9                                                                     | 13          | 7                               |
|                                                      | M10                         | ≥ 4.6<br>A2-70<br>A4-70 | 200                                                            | 12                       | 105                        | 100                                   | 100                                               | 125                                         | 100                                                           | 50                              | 50                                                     | 20                                     | 12                                                                    | 17          | 15                              |
|                                                      | M12                         | ≥ 4.6<br>A2-70<br>A4-70 | 240                                                            | 14                       | 125                        | 120                                   | 120                                               | 150                                         | 120                                                           | 60                              | 60                                                     | 30                                     | 14                                                                    | 19          | 25                              |
|                                                      | M16                         | ≥ 4.6<br>A2-70<br>A4-70 | 320                                                            | 18                       | 165                        | 160                                   | 160                                               | 200                                         | 160                                                           | 80                              | 80                                                     | 35                                     | 18                                                                    | 24          | 30                              |



# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT

## Yük verileri | Dati carico | Load data | Lastdaten

|          |                |                                                                                                                                |
|----------|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>D</b> | $N_{rk}$ [kN]  | Son ortalama çekme yükü > Carico ultimo medio a trazione<br>Average ultimate tension load > Durchschnittliche maximale Zuglast |
| <b>N</b> | $V_{rk}$ [kN]  | Son ortalama kesme yükü > Carico ultimo medio a taglio<br>Average ultimate shear load > Durchschnittliche maximale Querlast    |
| <b>E</b> | $N_{rd}$ [kN]  | Karakteristik çekme yükü > Carico caratteristico a trazione<br>Characteristic tension load > Charakteristische Zuglast         |
| <b>G</b> | $V_{rd}$ [kN]  | Karakteristik kesme yükü > Carico caratteristico a taglio<br>Characteristic shear load > Charakteristische Querlast            |
| <b>L</b> | $N_{rec}$ [kN] | İzin verilen çekme yükü > Carico ammissibile a trazione > Admissible tensile load > Zulässige Zuglast                          |
| <b>E</b> | $V_{rec}$ [kN] | İzin verilen kesme yükü > Carico ammissibile a taglio > Admissible shear load > Zulässige Querlast                             |

>  $h \geq 2h_{ef}$  olduğun, aralık ve kenara olan mesafe etkisi olmadan için bir ankraj için geçerli yükler  
> Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo e  $h \geq 2h_{ef}$   
> Loads for single anchor with no influence of spacing and edge distance and with  $h \geq 2h_{ef}$   
> Passende Ringe für den einzelnen Veranker, ohne Achsenabstandseinfluss und des Randabstands und  $h \geq 2h_{ef}$

> Kesme eylemi kenar yönünde değildir  
> Azione di taglio non diretta verso il bordo  
> Shear directed away from the edge  
> Queraktion nicht an den Rand gerichtet

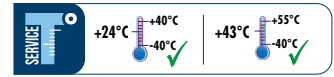
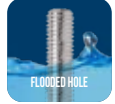
> Genel güvenlik katsayısı dahilidir  
> Coefficiente di sicurezza globale incluso  
> General safety factor included  
> Generelle Sicherheitskoeffizient inbegriffen

> Kullanılan yük tarafı katsayısı = 1,4  
> Coefficiente lato carichi utilizzato = 1,4  
> Load increasing safety coefficient used = 1,4  
> Verwendeter Lasterhöhungssicherheitskoeffizient = 1,4

**MIN** MINIMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MINIMA  
Load data with MINIMUM effective anchorage depth > Lastdaten mit MINIMALER effektiven Verankerungstiefe

|                                                                                                       | MATERIALE<br>MATERIAL | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ<br>EFF. ANCORAGGIO<br>EFFECTIVE<br>ANCHORAGE DEPTH | CARICO CARATTERISTICO A<br>TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | CARICO CARATTERISTICO<br>A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | CARICO DI PROGETTO<br>DI TRAZIONE<br>DESIGN TENSILE LOAD | CARICO DI PROGETTO<br>DI TAGLIO<br>DESIGN SHEAR LOAD | CARICO AMMISSIBILE<br>A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | CARICO AMMISSIBILE<br>A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|--------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                                         |                       |              | d [mm]                         | $h_{ef\ MIN}$ [mm]                                            | $N_{Rk}$ [kN]                                                         | $V_{Rk}$ [kN]                                                  | $N_{rd}$ [kN]                                            | $V_{rd}$ [kN]                                        | $N_{rec}$ [kN]                                              | $V_{rec}$ [kN]                                          |
| <br><b>C20/25</b><br>Calcestruzzo fessurato<br>Cracked Concrete<br>Beton fissuré<br>Gerissener Beton |                       | ≥ 5.8        | M 12                           | 70                                                            | 18,5                                                                  | 34,0                                                           | 12,3                                                     | 24,6                                                 | 8,8                                                         | 17,6                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        | M 16                           | 80                                                            | 24,6                                                                  | 49,3                                                           | 16,4                                                     | 32,9                                                 | 11,7                                                        | 23,5                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        | M 20                           | 90                                                            | 29,4                                                                  | 58,8                                                           | 19,6                                                     | 39,2                                                 | 14,0                                                        | 28,0                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        | M 24                           | 96                                                            | 32,4                                                                  | 64,8                                                           | 21,6                                                     | 43,2                                                 | 15,4                                                        | 30,8                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        | M 27                           | 110                                                           | 39,7                                                                  | 79,5                                                           | 26,5                                                     | 53,0                                                 | 18,9                                                        | 37,8                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        | M 30                           | 120                                                           | 45,3                                                                  | 90,5                                                           | 30,2                                                     | 60,4                                                 | 21,6                                                        | 43,1                                                    |
|                                                                                                                                                                                         |                       | ≥ 5.8        |                                |                                                               |                                                                       |                                                                |                                                          |                                                      |                                                             |                                                         |

Delik su dolu olduğunda, tavsiye edilen yük azaltması %20'dir  
With flooded hole, reduction of the recommended load of 20%



**MED** ORTA etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MEDIA  
Load data with MEDIUM effective anchorage depth > Lastdaten mit MITTLERER effektiven Verankerungstiefe

|                                                                                                      | MATERIALE<br>MATERIAL | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ<br>EFF. ANCORAGGIO<br>EFFECTIVE<br>ANCHORAGE DEPTH | CARICO CARATTERISTICO A<br>TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | CARICO CARATTERISTICO<br>A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | CARICO DI PROGETTO<br>DI TRAZIONE<br>DESIGN TENSILE LOAD | CARICO DI PROGETTO<br>DI TAGLIO<br>DESIGN SHEAR LOAD | CARICO AMMISSIBILE<br>A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | CARICO AMMISSIBILE<br>A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|--------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                                         |                       |              | d [mm]                         | $h_{ef\ MED}$ [mm]                                            | $N_{Rk}$ [kN]                                                         | $V_{Rk}$ [kN]                                                  | $N_{Rd}$ [kN]                                            | $V_{Rd}$ [kN]                                        | $N_{Rec}$ [kN]                                              | $V_{Rec}$ [kN]                                          |
| <br><b>C20/25</b><br>Calcestruzzo fessurato<br>Cracked Concrete<br>Beton fissuré<br>Gerissener Beton |                       | 8.8          | M 12                           | 110                                                           | 32,9                                                                  | 34,0                                                           | 19,3                                                     | 27,2                                                 | 13,8                                                        | 19,4                                                    |
|                                                                                                                                                                                         |                       | 8.8          | M 16                           | 125                                                           | 47,1                                                                  | 63,0                                                           | 31,4                                                     | 50,4                                                 | 22,4                                                        | 36,0                                                    |
|                                                                                                                                                                                         |                       | 8.8          | M 20                           | 170                                                           | 74,7                                                                  | 98,0                                                           | 49,8                                                     | 78,4                                                 | 35,6                                                        | 56,0                                                    |
|                                                                                                                                                                                         |                       | 8.8          | M 24                           | 210                                                           | 104,8                                                                 | 141,0                                                          | 69,9                                                     | 112,8                                                | 49,9                                                        | 80,6                                                    |
|                                                                                                                                                                                         |                       | 8.8          | M 27                           | 240                                                           | 128,0                                                                 | 184,0                                                          | 85,4                                                     | 147,2                                                | 61,0                                                        | 105,1                                                   |
|                                                                                                                                                                                         |                       | 8.8          | M 30                           | 270                                                           | 152,8                                                                 | 224,0                                                          | 101,8                                                    | 179,2                                                | 72,7                                                        | 128,0                                                   |

**MAX** MAKΣIMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MASSIMO  
Load data with MAXIMUM effective anchorage depth > Lastdaten mit MAXIMALER effektiven Verankerungstiefe

|  MATERIALE<br>MATERIAL                                                                               |            | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ EFF. ANCO-<br>RAGGIO<br>EFFECTIVE<br>ANCHORAGE DEPTH | CARICO CARATTERISTICO A<br>TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | CARICO CARATTERISTICO<br>A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | CARICO DI PROGETTO<br>DI TRAZIONE<br>DESIGN TENSILE LOAD | CARICO DI PROGETTO<br>DI TAGLIO<br>DESIGN SHEAR LOAD | CARICO AMMISSIBILE<br>A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | CARICO AMMISSIBILE<br>A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|--------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                                         |            |              | d [mm]                         | $h_{ef\ MAX}$ [mm]                                              | $N_{Rk}$ [kN]                                                         | $V_{Rk}$ [kN]                                                  | $N_{rd}$ [kN]                                            | $V_{rd}$ [kN]                                        | $N_{rec}$ [kN]                                              | $V_{rec}$ [kN]                                          |
| <br><b>C20/25</b><br>Calcestruzzo fessurato<br>Cracked Concrete<br>Beton fissuré<br>Gerissener Beton | <b>8.8</b> | 8.8          | M 12                           | 240                                                             | 63,3                                                                  | 34,0                                                           | 42,2                                                     | 27,2                                                 | 30,1                                                        | 19,4                                                    |
|                                                                                                                                                                                         |            | 8.8          | M 16                           | 320                                                             | 120,5                                                                 | 63,0                                                           | 80,3                                                     | 50,4                                                 | 57,4                                                        | 36,0                                                    |
|                                                                                                                                                                                         |            | 8.8          | M 20                           | 400                                                             | 175,8                                                                 | 98,0                                                           | 117,2                                                    | 78,4                                                 | 83,7                                                        | 56,0                                                    |
|                                                                                                                                                                                         |            | 8.8          | M 24                           | 480                                                             | 289,2                                                                 | 141,0                                                          | 192,8                                                    | 112,8                                                | 137,7                                                       | 80,6                                                    |
|                                                                                                                                                                                         |            | 8.8          | M 27                           | 540                                                             | 320,3                                                                 | 184,0                                                          | 213,5                                                    | 147,2                                                | 152,5                                                       | 105,1                                                   |
|                                                                                                                                                                                         |            | 8.8          | M 30                           | 600                                                             | 367,2                                                                 | 224,0                                                          | 244,8                                                    | 179,9                                                | 174,9                                                       | 128,0                                                   |



## Yük verileri | Dati carico | Load data | Lastdaten

|                                  |                |                                                                                                                                |
|----------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>D<br/>E<br/>N<br/>E<br/>L</b> | $N_{rk}$ [kN]  | Son ortalama çekme yükü > Carico ultimo medio a trazione<br>Average ultimate tension load > Durchschnittliche maximale Zuglast |
|                                  | $V_{rk}$ [kN]  | Son ortalama kesme yükü > Carico ultimo medio a taglio<br>Average ultimate shear load > Durchschnittliche maximale Querlast    |
|                                  | $N_{rd}$ [kN]  | Karakteristik çekme yükü > Carico caratteristico a trazione<br>Characteristic tension load > Charakteristische Zuglast         |
|                                  | $V_{rd}$ [kN]  | Karakteristik kesme yükü > Carico caratteristico a taglio<br>Characteristic shear load > Charakteristische Querlast            |
|                                  | $N_{rec}$ [kN] | İzin verilen çekme yükü > Carico ammissibile a trazione > Admissible tensile load > Zulässige Zuglast                          |
|                                  | $V_{rec}$ [kN] | İzin verilen kesme yükü > Carico ammissibile a taglio > Admissible shear load > Zulässige Querlast                             |

>  $h \geq 2h_{ef}$  olduğun, aralık ve kenara olan mesafe etkisi olmadan için her bir ankraj için geçerli yükler  
> Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo e  $h \geq 2h_{ef}$   
> Loads for single anchor with no influence of spacing and edge distance and with  $h \geq 2h_{ef}$   
> Passende Ringe für den einzelnen Veranker, ohne Achsenabstandseinfluss und des Randabstands und  $h \geq 2h_{ef}$

> Kesme eylemi kenar yönünde değildir  
> Azione di taglio non diretta verso il bordo  
> Shear directed away from the edge  
> Queraktion nicht an den Rand gerichtet

> Genel güvenlik katsayısı dahildir  
> Coefficiente di sicurezza globale incluso  
> General safety factor included  
> Generelle Sicherheitskoeffizient inbegriffen

> Kullanılan yük tarafı katsayısı = 1,4  
> Coefficiente lato carichi utilizzato = 1,4  
> Load increasing safety coefficient used = 1,4  
> Verwendeter Lasterhöhungssicherheitskoeffizient = 1,4

**MIN** MINIMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MINIMA  
Load data with MINIMUM effective anchorage depth > Lastdaten mit MINIMALER effektiven Verankerungstiefe

|                                                                                                                     | MATERIALE<br>MATERIAL                                                                               | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ EFF. ANCORAGGIO<br>EFFECTIVE ANCHORAGE DEPTH | CARICO CARATTERISTICO A<br>TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | CARICO CARATTERISTICO<br>A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | CARICO DI PROGETTO<br>DI TRAZIONE<br>DESIGN TENSILE LOAD | CARICO DI PROGETTO<br>DI TAGLIO<br>DESIGN SHEAR LOAD | CARICO AMMISSIBILE<br>A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | CARICO AMMISSIBILE<br>A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------|--------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                                                       |                                                                                                     |              | d [mm]                         | $h_{ef\ MIN}$ [mm]                                      | $N_{rk}$ [kN]                                                         | $V_{rk}$ [kN]                                                  | $N_{rd}$ [kN]                                            | $V_{rd}$ [kN]                                        | $N_{rec}$ [kN]                                              | $V_{rec}$ [kN]                                          |
| <br><b>C20/25</b><br>Calcestruzzo non fessurato<br>Non cracked Concrete<br>Béton non fissuré<br>Ungerissener Beton | <br><b>≥ 5.8</b> | ≥ 5.8        | M 8                            | 60                                                      | 19,0                                                                  | 9,0                                                            | 12,7                                                     | 7,2                                                  | 9,0                                                         | 5,1                                                     |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 10                           | 60                                                      | 22,9                                                                  | 14,0                                                           | 15,2                                                     | 11,2                                                 | 10,9                                                        | 8,0                                                     |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 12                           | 70                                                      | 28,8                                                                  | 21,0                                                           | 19,2                                                     | 16,8                                                 | 13,7                                                        | 12,0                                                    |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 16                           | 80                                                      | 35,2                                                                  | 39,0                                                           | 23,5                                                     | 31,2                                                 | 16,8                                                        | 22,3                                                    |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 20                           | 90                                                      | 42,0                                                                  | 61,0                                                           | 28,0                                                     | 48,8                                                 | 20,0                                                        | 34,9                                                    |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 24                           | 96                                                      | 46,3                                                                  | 88,0                                                           | 30,8                                                     | 61,7                                                 | 22,0                                                        | 44,1                                                    |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 27                           | 110                                                     | 56,8                                                                  | 113,5                                                          | 37,8                                                     | 75,7                                                 | 27,0                                                        | 54,1                                                    |
|                                                                                                                                                                                                       |                                                                                                     | ≥ 5.8        | M 30                           | 120                                                     | 64,7                                                                  | 129,3                                                          | 43,1                                                     | 86,2                                                 | 30,8                                                        | 61,6                                                    |

**MED** ORTA etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MEDIA  
Load data with MEDIUM effective anchorage depth > Lastdaten mit MITTLERER effektiven Verankerungstiefe

|  MATERIALE<br>MATERIAL                                                                                          | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ EFF. ANCORAGGIO<br>EFFECTIVE ANCHORAGE DEPTH | CARICO CARATTERISTICO A<br>TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | CARICO CARATTERISTICO<br>A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | CARICO DI PROGETTO<br>DI TRAZIONE<br>DESIGN TENSILE LOAD | CARICO DI PROGETTO<br>DI TAGLIO<br>DESIGN SHEAR LOAD | CARICO AMMISSIBILE<br>A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | CARICO AMMISSIBILE<br>A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                                                    |              | d [mm]                         | $h_{ef\ MED}$ [mm]                                      | $N_{Rk}$ [kN]                                                         | $V_{Rk}$ [kN]                                                  | $N_{rd}$ [kN]                                            | $V_{rd}$ [kN]                                        | $N_{rec}$ [kN]                                              | $V_{rec}$ [kN]                                          |
|  <b>C20/25</b><br>Calcestruzzo non fessurato<br>Non cracked Concrete<br>Béton non fissuré<br>Ungerissener Beton | 8.8          | M 8                            | 80                                                      | 29,2                                                                  | 15,0                                                           | 19,5                                                     | 12,0                                                 | 13,9                                                        | 8,6                                                     |
|                                                                                                                                                                                                    | 8.8          | M 10                           | 90                                                      | 42,0                                                                  | 23,0                                                           | 28,0                                                     | 18,4                                                 | 20,0                                                        | 13,1                                                    |
|                                                                                                                                                                                                    | 8.8          | M 12                           | 110                                                     | 56,8                                                                  | 34,0                                                           | 37,8                                                     | 27,2                                                 | 27,0                                                        | 19,4                                                    |
|                                                                                                                                                                                                    | 8.8          | M 16                           | 125                                                     | 68,8                                                                  | 63,0                                                           | 45,8                                                     | 50,4                                                 | 32,7                                                        | 36,0                                                    |
|                                                                                                                                                                                                    | 8.8          | M 20                           | 170                                                     | 109,0                                                                 | 98,0                                                           | 72,7                                                     | 78,4                                                 | 51,9                                                        | 56,0                                                    |
|                                                                                                                                                                                                    | 8.8          | M 24                           | 210                                                     | 149,7                                                                 | 141,0                                                          | 99,8                                                     | 112,8                                                | 71,3                                                        | 80,6                                                    |
|                                                                                                                                                                                                    | 8.8          | M 27                           | 240                                                     | 182,9                                                                 | 184,0                                                          | 121,9                                                    | 147,2                                                | 87,1                                                        | 105,1                                                   |
|                                                                                                                                                                                                    | 8.8          | M 30                           | 270                                                     | 218,2                                                                 | 224,0                                                          | 145,5                                                    | 179,2                                                | 103,9                                                       | 128,0                                                   |

**MAX** MAKSİMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MASSIMO  
Load data with MAXIMUM effective anchorage depth > Lastdaten mit MAXIMALER effektiven Verankerungstiefe

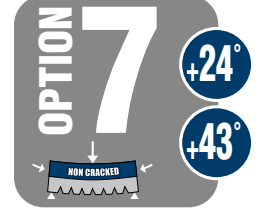
|  MATERIALE<br>MATERIAL                                                                                      | BARRA<br>ROD | DIAMETRO BARRA<br>ROD DIAMETER | PROFONDITÀ EFF. ANCORAGGIO   | CARICO CARATTERISTICO A                    | CARICO CARATTERISTICO                 | CARICO DI PROGETTO                 | CARICO DI PROGETTO             | CARICO AMMISSIBILE                    | CARICO AMMISSIBILE                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------|------------------------------|--------------------------------------------|---------------------------------------|------------------------------------|--------------------------------|---------------------------------------|-----------------------------------|
|                                                                                                                                                                                                |              |                                | EFFECTIVE<br>ANCHORAGE DEPTH | TRAZIONE<br>CHARACTERISTIC TENSILE<br>LOAD | A TAGLIO<br>CHARACTERISTIC SHEAR LOAD | DI TRAZIONE<br>DESIGN TENSILE LOAD | DI TAGLIO<br>DESIGN SHEAR LOAD | A TRAZIONE<br>ADMISSIBLE TENSILE LOAD | A TAGLIO<br>ADMISSIBLE SHEAR LOAD |
| <br>C20/25<br>Calcestruzzo non fessurato<br>Non cracked Concrete<br>Béton non fissuré<br>Ungerissener Beton | 8.8          | d [mm]                         | h <sub>ef</sub> MAX [mm]     | N <sub>rk</sub> [kN]                       | V <sub>rk</sub> [kN]                  | N <sub>rd</sub> [kN]               | V <sub>rd</sub> [kN]           | N <sub>rec</sub> [kN]                 | V <sub>rec</sub> [kN]             |
|                                                                                                                                                                                                |              | M 8                            | 160                          | 29,2                                       | 15,0                                  | 19,5                               | 12,0                           | 13,9                                  | 8,6                               |
|                                                                                                                                                                                                |              | M 10                           | 200                          | 46,4                                       | 23,0                                  | 30,9                               | 18,4                           | 22,1                                  | 13,1                              |
|                                                                                                                                                                                                |              | M 12                           | 240                          | 67,4                                       | 34,0                                  | 44,9                               | 27,2                           | 32,1                                  | 19,4                              |
|                                                                                                                                                                                                |              | M 16                           | 320                          | 125,0                                      | 63,0                                  | 83,3                               | 50,4                           | 59,5                                  | 36,0                              |
|                                                                                                                                                                                                |              | M 20                           | 400                          | 203,0                                      | 98,0                                  | 135,3                              | 78,4                           | 96,7                                  | 56,0                              |
|                                                                                                                                                                                                |              | M 24                           | 480                          | 293,0                                      | 141,0                                 | 195,3                              | 112,8                          | 139,5                                 | 80,6                              |
|                                                                                                                                                                                                |              | M 27                           | 540                          | 381,0                                      | 184,0                                 | 254,0                              | 147,2                          | 181,4                                 | 105,1                             |
| <br>8.8                                                                                                     |              | M 30                           | 600                          | 466,0                                      | 224,0                                 | 310,7                              | 179,2                          | 221,9                                 | 128,0                             |



# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT

## Yük verileri | Dati carico | Load data | Lastdaten

|                            |                |                                                                                                                                |
|----------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| L<br>E<br>G<br>E<br>N<br>D | $N_{rk}$ [kN]  | Son ortalama çekme yükü > Carico ultimo medio a trazione<br>Average ultimate tension load > Durchschnittliche maximale Zuglast |
|                            | $V_{rk}$ [kN]  | Son ortalama kesme yükü > Carico ultimo medio a taglio<br>Average ultimate shear load > Durchschnittliche maximale Querlast    |
|                            | $N_{rd}$ [kN]  | Tasarım çekme yükü > Carico di progetto di trazione<br>Design tensile load > Projektlast Zuglast                               |
|                            | $V_{rd}$ [kN]  | Tasarım kesme yükü > Carico di progetto di taglio > Design shear load > Projektlast Querlast                                   |
|                            | $N_{rec}$ [kN] | İzin verilen çekme yükü > Carico ammissibile a trazione > Admissible tensile load > Zulässige Zuglast                          |
|                            | $V_{rec}$ [kN] | İzin verilen kesme yükü > Carico ammissibile a taglio > Admissible shear load > Zulässige Querlast                             |



- > Applicazioni in accordo alla teoria dell'ancoraggio
- > Application according to the anchors theory
- > Application en conformité avec la théorie de l'ancrage
- > Anwendung in Übereinstimmung mit der Verankerungstheorie

- >  $h \geq 2h_{ef}$  olduğun, aralık ve kenara olan mesafe etkisi olmadan için her bir ankraj için geçerli yükler
- > Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo e  $h \geq 2h_{ef}$
- > Loads for single anchor with no influence of spacing and edge distance and with  $h \geq 2h_{ef}$
- > Passende Ringe für den einzelnen Veranker, ohne Achsenabstandseinfluss und des Randabstands und  $h \geq 2h_{ef}$

- > 1kN = 100 Kg
- >  $\psi_{suz} = 1,0$

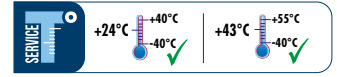
- > Kesme eylemi kenar yönünde değildir
- > Azione di taglio non diretta verso il bordo
- > Shear directed away from the edge
- > Queraktion nicht an den Rand gerichtet
- > Genel güvenlik katsayısı dahilidir
- > Coefficiente di sicurezza globale incluso
- > General safety factor included
- > Generelle Sicherheitskoeffizient inbegriffen
- > Kullanılan yük tarafı katsayısı = 1,4
- > Coefficiente lato carichi utilizzato = 1,4
- > Load increasing safety coefficient used = 1,4
- > Verwendeter Lasterhöhungssicherheitskoeffizient = 1,4

Delik su dolu olduğunda, tavsiye edilen yük azaltması %20'dir  
With flooded hole, reduction of the recommended load of 20%



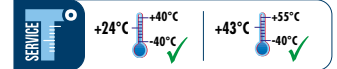
## MIN MINIMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MINIMA Load data with MINIMUM effective anchorage depth > Lastdaten mit MINIMALER effektiven Verankerungstiefe

|                                         | ÇUBUK MATERIAL             | ÇUBUK ÇAPİ<br>ROD DIAMETER | ETKİLİ ANKRAJ DERİNLİĞİ<br>EFFECTIVE ANCHORAGE DEPTH | KARAKTERİSTİK ÇEKME YÜKÜ<br>CHARACTERISTIC TENSILE LOAD | KARAKTERİSTİK KESME YÜKÜ<br>CHARACTERISTIC SHEAR LOAD | TASARIM ÇEKME YÜKÜ<br>DESIGN TENSILE LOAD | TASARIM KESME YÜKÜ:<br>DESIGN SHEAR LOAD | İZİN VERİLEN ÇEKME YÜKÜ<br>ADMISSIBLE TENSILE LOAD | İZİN VERİLEN KESME YÜKÜ<br>ADMISSIBLE SHEAR LOAD |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------------|
|                                                                                                                           |                            | d [mm]                     | $h_{ef MIN}$ [mm]                                    | $N_{Rk}$ [kN]                                           | $V_{Rk}$ [kN]                                         | $N_{Ed}$ [kN]                             | $V_{Ed}$ [kN]                            | $N_{rec}$ [kN]                                     | $V_{rec}$ [kN]                                   |
|  <div>Rebar<br/>B450C<br/>BST500</div> | C20/25                     | Ø8                         | 60                                                   | 22,6                                                    | 13,5                                                  | 16,2                                      | 9,0                                      | 11,5                                               | 6,4                                              |
|                                                                                                                           | Çatlaksız beton            | Ø10                        | 70                                                   | 28,8                                                    | 21,3                                                  | 19,2                                      | 14,2                                     | 13,7                                               | 10,2                                             |
|                                                                                                                           | Calcestruzzo non fessurato | Ø12                        | 80                                                   | 35,2                                                    | 30,5                                                  | 23,5                                      | 20,3                                     | 16,8                                               | 14,5                                             |
|                                                                                                                           | Non cracked Concrete       | Ø14                        | 80                                                   | 35,2                                                    | 41,6                                                  | 23,5                                      | 27,7                                     | 16,8                                               | 19,8                                             |
|                                                                                                                           | Ungerissener Beton         | Ø16                        | 100                                                  | 49,2                                                    | 54,3                                                  | 32,8                                      | 36,2                                     | 23,4                                               | 25,8                                             |
|                                                                                                                           |                            | Ø20                        | 120                                                  | 64,7                                                    | 84,8                                                  | 43,1                                      | 56,5                                     | 30,8                                               | 40,4                                             |
|                                                                                                                           |                            | Ø22                        | 120                                                  | 64,7                                                    | 102,6                                                 | 43,1                                      | 68,4                                     | 30,8                                               | 48,9                                             |
|                                                                                                                           |                            | Ø25                        | 150                                                  | 90,4                                                    | 132,6                                                 | 60,2                                      | 88,4                                     | 43,0                                               | 63,1                                             |
|                                                                                                                           |                            | Ø28                        | 180                                                  | 118,8                                                   | 166,3                                                 | 79,2                                      | 110,9                                    | 56,6                                               | 79,2                                             |
|                                                                                                                           |                            | Ø30                        | 180                                                  | 118,8                                                   | 190,9                                                 | 79,2                                      | 127,3                                    | 56,6                                               | 90,9                                             |
|                                                                                                                           |                            | Ø32                        | 200                                                  | 139,1                                                   | 217,1                                                 | 92,8                                      | 144,7                                    | 66,3                                               | 103,4                                            |



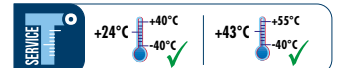
## MED ORTA etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MEDIA Load data with MEDIUM effective anchorage depth > Lastdaten mit MITTLERER effektiven Verankerungstiefe

|                                                                                                           | ÇUBUK<br>MATERIAL                                                                   | ÇUBUK ÇAPİ<br>ROD DIAMETER | ETKİLİ ANKRAJ DERİNLİĞİ<br>EFFECTIVE<br>ANCHORAGE DEPTH | KARAKTERİSTİK ÇEKME YÜKÜ<br>CHARACTERISTIC TENSILE LOAD | KARAKTERİSTİK KESME YÜKÜ<br>CHARACTERISTIC SHEAR LOAD | TASARIM ÇEKME YÜKÜ<br>DESİGN TENSILE LOAD | TASARIM KESME YÜKÜ:<br>DESİGN SHEAR LOAD | İZİN VERİLEN ÇEKME YÜKÜ<br>ADMISSIBLE TENSILE LOAD | İZİN VERİLEN KESME YÜKÜ<br>ADMISSIBLE SHEAR LOAD |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------------|
|                                                                                                                                                                                              |                                                                                     | d [mm]                     | $h_{ef\ MED}$ [mm]                                      | $N_{sk}$ [kN]                                           | $V_{sk}$ [kN]                                         | $N_{sd}$ [kN]                             | $V_{sd}$ [kN]                            | $N_{sc}$ [kN]                                      | $V_{sc}$ [kN]                                    |
| <br>C20/25<br>Çatlaksız beton<br>Calcestruzzo non fessurato<br>Non cracked Concrete<br>Ungerissener Beton |                                                                                     | Ø8                         | 80                                                      | 27,1                                                    | 13,5                                                  | 19,4                                      | 9,0                                      | 13,8                                               | 6,4                                              |
|                                                                                                                                                                                              |                                                                                     | Ø10                        | 90                                                      | 42,0                                                    | 21,3                                                  | 28,0                                      | 14,2                                     | 20,0                                               | 10,2                                             |
|                                                                                                                                                                                              |                                                                                     | Ø12                        | 110                                                     | 56,8                                                    | 30,5                                                  | 37,8                                      | 20,3                                     | 27,0                                               | 14,5                                             |
|                                                                                                                                                                                              |                                                                                     | Ø14                        | 125                                                     | 68,8                                                    | 41,6                                                  | 45,8                                      | 27,7                                     | 32,7                                               | 19,8                                             |
|                                                                                                                                                                                              |                                                                                     | Ø16                        | 125                                                     | 68,8                                                    | 54,3                                                  | 45,8                                      | 36,2                                     | 32,7                                               | 25,8                                             |
|                                                                                                                                                                                              |                                                                                     | Ø20                        | 170                                                     | 109,0                                                   | 84,8                                                  | 72,7                                      | 56,5                                     | 51,9                                               | 40,4                                             |
|                                                                                                                                                                                              |                                                                                     | Ø22                        | 200                                                     | 139,1                                                   | 102,6                                                 | 92,8                                      | 68,4                                     | 66,3                                               | 48,9                                             |
|                                                                                                                                                                                              |                                                                                     | Ø25                        | 210                                                     | 149,7                                                   | 132,6                                                 | 99,8                                      | 88,4                                     | 71,3                                               | 63,1                                             |
|                                                                                                                                                                                              |                                                                                     | Ø28                        | 270                                                     | 218,2                                                   | 166,3                                                 | 145,5                                     | 110,9                                    | 103,9                                              | 79,2                                             |
|                                                                                                                                                                                              |                                                                                     | Ø30                        | 270                                                     | 218,2                                                   | 190,9                                                 | 145,5                                     | 127,3                                    | 103,9                                              | 90,9                                             |
|                                                                                                                                                                                              |                                                                                     | Ø32                        | 300                                                     | 255,6                                                   | 217,1                                                 | 170,4                                     | 144,7                                    | 121,7                                              | 103,4                                            |
|                                                                                                                                                                                              |  | Rebar<br>B450C<br>BST500   |                                                         |                                                         |                                                       |                                           |                                          |                                                    |                                                  |



## MAX MAKSİMUM etkili ankraj derinliği ile yük verileri > Dati di carico con profondità effettiva ancoraggio MASSIMO Load data with MAXIMUM effective anchorage depth > Lastdaten mit MAXIMALER effektiven Verankerungstiefe

|                                        | ÇUBUK<br>MATERIAL          | ÇUBUK ÇAPİ<br>ROD DIAMETER | ETKİLİ ANKRAJ DERİNLİĞİ<br>EFFECTIVE ANCHORAGE DEPTH | KARAKTERİSTİK ÇEKME YÜKÜ<br>CHARACTERISTIC TENSILE LOAD | KARAKTERİSTİK KESME YÜKÜ<br>CHARACTERISTIC SHEAR LOAD | TASARIM ÇEKME YÜKÜ<br>DESIGN TENSILE LOAD | TASARIM KESME YÜKÜ:<br>DESIGN SHEAR LOAD | İZİN VERİLEN ÇEKME YÜKÜ<br>ADMISSIBLE TENSILE LOAD | İZİN VERİLEN KESME YÜKÜ<br>ADMISSIBLE SHEAR LOAD |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------------|
|                                                                                                                           |                            | d [mm]                     | $h_{ef\ Max}$ [mm]                                   | $N_{Rk}$ [kN]                                           | $V_{Rk}$ [kN]                                         | $N_{Ed}$ [kN]                             | $V_{Rd}$ [kN]                            | $N_{Rec}$ [kN]                                     | $V_{Rec}$ [kN]                                   |
|  <div>Rebar<br/>B450C<br/>BST500</div> | C20/25                     | Ø8                         | 160                                                  | 27,1                                                    | 13,5                                                  | 19,4                                      | 9,0                                      | 13,8                                               | 6,4                                              |
|                                                                                                                           | Çatlaksız beton            | Ø10                        | 200                                                  | 42,2                                                    | 21,3                                                  | 28,3                                      | 14,2                                     | 20,2                                               | 10,2                                             |
|                                                                                                                           | Calcestruzzo non fessurato | Ø12                        | 240                                                  | 61,1                                                    | 30,5                                                  | 40,7                                      | 20,3                                     | 29,1                                               | 14,5                                             |
|                                                                                                                           | Non cracked Concrete       | Ø14                        | 280                                                  | 83,1                                                    | 41,6                                                  | 55,4                                      | 27,7                                     | 39,6                                               | 19,8                                             |
|                                                                                                                           | Ungerissener Beton         | Ø16                        | 320                                                  | 108,6                                                   | 54,3                                                  | 72,4                                      | 36,2                                     | 51,7                                               | 25,8                                             |
|                                                                                                                           |                            | Ø20                        | 400                                                  | 169,6                                                   | 84,8                                                  | 113,1                                     | 56,5                                     | 80,8                                               | 40,4                                             |
|                                                                                                                           |                            | Ø22                        | 440                                                  | 205,3                                                   | 102,6                                                 | 136,8                                     | 68,4                                     | 97,7                                               | 48,9                                             |
|                                                                                                                           |                            | Ø25                        | 500                                                  | 265,1                                                   | 132,6                                                 | 176,7                                     | 88,4                                     | 126,2                                              | 63,1                                             |
|                                                                                                                           |                            | Ø28                        | 560                                                  | 332,5                                                   | 166,3                                                 | 221,7                                     | 110,9                                    | 158,3                                              | 79,2                                             |
|                                                                                                                           |                            | Ø30                        | 600                                                  | 381,7                                                   | 190,9                                                 | 254,5                                     | 127,3                                    | 181,8                                              | 90,9                                             |
|                                                                                                                           |                            | Ø32                        | 640                                                  | 434,3                                                   | 217,1                                                 | 289,5                                     | 144,7                                    | 206,8                                              | 103,4                                            |

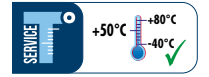




**ARTTIRILMIŞ TUTUNMALI SONRADAN ATILAN ÇUBUK BAĞLANTILARI**  
**CONNESSIONI POST-INSTALLATE DI BARRE AD ADERENZA MIGLIORATA**  
**POST-INSTALLED REBAR CONNECTIONS**  
**NACHTRÄGLICHE BEWEHRUNGSANSCHÜSSE**

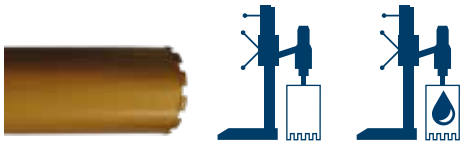


Matkapla delme > Perforazione con trapano  
Hammer drilled holes > Durchbohrung mit Bohrmaschine

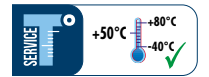


|                                                                                                                                                                                                                                                                                                                                                                                 | ÇUBUK<br>MATERIAL | ÇUBUK TİPİ<br>TYPE OF ROD | ÇUBUK ÇAPİ<br>ROD DIAMETER | TUTUNMA GERİLİMİ fbd [N/mm²] > BOND RESISTANCE fbd [N/mm²]<br>İyi tutunma koşulları > Good bond condition |         |         |         |         |         |         |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                           |                            | d [mm]                                                                                                    | C 12/15 | C 16/20 | C 20/25 | C 25/30 | C 30/37 | C 35/45 | C 40/50 |
| <div><div>Beton</div><div>Calcestruzzo</div><div>Concrete</div><div>Beton</div></div> <div><div>EAD 330087-01-0601</div><div>ETA - 22/0468</div></div> <div></div> <div>(*) Rebar = B450C; BST 500</div> | Rebar (*)         | Ø 8                       | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 10                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 12                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 14                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 16                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 20                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 22                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 24-26                   | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 28                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)         | Ø 30                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
| Rebar (*)                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ø 32              | 1,6                       | 2,0                        | 2,3                                                                                                       | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,0     |         |

Tüm ankraj uzunlukları için geçerli fbd tutunma gerilimi verileri > Dati di tensione di aderenza fbd validi per tutte le lunghezze di ancoraggio  
Design value of bond strength fbd suitable for all anchorage lengths > Bemessungswert der Verbundspannung fbd Gültig für alle Ankerungslänge



Karot matkapla delme (kuru/yaş) > Perforazione con carotatrice (secco/umido)  
Drilling with diamond core drill (dry/wet) > Durchbohrung mit Kernbohrmotor (nass/trocken)



|  <div>ÇUBUK<br/>MATERIAL</div>                                                                                                                                                                                                                                                                                                                                                                                                                                | ÇUBUK TİPİ<br>TYPE OF ROD | ÇUBUK ÇAPİ<br>ROD DIAMETER | TUTUNMA GERİLİMİ fbd [N/mm²] > BOND RESISTANCE fbd [N/mm²]<br>İyi tutunma koşulları > Good bond condition |         |         |         |         |         |         |         |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                            | d [mm]                                                                                                    | C 12/15 | C 16/20 | C 20/25 | C 25/30 | C 30/37 | C 35/45 | C 40/50 | C 45/55 |
| <div>Beton</div> <div>Calcestruzzo</div> <div>Concrete</div> <div>Beton</div> <div></div> <div><div>EAD 330087-01-0601<br/>ETA - 22/0468</div><div></div><div>(*) Rebar = B450C; BST 500</div></div> | Rebar (*)                 | Ø 8                        | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 10                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 12                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 14                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 16                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 20                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 22                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 24-26                    | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 4,0     | 4,3     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 28                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,7     | 3,7     | 3,7     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rebar (*)                 | Ø 30                       | 1,6                                                                                                       | 2,0     | 2,3     | 2,7     | 3,0     | 3,4     | 3,4     | 3,4     | 3,4     |
| Rebar (*)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ø 32                      | 1,6                        | 2,0                                                                                                       | 2,3     | 2,7     | 3,0     | 3,0     | 3,0     | 3,0     | 3,0     |         |

Tüm ankraj uzunlukları için geçerli fbd tutunma gerilimi verileri > Dati di tensione di aderenza fbd validi per tutte le lunghezze di ancoraggio  
Design value of bond strength fbd suitable for all anchorage lengths > Bemessungswert der Verbundspannung fbd Gültig für alle Ankerungslänge



# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT

## Dati carico | Load data | Données de charge | Lastdaten



|               |                             |                                                                                                                                |
|---------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>LEGEND</b> | <b>N<sub>rum</sub> [kN]</b> | Son ortalama çekme yükü > Carico ultimo medio a trazione<br>Average ultimate tension load > Durchschnittliche maximale Zuglast |
|               | <b>V<sub>rum</sub> [kN]</b> | Son ortalama kesme yükü > Carico ultimo medio a taglio<br>Average ultimate shear load > Durchschnittliche maximale Querlast    |
|               | <b>N<sub>rec</sub> [kN]</b> | İzin verilen çekme yükü > Carico ammissibile a trazione > Admissible tensile load > Zulässige Zuglast                          |
|               | <b>V<sub>rec</sub> [kN]</b> | İzin verilen kesme yükü > Carico ammissibile a taglio > Admissible shear load > Zulässige Querlast                             |

> h ≥ 2hef olduğun, aralık ve kenara olan mesafe etkisi olmadan için her bir ankraj için geçerli yükler  
> Carichi validi per singolo ancorante senza influenza di interasse e distanza dal bordo e h ≥ 2hef  
> Loads for single anchor with no influence of spacing and edge distance and with h ≥ 2hef  
> Passende Ringe für den einzelnen Veranker, ohne Achsenabstandseinfluss und des Randabstands und h ≥ 2hef

> 1kN = 100 Kg

> Kesme eylemi kenar yönünde değildir  
> Azione di taglio non diretta verso il bordo  
> Shear directed away from the edge  
> Queraktion nicht an den Rand gerichtet

> Genel güvenlik katsayısı dahildir  
> Coefficiente di sicurezza globale incluso  
> General safety factor included  
> Generelle Sicherheitskoeffizient inbegriffen

> Kullanılan yük tarafı katsayısı = 1,4  
> Coefficiente lato carichi utilizzato = 1,4  
> Load increasing safety coefficient used = 1,4  
> Verwendeter Lasterhöhungssicherheitskoeffizient = 1,4

| <b>E-PLUS</b>                                                                                                                                                                                                                                                                                                                                                                                                   | ÇUBUK<br>MATERIAL | ÇUBUK TİPİ<br>TYPE OF ROD          | ÇUBUK ÇAPİ<br>ROD DIAMETER | SON ORTALAMA ÇEKME YÜKÜ<br>ULTIMATE TENSION LOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SON ORTALAMA KESME YÜKÜ<br>ULTIMATE SHEAR LOAD | İZİN VERİLEN ÇEKME YÜKÜ<br>ADMISSIBLE TENSILE LOAD | İZİN VERİLEN KESME YÜKÜ<br>ADMISSIBLE SHEAR LOAD                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |                                    | d [mm]                     | N <sub>rum</sub> [kN]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V <sub>rum</sub> [kN]                          | N <sub>rec</sub> [kN]                              | V <sub>rec</sub> [kN]                                                                                                                                                                                           |
| <b>Dolu tuğla</b><br><b>Mattone pieno</b><br><b>Solid Brick</b><br><b>Vollmauerwerk</b> <br><b>≥ 4.6 / A2-70 / A4-70</b>                                                                                                                   |                   | > 4.6<br>A2-70 A4 -70              | M8 - Ø8                    | <br>> Orta mekanik özelliklerdeki taban malzemeler üzerindeki uygulamalar için tavsiye edilen yük verileri. Duvar malzemeleri ve/veya ahşaptaki alt malzemelerin çeşitliliği dikkate alınacak olursa, ele alınanlardan farklı taban malzemeler üzerindeki uygulamalar için yük değerleri yerinde yapılan uygun testlerle bulunmalıdır.<br><br>> Dati di carico raccomandati per applicazioni su materiali base di medie caratteristiche meccaniche. Vista la varietà dei substrati in muratura e/o legno per applicazioni su supporti differenti da quelli considerati, i valori di carico dovranno essere ricavati tramite opportune prove in situ.<br><br>> Recommended loads for applications on base materials with medium strength characteristics. For different masonry and/or wood base materials, load values must be obtained with in situ tests. |                                                | 2,0                                                | 3,0                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70              | M10 - Ø10                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 2,6                                                | 3,4                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70              | M12 - Ø12                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 2,8                                                | 3,9                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70              | M16 - Ø16                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 4,0                                                | 4,2                                                                                                                                                                                                             |
| <b>Lamine ahşap</b><br><b>Legno lamellare</b><br><b>Laminated Timber</b><br><b>Holz</b> <br><b>≥ 4.6 / A2-70 / A4-70</b> <br><b>(*) Rebar = B450C</b>  |                   | > 4.6<br>A2-70 A4 -70<br>Rebar (*) | M8 - Ø8                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 3,2                                                | > Kesme değerleri için CNR-DT 206/2007 (7.10.2.3) talimatlarına başvurun<br>> Per valori a taglio riferirsi alle istruzioni CNR-DT 206/2007 (7.10.2.3)<br>> For shear loads refer to CNR-DT 206/2007 (7.10.2.3) |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70<br>Rebar (*) | M10 - Ø10                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 4,2                                                |                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70<br>Rebar (*) | M12 - Ø12                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 6,1                                                |                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                 |                   | > 4.6<br>A2-70 A4 -70<br>Rebar (*) | M16 - Ø16                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                | 10,7                                               |                                                                                                                                                                                                                 |



## BETON İÇİN YÜKSEK PERFORMANSLI KİMYASAL ANKRAJ

High load chemical anchor for concrete > Ancorante chimico ad alte prestazioni per calcestruzzo  
Hochleistungsfähige chemische verankerung für beton





# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT

tespit sistemleri  
**BOSSONG®**  
www.bossong.com

## INSTALLATION

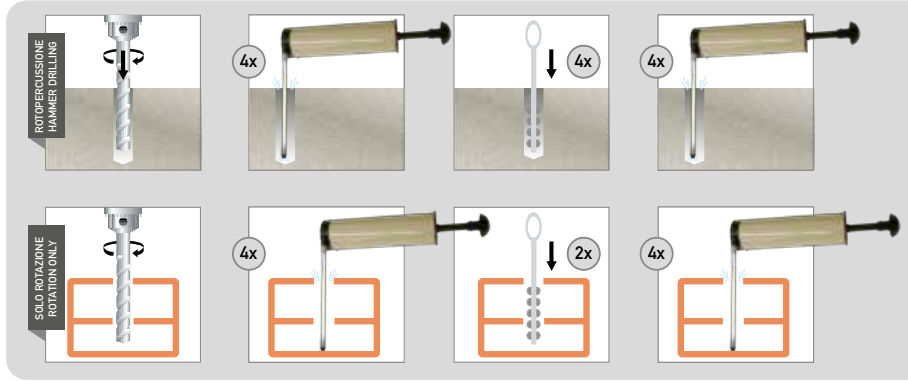
### KURULUM PROSEDÜRÜ PROCEDURA DI INSTALLAZIONE INSTALLATION PROCEDURE INSTALLATIONSVERFAHREN

#### 01 TEMİZLİK | PULIZIA | CLEANING | REINIGUNG



SDS-HDB (p. 207)

Kullanılmışsa, delikteki tozu çıkarmak için üfleme pompası/basinçlı hava kullanmak gerekmez.  
If used no need to use blower pump/compressed air to remove the dust from the hole.



Tam dik olduğundan emin olarak deliği delin. Özel üfleme pompasıyla (veya basınçlı havayla) deliğe hava tutun, özel metal fırçayla deliğin yan yüzeylerinde temizlik işlemlerini yapın, içine toz ve/veya artık malzeme kalmayana kadar deliğe yeniden hava tutun. Metal fırça kullanarak deliğin yan yüzeylerinde dikkatli bir temizlik yapılması tavsiye edilir.

Eseguire il foro controllandone la perpendicolarità. Soffiare il foro con apposita pompa soffiante (o aria compressa), eseguire operazione di pulizia della superficie laterale del foro con apposito scovolino metallico, soffiare nuovamente il foro fino a che non fuoriesca più polvere e/o altro materiale residuo. Si raccomanda un'attenta pulizia della superficie laterale del foro con scovolino metallico.

Drill the hole and check it's perpendicularity. Blow the hole with an appropriate pump blower (or compression air), clean the lateral surface of the hole with an appropriate steel brush, blow again in the hole until there is no dust and/or any residual material inside. We strongly recommend use of the steel brush to clean hole sides.

Stellen Sie die Bohrlöcher unter Kontrolle der Rechtwinkligkeit her. Blasen Sie die Bohrlöcher mit einer entsprechenden Pumpe (oder Druckluft) durch, nehmen Sie eine Reinigung der seitlichen Oberflächen der Bohrlöcher mit einer Bürste von Metall vor, blasen Sie die Bohrlöcher erneut durch, bis kein Pulver und / oder andere Materialrückstände mehr austreten. Insbesondere ist die Benutzung der Metallbürste für die Reinigung der seitlichen Oberfläche der Bohrlöcher notwendig.

#### 02 AÇMA | APERTURA | OPENING | ÖFFUNG

BCR 300  
BCR 165



TORBA KARTUŞ  
FOIL CARTRIDGE (CIC)

Bastırmalı tapayı çıkarın, karıştırıcıyı çevirerek takın ve el ve göz koruması kullanarak kartuşu pompanın içine yerleştirin. 300 ml ve 165 ml formatlarında tapayı çevirerek çıkarın, aşağıdaki işlemlere göre metal klipsi çıkarın: 1) Karıştırıcıyı plastik çıkarcının deliğine sokun. 2) Torbanın metal kapatma klipsini çekerek çıkarmak için çıkarcıyı çekin. Bunun ardından karıştırıcıyı çevirerek takın, ve göz koruması kullanarak kartuşu pompanın içine yerleştirin.

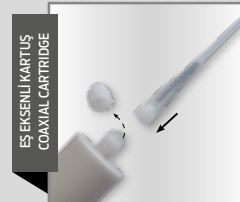
Togliere il tappo a pressione, avvitare il miscelatore e inserire la cartuccia nella pompa usando protezioni per mani e viso. Nei formati 300 ml e 165 ml svitare il tappo, estrarre la clip metallica secondo le seguenti operazioni: 1) Inserire il miscelatore nell'asola dell'estrattore in plastica. 2) Tirare l'estrattore per sfilare la clip metallica di chiusura del sacchetto. Dopodiché avvitare il miscelatore, inserire la cartuccia nella pompa usando protezioni per mani e viso.

Remove the pressure cup, screw on the mixer and insert the cartridge in the gun. Use protections for hands and face. With the size 300 ml and 165 ml, unscrew the front cup, pull-out the steel closing clip according to the following operations: 1) Insert the mixer in the eye of the plastic extractor. 2) Pull the extractor to unhook the steel closing clip of the foil.

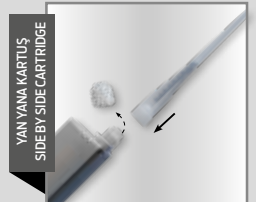
After that, screw on the mixer and insert the cartridge in the gun. Use protections for hands and face.

Entfernen Sie die Druckkappe, schrauben Sie den Mischer an und bringen Sie den Einsatz in der Pumpe unter Verwendung von Schuttmitteln für Hände und Gesicht an. Lösen Sie bei den Formaten zu 300 ml und 165 ml den Verschluss und ziehen Sie die Metallklemme entsprechend folgender Vorgehensweise heraus: 1) Fügen Sie den Mischer in das Langloch der Ausziehvorrichtung aus Kunststoff ein. 2) Ziehen Sie die Ausziehvorrichtung heraus, um die Metallklemme zum Verschließen des Beutels zu entfernen. Schrauben Sie dann den Mischer fest und fügen Sie den Einsatz in die Pumpe unter Verwendung von Schuttmitteln für Hände und Gesicht ein.

BCR 900 / BCR 825 / BCR 470 / BCR 400 / BCR 345 / BCR 265



ES EKSENİ KARTUŞ  
COAXIAL CARTRIDGE



YAN YANA KARTUŞ  
SIDE BY SIDE CARTRIDGE



NOT. Teknik veriler, kurulum verileri ve yük verileri revizyona tabi tutulabilir. En güncel sürümünü almak için [www.bossong.com](http://www.bossong.com) sitesine gidin veya Teknik Departmanımızla iletişime geçin.

NOTA. Dati tecnici, di installazione e di carico possono essere oggetto di revisione. Per una versione aggiornata consultare le schede tecniche sul sito [www.bossong.com](http://www.bossong.com) o contattare il nostro Ufficio Tecnico.

WARNING. Installation and loads technical data can be modified by us. For update technical data sheet see [www.bossong.com](http://www.bossong.com) or be in contact with our Technical Office.

ANMERKUNG. Technische Daten, Installationsangaben und Lastdaten können modifiziert werden. Für die aktualisierte Version sind die technischen Blätter auf der Webseite [www.bossong.com](http://www.bossong.com) nachzuschauen, oder unser Technisches Büro soll konsultiert werden.

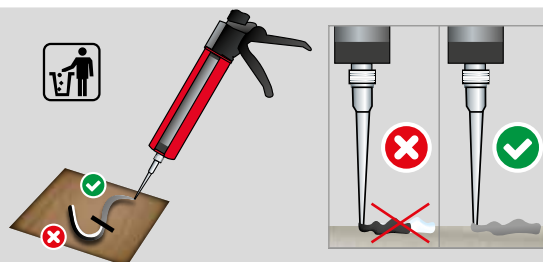
# TEKNİK FORM SCHEMA TECNICA TECHNICAL DATA SHEET TECHNISCHES DATENBLATT



## 03 KARTUŞUN HAZIRLANMASI | PREPARAZIONE DELLA CARTUCCIA CARTRIDGE PREPARATION | KARTUSCHE VORBEREITUNG



Uygun dispenser kullanın  
Utilizzare dispenser appropriato  
Use the correct dispenser  
Verwenden Sie einen geeigneten Spender



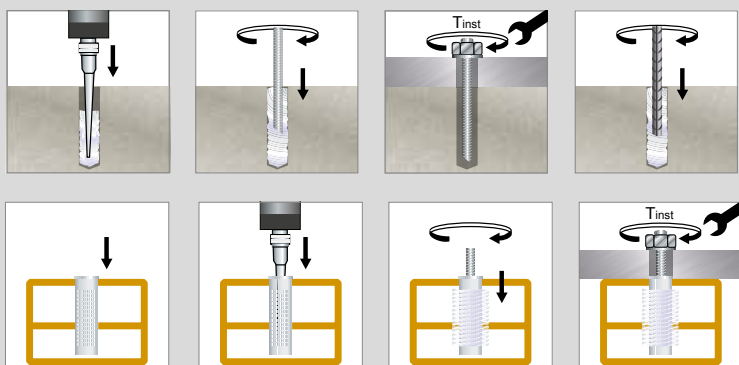
Aşağıdakilerden emin olarak ürünün ilk kısmını dışarı çıkarın: 1) Karıştırıcıdan (şeffaf) geçen ürün akışı A (beyaz renkli) ve B (siyah renkli) kısımlardan oluşmaktadır. 2) İki bileşen tamamen karışmalıdır. İki farklı bileşenin birleşmesiyle elde edilen ürün karıştırıcıdan eşit renkte dışarı çıktığında karıştırma işlemi tamamlanmış demektir. Yalnızca bundan sonra kartuş kullanıma hazırdır.

Estrudere una prima parte del prodotto assicurandosi che: 1) Attraverso il mixer (trasparente) il flusso di prodotto sia composto dalla parte A (colore bianco) e dalla parte B (colore nero). 2) I due componenti si siano completamente miscelati. La completa miscelazione è raggiunta quando dal miscelatore il prodotto, ottenuto dall'unione dei due componenti, fuoriesce con colore uniforme. Solo allora la cartuccia è pronta per l'uso.

Before starting to use the cartridge, eject a first part of the product, being sure that: 1) Through the mixer (transparent) see that the flux of product is compound of the part A (white colour) and of part B (black colour). 2) The two components are completely mixed. The complete mixing is reached only after that the product, obtained by mixing the two component, comes out from the mixer with an uniform colour. Now the cartridge is ready to be used.

Ziehen Sie einen ersten Teil des Produktes heraus und prüfen Sie dass: 1) Durch den Mischer (transparent) ist der Fluss des Produktes aus Teil A (weiße Farbe) und Teil B (schwarze Farbe) zusammengesetzt. 2) Die zwei Teilen werden völlig gemischt. Die komplette Mischung erfolgt als vom Mischer das Produkt, sich ergebend von den zwei Teilen, mit gleichmäßiger Farbe entweicht. Da ist die Kartusche fertig für die Anwendung.

## 04 ENJEKSİYON | INIEZIONE | INJECTION | INJEKTION



1) 2/3'ünü doldurana kadar reçineyi deliğin içine sıkın. Delikli malzeme söz konusu olduğunda, plastik kovani yerleştirin, ardından kovanın içine sıkın. 2) Çubuğu yerleştirmeden önce, yüzeyin kuru, yağsız olduğundan, diğer kontamine edici maddeleri içermediğinden emin olun. Hava kabarcıklarının dışarı çıkması için çubuğu döndürme hareketiyle yerleştirin. 3) Çubuğu yerleştirmek ve ardından yüke bindirmek için, teknik formda ve ürünün etiketinde belirtilen prizlenme sürelerine uygun hareket edin. 4) Yük uygulamadan önce ürünün prizlendiğinden emin olun. 5) Karıştırıcıyı yenisiyle değiştirerek kartuşu daha sonra tekrar kullanabilirsiniz. Daima bir miktar ürün sıkmayı unutmayın; 3. maddeye bakın.

1) Estrudere la resina nel foro fino a riempirlo per 2/3. In caso di materiale forato inserire la gabbietta di plastica e poi estrudere nella gabbietta. 2) Prima di inserire la barra verificare che la superficie della stessa sia asciutta, priva di olio ed altri agenti contaminanti. Inserire la barra con un movimento rotatorio per la fuoriuscita delle bolle d'aria. 3) Per l'installazione della barra e la successiva messa in carico rispettare i relativi tempi di posa specificati sia nella scheda tecnica che sull'etichetta del prodotto. 4) Prima della messa in carico verificare l'indurimento del prodotto. 5) La cartuccia può essere riutilizzata successivamente sostituendo il mixer con uno nuovo. Ricordarsi sempre di estrarre una parte del prodotto vedi punto 3.

1) Inject resin into the hole up to fill it 2/3rds. In hollow bricks use the plastic sleeve and inject the resin inside. 2) Before insert the rod, verify that the element is dry and free oil and other contaminants. Insert threaded stud turning back and forth to avoid presence of air in the fitted hole. 3) For the installation and the following anchor load phase, respect the open time and curing time detailed in the technical data sheet and in the label of the product. 4) Before to load the anchor, check the hardened of the product. 5) The cartridge can be used again screwing the cup and replacing the mixer. Remember to eject a first part of the product, see point 3.

1) Pressen Sie das Harz in das Bohrloch bis diese zu 2/3 gefüllt ist. Bei Lochmaterialien muss der Siebhülse eingefügt und dann in die Hülse gepresst werden. 2) Vor dem Einstecken des Gewindestabes prüfen dass seine Fläche trocken, ohne Öl und andere verunreinigende Wirkstoffe ist. Fügen Sie den Stab mit einer Drehbewegung ein, um die Luftblasen austreten zu lassen. 3) Warten Sie die Aushärtezeit und Verladungszeit ab, die im technischen Datenblatt und auf dem Etikett des Produktes angegeben sind. 4) Vor der Verladung überprüfen dass das Produkt verhärtet ist. 5) Der Einsatz kann später wiederverwendet werden, indem der Mischer durch einen neuen ersetzt wird. Vergessen Sie nicht, immer einen Teil des Produktes herauszuspressen, siehe Punkt 3.

## TÜKETİM HESAPLAYICI



[www.bossong.com/area-tecnica.html](http://www.bossong.com/area-tecnica.html)  
Veya, reçine tüketim değerleri için bkz. s. 5  
[www.bossong.com/area-tecnica.html](http://www.bossong.com/area-tecnica.html)  
Oppure per consumi resina vedere pag. 5  
[www.bossong.co.uk/technical-area.html](http://www.bossong.co.uk/technical-area.html)  
or for resin quantity consumption see pag. 5  
[www.bossong-befestigungssysteme.de/technische-abteilung.html](http://www.bossong-befestigungssysteme.de/technische-abteilung.html) oder für Harzkonsum siehe S. 5