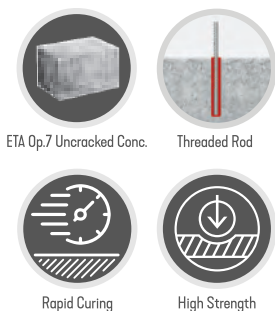
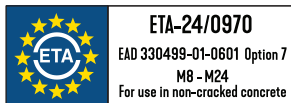


# CHEMICAL ANCHORS

## CS - P 100



### Product Description

CS - P 100 is two component bonded anchoring system anchoring of wide variety of construction applications.

CS - P 100 is for heavy-duty applications in non- cracked concrete and masonry and many other base materials like aerated concrete, lightweight solid or hollow concrete blocks or sand lime bricks. CS - P 100 has three version for various climate conditions.

CS - P 100: Normal working and load ing time

|                      |                     |
|----------------------|---------------------|
| Main constituent     | : Polyester Resin   |
| Appearance (uncured) | : Paste             |
| Colour               | : Grey              |
| Viscosity            | : Thixotropic, high |

### Features:

- Use for medium-high loads, static or quasi-static.
- Temperature range: from -40°C to +80°C (long term maximum temperature +50°C)
- Working life of 50 and/or 100 years.
- Compatible with several building materials including perforated brick.
- Dry, wet and flooded holes

### Working and loading time

Working time is typical gel time at the highest temperature of the given range. Loading time is setting time at the lowest temperature of the given range.

### Packaging

| Cartridge | Pices in a Box | Pices in a Wooden Pallet |
|-----------|----------------|--------------------------|
| 300ml     | 20             | 1500                     |
| 345ml     | 12             | 1200                     |
| 410ml     | 12             | 1200                     |

For each cartridge, there are two static mixers in the box.

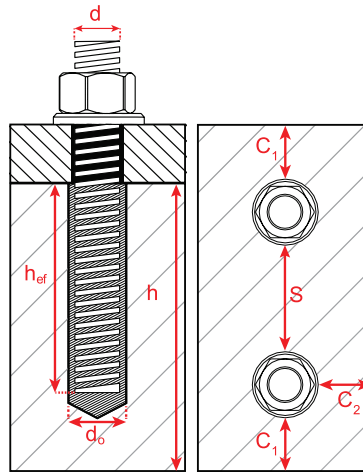
### Polyester (CS - P 100)

| Temperature of base material | +5°C | +5°C to +10°C | +10°C to +20°C | +20°C to +25°C | +25°C to +30°C | +30°C |
|------------------------------|------|---------------|----------------|----------------|----------------|-------|
| Temperature of carteidge     | +5°C | +5°C to +10°C | +10°C to +20°C | +20°C to +25°C | +25°C to +30°C | +30°C |
| Working time (mins)          | 18   | 10            | 6              | 5              | 4              | 3     |
| Loading time (mins)          | 150  | 150           | 85             | 50             | 40             | 35    |

# CHEMICAL ANCHORS

## CS - P100

### Installation Parameters



Installation Parameter - Threaded Rod

| Anchor size         |                                               |    | M8                             | M10 | M12 | M16                               | M20 | M24 |
|---------------------|-----------------------------------------------|----|--------------------------------|-----|-----|-----------------------------------|-----|-----|
| d                   | Diameter of anchor bolt or thread diameter    | mm | 8                              | 10  | 12  | 16                                | 20  | 24  |
| d <sub>o</sub>      | Nominal diameter of drill bit                 | mm | 10                             | 12  | 14  | 18                                | 24  | 28  |
| d <sub>f</sub>      | Diameter of clearance hole in the fixture (≤) | mm | 9                              | 12  | 14  | 18                                | 22  | 26  |
| d <sub>b</sub>      | Diameter of steel brush (≥)                   | mm | 12                             | 14  | 16  | 20                                | 26  | 30  |
| h <sub>ef,min</sub> | Minimum effective anchorage depth             | mm | 64                             | 80  | 96  | 128                               | 160 | 192 |
| h <sub>ef</sub>     | Standard effective anchorage depth            | mm | 80                             | 90  | 110 | 128                               | 170 | 210 |
| h <sub>ef,max</sub> | Maximum effective anchorage depth (12*d)      | mm | 96                             | 120 | 144 | 192                               | 240 | 288 |
| h <sub>min</sub>    | Minimum thickness of the concrete member      | mm | h <sub>ef</sub> + 30mm ≥ 100mm |     |     | h <sub>ef</sub> + 2d <sub>o</sub> |     |     |
| T <sub>inst</sub>   | Nominal torque moment                         | Nm | 10                             | 20  | 40  | 80                                | 120 | 160 |
| S <sub>min</sub>    | Minimum spacing (5*d)                         | mm | 40                             | 50  | 60  | 80                                | 100 | 120 |
| S <sub>cr,N</sub>   | Spacing                                       | mm | 184                            | 252 | 304 | 376                               | 506 | 582 |
| C <sub>min</sub>    | Minimum edge distance (5*d)                   | mm | 40                             | 50  | 60  | 80                                | 100 | 120 |
| C <sub>cr,N</sub>   | Edge distance                                 | mm | 92                             | 126 | 152 | 188                               | 253 | 291 |

# CHEMICAL ANCHORS

## CS - P100



### Load Values - Design Resistance - Threaded bar

#### Design Resistance Values to Tension Load - Threaded Bar

Steel Failure - Design Load

| Size                         |                   |      | M8 | M10 | M12 | M16 | M20 | M24 |
|------------------------------|-------------------|------|----|-----|-----|-----|-----|-----|
| Steel Grade 5.8              | N <sub>Rd,s</sub> | [kN] | 12 | 19  | 28  | 53  | 82  | 118 |
| Steel Grade 8.8              | N <sub>Rd,s</sub> | [kN] | 19 | 31  | 45  | 84  | 131 | 188 |
| Steel Grade 10.9             | N <sub>Rd,s</sub> | [kN] | 26 | 41  | 60  | 112 | 175 | 252 |
| Stainless Steel Grade A4-70  | N <sub>Rd,s</sub> | [kN] | 14 | 22  | 31  | 58  | 91  | 130 |
| Stainless Steel Grade A4-80  | N <sub>Rd,s</sub> | [kN] | 18 | 29  | 42  | 79  | 123 | 176 |
| Stainless Steel Grade 1,4529 | N <sub>Rd,s</sub> | [kN] | 17 | 27  | 39  | 73  | 115 | 165 |

#### Design Resistance Values to Shear Load - Threaded Bar

Steel Failure - Design Resistance

| Size                         |                   |      | M8 | M10 | M12 | M16 | M20 | M24 |
|------------------------------|-------------------|------|----|-----|-----|-----|-----|-----|
| Steel Grade 5.8              | V <sub>Rd,s</sub> | [kN] | 7  | 12  | 17  | 31  | 49  | 70  |
| Steel Grade 8.8              | V <sub>Rd,s</sub> | [kN] | 12 | 18  | 27  | 50  | 78  | 113 |
| Steel Grade 10.9             | V <sub>Rd,s</sub> | [kN] | 12 | 19  | 28  | 53  | 82  | 118 |
| Stainless Steel Grade A4-70  | V <sub>Rd,s</sub> | [kN] | 8  | 13  | 19  | 35  | 55  | 79  |
| Stainless Steel Grade A4-80  | V <sub>Rd,s</sub> | [kN] | 11 | 17  | 26  | 47  | 74  | 106 |
| Stainless Steel Grade 1,4529 | V <sub>Rd,s</sub> | [kN] | 10 | 16  | 24  | 44  | 69  | 99  |

#### Design Resistance Values to Tension Load - Threaded Bar<sup>(1)</sup>

Characteristic bond resistance in non-cracked concrete C20/25

| Concrete Class       | Temperature Range <sup>(2)</sup> | Embedment Depth            | Size                   | M8   | M10  | M12  | M16  | M20  | M24  |
|----------------------|----------------------------------|----------------------------|------------------------|------|------|------|------|------|------|
| NON-CRACKED CONCRETE | 24°C/<br>40°C                    | h <sub>ef,min</sub>        | N <sub>Rd,p</sub> [kN] | 10,0 | 11,9 | 17,5 | 29,3 | 43,6 | 57,9 |
|                      |                                  | h <sub>ef,standard</sub>   | N <sub>Rd,p</sub> [kN] | 12,5 | 13,4 | 20,0 | 29,3 | 46,3 | 63,3 |
|                      |                                  | h <sub>ef,max</sub> = 12*d | N <sub>Rd,p</sub> [kN] | 15,0 | 17,8 | 26,2 | 44,0 | 65,3 | 86,9 |
|                      | 50°C/<br>80°C                    | h <sub>ef,min</sub>        | N <sub>Rd,p</sub> [kN] | 7,0  | 8,1  | 12,1 | 20,8 | 33,5 | 44,5 |
|                      |                                  | h <sub>ef,standard</sub>   | N <sub>Rd,p</sub> [kN] | 8,7  | 9,1  | 13,8 | 20,8 | 33,5 | 44,5 |
|                      |                                  | h <sub>ef,max</sub> = 20*d | N <sub>Rd,p</sub> [kN] | 10,5 | 12,1 | 18,1 | 31,2 | 50,3 | 66,8 |

# CHEMICAL ANCHORS

## CS - P100



### Load Values - Maximum load recommended - Threaded bar

#### Maximum Loads Recommended - Tension Load Threaded Bar

Steel Failure - Design Resistance

| Size                         |                    |      | M8 | M10 | M12 | M16 | M20 | M24 |
|------------------------------|--------------------|------|----|-----|-----|-----|-----|-----|
| Steel Grade 5.8              | N <sub>Rec,s</sub> | [kN] | 9  | 14  | 20  | 38  | 59  | 84  |
| Steel Grade 8.8              | N <sub>Rec,s</sub> | [kN] | 14 | 22  | 32  | 60  | 93  | 134 |
| Steel Grade 10.9             | N <sub>Rec,s</sub> | [kN] | 19 | 30  | 43  | 80  | 125 | 180 |
| Stainless Steel Grade A4-70  | N <sub>Rec,s</sub> | [kN] | 10 | 15  | 22  | 41  | 65  | 93  |
| Stainless Steel Grade A4-80  | N <sub>Rec,s</sub> | [kN] | 13 | 21  | 30  | 56  | 88  | 126 |
| Stainless Steel Grade 1,4529 | N <sub>Rec,s</sub> | [kN] | 12 | 20  | 28  | 52  | 82  | 118 |

#### Maximum Loads Recommended - Shear Load - Threaded Bar

Steel Failure - Design Resistance

| Size                         |                    |      | M8 | M10 | M12 | M16 | M20 | M24 |
|------------------------------|--------------------|------|----|-----|-----|-----|-----|-----|
| Steel Grade 5.8              | V <sub>Rec,s</sub> | [kN] | 5  | 9   | 12  | 22  | 35  | 50  |
| Steel Grade 8.8              | V <sub>Rec,s</sub> | [kN] | 9  | 13  | 19  | 36  | 56  | 81  |
| Steel Grade 10.9             | V <sub>Rec,s</sub> | [kN] | 9  | 14  | 20  | 38  | 59  | 84  |
| Stainless Steel Grade A4-70  | V <sub>Rec,s</sub> | [kN] | 6  | 9   | 14  | 25  | 39  | 57  |
| Stainless Steel Grade A4-80  | V <sub>Rec,s</sub> | [kN] | 8  | 12  | 18  | 34  | 53  | 76  |
| Stainless Steel Grade 1,4529 | V <sub>Rec,s</sub> | [kN] | 7  | 11  | 17  | 31  | 49  | 71  |

#### Design Resistance Values to Tension Load - Threaded Bar<sup>(1)</sup>

Maximum load in non-cracked concrete C20/25

| Concrete Class       | Temperature Range <sup>(2)</sup> | Embedment Depth            | Size               |      | M8   | M10  | M12  | M16  | M20  | M24  |
|----------------------|----------------------------------|----------------------------|--------------------|------|------|------|------|------|------|------|
| NON-CRACKED CONCRETE | 24°C/<br>40°C                    | h <sub>ef,min</sub>        | N <sub>Rec,p</sub> | [kN] | 7,1  | 8,5  | 12,5 | 20,9 | 31,1 | 41,4 |
|                      |                                  | h <sub>ef,standard</sub>   | N <sub>Rec,p</sub> | [kN] | 8,9  | 9,5  | 14,3 | 20,9 | 33,1 | 45,2 |
|                      |                                  | h <sub>ef,max</sub> = 12*d | N <sub>Rec,p</sub> | [kN] | 10,7 | 12,7 | 18,7 | 31,4 | 46,7 | 62,0 |
|                      | 50°C/<br>80°C                    | h <sub>ef,min</sub>        | N <sub>Rec,p</sub> | [kN] | 5,0  | 5,8  | 8,6  | 14,8 | 23,9 | 31,8 |
|                      |                                  | h <sub>ef,standard</sub>   | N <sub>Rec,p</sub> | [kN] | 6,2  | 6,5  | 9,9  | 14,8 | 25,4 | 34,8 |
|                      |                                  | h <sub>ef,max</sub> = 12*d | N <sub>Rec,p</sub> | [kN] | 7,5  | 8,7  | 12,9 | 22,3 | 35,9 | 47,7 |