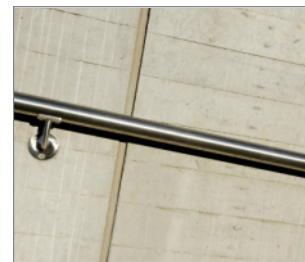


# R-XPT Throughbolt

Throughbolt for non-cracked concrete



## Approvals and Reports

- ETA 17/0183



## Product information

### Features and benefits

- High performance in non-cracked concrete confirmed by ETA Option 7
- High quality with cost effectiveness
- Suitable for reduced embedment to avoid contact with reinforcement
- Embedment depth markings help to ensure precise installation of the anchor
- Design allows drilling and installing directly through the fixture and helps to reduce installation effort
- Cold formed body ensures consistent dimensional accuracy
- Simple through-installation (drilling and installation through fixed material)
- Optimized expander design with six grip features allows for a high load-bearing capacity

### Applications

- Cladding restraint
- Curtain wall
- Balustrading
- Barriers
- Handrails
- Racking
- Structural steel
- Bollards

### Base materials

#### Approved for use in:

- Non-cracked concrete C20/25-C50/60
- Unreinforced concrete
- Reinforced concrete

#### Also suitable for use in:

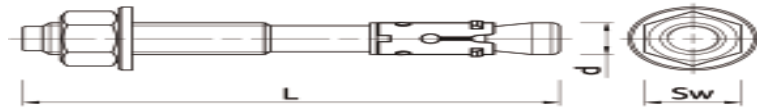
- Natural Stone

## Installation guide



1. Drill a hole of required diameter and depth
2. Clear the hole of drilling dust and debris (using blowpump or equivalent method)
3. Lightly tap the throughbolt through the fixture into hole with a hammer, until fixing depth is reached
4. Tighten to the recommended torque

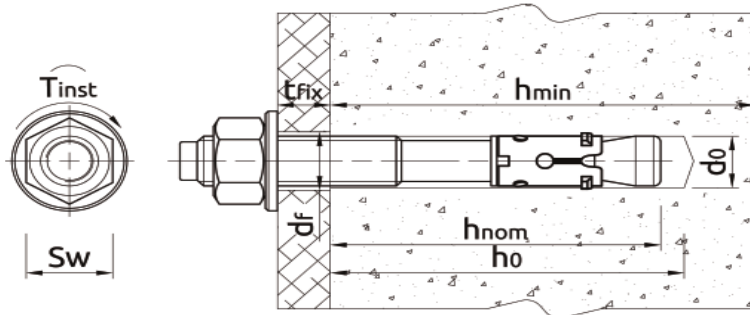
## Product information



| Size | Product Code    | Approval type | Anchor   |        | Fixture        |                               |               |
|------|-----------------|---------------|----------|--------|----------------|-------------------------------|---------------|
|      |                 |               | Diameter | Length | Max. thickness | Max. thickness $t_{fix}$ for: | Hole diameter |
|      |                 |               | d        | L      | $t_{fix,r}$    | $h_{nom,std}$                 | $d_f$         |
|      |                 | -             | [mm]     | [mm]   | [mm]           | [mm]                          | [mm]          |
| M6   | R-XPT-06050/10  | AT-15-9327/14 | 6        | 50     | 10             | -                             | 7             |
|      | R-XPT-06065/5   | AT-15-9327/14 | 6        | 65     | 25             | 5                             | 7             |
|      | R-XPT-06085/25  | AT-15-9327/14 | 6        | 85     | 45             | 25                            | 7             |
|      | R-XPT-06100/40  | AT-15-9327/14 | 6        | 100    | 60             | 40                            | 7             |
| M8   | R-XPT-08050/5   | AT-15-9327/14 | 8        | 50     | 5              | -                             | 9             |
|      | R-XPT-08060/10  | ETA-08/0339   | 8        | 60     | 10             | -                             | 9             |
|      | R-XPT-08065/15  | ETA-08/0339   | 8        | 65     | 15             | -                             | 9             |
|      | R-XPT-08075/10  | ETA-08/0339   | 8        | 75     | 25             | 10                            | 9             |
|      | R-XPT-08080/15  | ETA-08/0339   | 8        | 80     | 30             | 15                            | 9             |
|      | R-XPT-08085/20  | ETA-08/0339   | 8        | 85     | 35             | 20                            | 9             |
|      | R-XPT-08095/30  | ETA-08/0339   | 8        | 95     | 45             | 30                            | 9             |
|      | R-XPT-08115/50  | ETA-08/0339   | 8        | 115    | 65             | 50                            | 9             |
|      | R-XPT-08140/75  | ETA-08/0339   | 8        | 140    | 90             | 75                            | 9             |
|      | R-XPT-08150/85  | ETA-08/0339   | 8        | 150    | 100            | 85                            | 9             |
| M10  | R-XPT-10065/5   | ETA-08/0339   | 10       | 65     | 5              | -                             | 11            |
|      | R-XPT-10080/10  | ETA-08/0339   | 10       | 80     | 20             | 10                            | 11            |
|      | R-XPT-10085/15  | ETA-08/0339   | 10       | 85     | 25             | 15                            | 11            |
|      | R-XPT-10095/25  | ETA-08/0339   | 10       | 95     | 35             | 25                            | 11            |
|      | R-XPT-10115/45  | ETA-08/0339   | 10       | 115    | 55             | 45                            | 11            |
|      | R-XPT-10130/60  | ETA-08/0339   | 10       | 130    | 70             | 60                            | 11            |
|      | R-XPT-10140/70  | ETA-08/0339   | 10       | 140    | 80             | 70                            | 11            |
|      | R-XPT-10150/80  | ETA-08/0339   | 10       | 150    | 90             | 80                            | 11            |
| M12  | R-XPT-10180/110 | ETA-08/0339   | 10       | 180    | 120            | 110                           | 11            |
|      | R-XPT-12080/5   | ETA-08/0339   | 12       | 80     | 5              | -                             | 13            |
|      | R-XPT-12100/5   | ETA-08/0339   | 12       | 100    | 25             | 5                             | 13            |
|      | R-XPT-12120/25  | ETA-08/0339   | 12       | 120    | 45             | 25                            | 13            |
|      | R-XPT-12125/30  | ETA-08/0339   | 12       | 125    | 50             | 30                            | 13            |
|      | R-XPT-12135/40  | ETA-08/0339   | 12       | 135    | 60             | 40                            | 13            |
|      | R-XPT-12140/45  | ETA-08/0339   | 12       | 140    | 65             | 45                            | 13            |
|      | R-XPT-12150/55  | ETA-08/0339   | 12       | 150    | 75             | 55                            | 13            |
|      | R-XPT-12180/85  | ETA-08/0339   | 12       | 180    | 105            | 85                            | 13            |
|      | R-XPT-12220/125 | -             | 12       | 220    | 145            | 125                           | 13            |
| M16  | R-XPT-12300/205 | -             | 12       | 300    | 225            | 205                           | 13            |
|      | R-XPT-16100/5   | ETA-08/0339   | 16       | 100    | 5              | -                             | 18            |
|      | R-XPT-16105/10  | ETA-08/0339   | 16       | 105    | 10             | -                             | 18            |
|      | R-XPT-16125/5   | ETA-08/0339   | 16       | 125    | 25             | 5                             | 18            |
|      | R-XPT-16140/20  | ETA-08/0339   | 16       | 140    | 40             | 20                            | 18            |
|      | R-XPT-16150/30  | ETA-08/0339   | 16       | 150    | 50             | 30                            | 18            |
|      | R-XPT-16160/40  | ETA-08/0339   | 16       | 160    | 60             | 40                            | 18            |
|      | R-XPT-16180/60  | ETA-08/0339   | 16       | 180    | 80             | 60                            | 18            |
| M20  | R-XPT-16220/100 | -             | 16       | 220    | 120            | 100                           | 18            |
|      | R-XPT-16280/160 | -             | 16       | 280    | 180            | 160                           | 18            |
|      | R-XPT-20125/5   | ETA-08/0339   | 20       | 125    | 5              | -                             | 22            |

## Product information

## Installation data



| Size                         |                    |      | M6 | M8  | M10 | M12 | M16 | M20 | M24 |
|------------------------------|--------------------|------|----|-----|-----|-----|-----|-----|-----|
| Thread diameter              | d                  | [mm] | 6  | 8   | 10  | 12  | 16  | 20  | 24  |
| Hole diameter in substrate   | d <sub>0</sub>     | [mm] | 6  | 8   | 10  | 12  | 16  | 20  | 24  |
| Installation torque          | T <sub>inst</sub>  | [Nm] | 5  | 15  | 30  | 50  | 100 | 200 | 300 |
| Wrench size                  | Sw                 | [mm] | 10 | 13  | 17  | 19  | 24  | 30  | 36  |
| STANDARD EMBEDMENT DEPTH     |                    |      |    |     |     |     |     |     |     |
| Min. hole depth in substrate | h <sub>0,s</sub>   | [mm] | 55 | 60  | 65  | 85  | 105 | 125 | 140 |
| Installation depth           | h <sub>nom,s</sub> | [mm] | 50 | 55  | 59  | 80  | 100 | 119 | 135 |
| Min. substrate thickness     | h <sub>min,s</sub> | [mm] | 84 | 100 | 100 | 136 | 170 | 198 | 224 |
| Min. spacing                 | s <sub>min,s</sub> | [mm] | 45 | 50  | 55  | 75  | 90  | 140 | 180 |
| Min. edge distance           | c <sub>min,s</sub> | [mm] | 50 | 40  | 50  | 65  | 80  | 100 | 200 |
| REDUCED EMBEDMENT DEPTH      |                    |      |    |     |     |     |     |     |     |
| Min. hole depth in substrate | h <sub>0,r</sub>   | [mm] | 35 | 45  | 55  | 65  | 85  | 105 | 125 |
| Installation depth           | h <sub>nom,r</sub> | [mm] | 30 | 40  | 49  | 60  | 80  | 99  | 120 |
| Min. substrate thickness     | h <sub>min,r</sub> | [mm] | 80 | 100 | 100 | 100 | 130 | 158 | 194 |
| Min. spacing                 | s <sub>min,r</sub> | [mm] | 40 | 45  | 55  | 100 | 100 | 125 | 160 |
| Min. edge distance           | c <sub>min,r</sub> | [mm] | 45 | 40  | 65  | 100 | 100 | 125 | 160 |

## Mechanical properties

| Size                                        |                                |                      | M6   | M8   | M10  | M12   | M16   | M20   | M24    |
|---------------------------------------------|--------------------------------|----------------------|------|------|------|-------|-------|-------|--------|
| Nominal ultimate tensile strength - tension | f <sub>uk</sub>                | [N/mm <sup>2</sup> ] | 400  | 400  | 400  | 400   | 400   | 480   | 480    |
| Nominal yield strength - tension            | f <sub>yk</sub>                | [N/mm <sup>2</sup> ] | 320  | 320  | 320  | 320   | 320   | 384   | 384    |
| Cross sectional area - tension              | A <sub>s</sub>                 | [mm <sup>2</sup> ]   | 20.1 | 36.6 | 58   | 84.3  | 157   | 245   | 353    |
| Elastic section modulus                     | W <sub>el</sub>                | [mm <sup>3</sup> ]   | 21.2 | 50.3 | 98.2 | 169.6 | 402.1 | 785.4 | 1357.2 |
| Characteristic bending resistance           | M <sup>0</sup> <sub>Rk,s</sub> | [Nm]                 | 10.9 | 25.9 | 50.7 | 87.5  | 207.5 | 452.4 | 781.7  |
| Design bending resistance                   | M                              | [Nm]                 | 8.7  | 20.7 | 40.5 | 70    | 166   | 361.9 | 625.4  |

## Basic performance data

Performance data for single anchor without influence of edge distance and spacing

| Size                           |      | M6   | M8    | M10   | M12   | M16   | M20   | M24    |
|--------------------------------|------|------|-------|-------|-------|-------|-------|--------|
| MEAN ULTIMATE LOAD             |      |      |       |       |       |       |       |        |
| TENSION LOAD N <sub>Ru,m</sub> |      |      |       |       |       |       |       |        |
| Standard embedment depth       | [kN] | 8.70 | 18.10 | 19.80 | 28.00 | 49.70 | 65.30 | 67.60  |
| Reduced embedment depth        | [kN] | 5.70 | 10.90 | 11.40 | 21.50 | 43.00 | 45.50 | 62.70  |
| SHEAR LOAD V <sub>Ru,m</sub>   |      |      |       |       |       |       |       |        |
| Standard embedment depth       | [kN] | 6.00 | 12.20 | 19.20 | 28.00 | 51.50 | 80.90 | 118.60 |
| Reduced embedment depth        | [kN] | 6.00 | 12.20 | 19.10 | 28.00 | 51.50 | 94.70 | 118.60 |

## Basic performance data

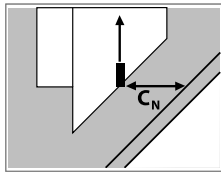
## Design performance data

Standard embedment depth

| Size                                                      |            |      | M6     | M8     | M10    | M12    | M16    | M20    | M24    |
|-----------------------------------------------------------|------------|------|--------|--------|--------|--------|--------|--------|--------|
| Effective embedment depth                                 | $h_{ef}$   | [mm] | 42.00  | 47.00  | 49.00  | 68.00  | 85.00  | 99.00  | 112.00 |
| <b>TENSION LOAD</b>                                       |            |      |        |        |        |        |        |        |        |
| <b>STEEL FAILURE</b>                                      |            |      |        |        |        |        |        |        |        |
| Characteristic resistance                                 | $N_{Rk,s}$ | [kN] | 8.10   | 15.80  | 25.20  | 37.30  | 66.10  | 101.00 | 137.20 |
| Design resistance $\gamma_{Ms} = 1.4$                     | $N_{Rd,s}$ | [kN] | 5.79   | 11.29  | 18.00  | 26.64  | 47.21  | 72.14  | 98.00  |
| <b>PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25</b>      |            |      |        |        |        |        |        |        |        |
| Characteristic resistance                                 | $N_{Rk,p}$ | [kN] | 6.80   | 12.00  | 12.00  | 25.00  | 40.00  | 40.00  | 50.00  |
| Design resistance $\gamma_{Mp} = 1.8$                     | $N_{Rd,p}$ | [kN] | 3.78   | 6.67   | 6.67   | 13.89  | 22.22  | 22.22  | 27.78  |
| Increasing factors for $N_{Rd,p}$ - C30/37                | $\psi_c$   | -    | 1.10   | 1.10   | 1.37   | 1.16   | 1.17   | 1.30   | 1.10   |
| Increasing factors for $N_{Rd,p}$ - C40/50                | $\psi_c$   | -    | 1.21   | 1.21   | 1.74   | 1.33   | 1.34   | 1.59   | 1.21   |
| Increasing factors for $N_{Rd,p}$ - C50/60                | $\psi_c$   | -    | 1.32   | 1.32   | 2.10   | 1.49   | 1.50   | 1.89   | 1.32   |
| Spacing                                                   | $s_{cr,N}$ | [mm] | 126.00 | 141.00 | 147.00 | 204.00 | 255.00 | 297.00 | 336.00 |
| Edge distance                                             | $c_{cr,N}$ | [mm] | 63.00  | 71.00  | 74.00  | 102.00 | 128.00 | 149.00 | 168.00 |
| <b>SHEAR LOAD</b>                                         |            |      |        |        |        |        |        |        |        |
| <b>CONCRETE EDGE FAILURE; NON-CRACKED CONCRETE C20/25</b> |            |      |        |        |        |        |        |        |        |
| Edge distance                                             | $c_1$      | [mm] | 50.00  | 55.00  | 65.00  | 90.00  | 105.00 | 160.00 | 200.00 |
| Characteristic resistance for $c_1$                       | $V_{Rk,c}$ | [kN] | 6.39   | 7.71   | 10.04  | 16.86  | 22.48  | 41.63  | 58.63  |
| Design resistance $\gamma_{Mc} = 1.8$                     | $V_{Rd,c}$ | [kN] | 3.55   | 4.28   | 5.58   | 9.37   | 12.49  | 23.13  | 32.57  |
| <b>STEEL FAILURE</b>                                      |            |      |        |        |        |        |        |        |        |
| Characteristic resistance without lever arm               | $V_{Rk,s}$ | [kN] | 5.50   | 10.10  | 16.00  | 23.30  | 43.00  | 67.40  | 94.10  |
| Design resistance $\gamma_{Ms} = 1.25$                    | $V_{Rd,s}$ | [kN] | 4.40   | 8.08   | 12.80  | 18.64  | 34.40  | 53.92  | 77.68  |

### Reduction / increasing resistance factors for edge distance and spacing

Edge distance (tension)



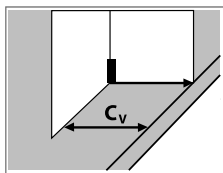
[English]: Tabela ważna tylko dla jednej krawędzi  $c_{cr,N}$  i  $s \geq s_{cr,N}$ . W innym wypadku skorzystaj z programu obliczeniowego Rawlplug EasyFix Anchor Calculator.

Reduction factors for edge distance  $c_{cr,N}$  applicable to  $N_{Rd}$  or  $N_{rec}$  for non-cracked concrete from 'Basic Performance' table

| $c_N$ [mm] | M6                |           | M8                |           | M10               |           | M12               |           | M16               |           | M20               |           | M24               |           |
|------------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
|            | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ |
| 40         |                   |           | 0,68              | 0,68      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 45         |                   |           | 0,73              | 0,73      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 50         | 1,00              | 1,00      | 0,78              | 0,78      | 0,82              | 0,82      |                   |           |                   |           |                   |           |                   |           |
| 55         |                   |           | 0,83              | 0,83      | 0,87              | 0,87      |                   |           |                   |           |                   |           |                   |           |
| 60         |                   |           | 0,88              | 0,88      | 0,92              | 0,92      |                   |           |                   |           |                   |           |                   |           |
| 70         |                   |           | 0,99              | 0,99      | 1,00              | 1,00      | 0,73              | 0,73      |                   |           |                   |           |                   |           |
| 75         |                   |           | 1,00              | 1,00      |                   |           | 0,76              | 0,76      |                   |           |                   |           |                   |           |
| 90         |                   |           |                   |           |                   |           | 0,86              | 0,86      | 0,72              | 0,72      |                   |           |                   |           |
| 100        |                   |           |                   |           |                   |           | 0,94              | 0,94      | 0,77              | 0,77      | 0,93              | 0,93      |                   |           |
| 120        |                   |           |                   |           |                   |           | 1,00              | 1,00      | 0,88              | 0,88      | 1,00              | 1,00      |                   |           |
| 140        |                   |           |                   |           |                   |           |                   |           | 0,97              | 0,97      |                   |           |                   |           |
| 160        |                   |           |                   |           |                   |           |                   |           | 1,00              | 1,00      |                   |           |                   |           |
| 180        |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |
| 200        |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           | 1,00              | 1,00      |

## Design performance data

Edge distance (shear)

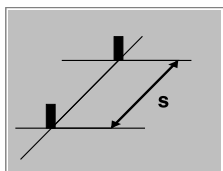


Tables only valid for one edge  
 $c_{v, \min}$  and  $s \geq 3c_v$  For other cases  
 use the Rawlplug Anchor Calculator

[English]: Współczynniki zwiększające dla odległości od krawędzi  $> c_{\min}$  stosowane dla VRd lub Vrec dla betonu niespękanego.

| $c_v$ [m] | M6           |            | M8           |            | M10          |            | M12          |            | M16          |            | M20          |            | M24          |            |
|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
|           | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ | $h > 1,5c_v$ | $h_{\min}$ |
| 40        |              |            | 0,50         | 0,50       |              |            |              |            |              |            |              |            |              |            |
| 45        |              |            | 0,58         | 0,58       |              |            |              |            |              |            |              |            |              |            |
| 50        | 1,00         | 1,00       | 0,67         | 0,67       | 0,44         | 0,44       |              |            |              |            |              |            |              |            |
| 55        |              |            | 0,76         | 0,76       | 0,50         | 0,50       |              |            |              |            |              |            |              |            |
| 60        |              |            | 0,86         | 0,86       | 0,56         | 0,56       |              |            |              |            |              |            |              |            |
| 70        |              |            | 1,00         | 1,00       | 0,69         | 0,68       | 0,52         | 0,52       |              |            |              |            |              |            |
| 75        |              |            |              |            | 0,76         | 0,72       | 0,57         | 0,57       |              |            |              |            |              |            |
| 90        |              |            |              |            | 0,98         | 0,84       | 0,72         | 0,72       | 0,43         | 0,43       |              |            |              |            |
| 100       |              |            |              |            | 1,00         | 0,92       | 0,83         | 0,79       | 0,49         | 0,49       | 0,33         | 0,33       |              |            |
| 120       |              |            |              |            |              | 1,00       | 1,00         | 0,93       | 0,62         | 0,61       | 0,42         | 0,42       |              |            |
| 140       |              |            |              |            |              |            |              | 1,00       | 0,77         | 0,69       | 0,52         | 0,50       |              |            |
| 160       |              |            |              |            |              |            |              |            | 0,91         | 0,77       | 0,62         | 0,56       |              |            |
| 180       |              |            |              |            |              |            |              |            | 1,00         | 0,85       | 0,72         | 0,62       |              |            |
| 200       |              |            |              |            |              |            |              |            |              | 0,93       | 0,83         | 0,67       | 0,77         | 0,66       |
| 250       |              |            |              |            |              |            |              |            |              | 1,00       | 1,00         | 0,81       | 1,03         | 0,80       |
| 300       |              |            |              |            |              |            |              |            |              |            |              | 0,95       | 1,27         | 0,93       |
| 350       |              |            |              |            |              |            |              |            |              |            |              | 1,00       |              | 1,06       |
| 400       |              |            |              |            |              |            |              |            |              |            |              |            |              | 1,19       |
| 450       |              |            |              |            |              |            |              |            |              |            |              |            |              | 1,27       |

Spacing



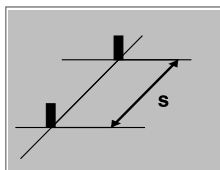
[English]: Tabela ważna tylko dla jednego rozstawu kotew  $< s_{cr,N}$  i  $c \geq c_{cr,N}$  W innym wypadku skorzystać z programu obliczeniowego Rawlplug EasyFix Anchor Calculator.

[English]: Współczynniki redukcyjne dla rozstawu kotew  $< s_{cr,N}$  stosowane dla NRd lub Nrec dla betonu niespękanego.

| $s_N$ [m] | M6                 |            | M8                 |            | M10                |            | M12                |            | M16                |            | M20                |            | M24                |            |
|-----------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
|           | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ | $h > 1,84h_{\min}$ | $h_{\min}$ |
| 45        | 0,82               | 0,82       |                    |            |                    |            |                    |            |                    |            |                    |            |                    |            |
| 50        | 0,84               | 0,84       | 0,68               | 0,68       |                    |            |                    |            |                    |            |                    |            |                    |            |
| 55        | 0,87               | 0,87       | 0,69               | 0,69       | 0,74               | 0,74       |                    |            |                    |            |                    |            |                    |            |
| 60        | 0,89               | 0,89       | 0,71               | 0,71       | 0,76               | 0,76       |                    |            |                    |            |                    |            |                    |            |
| 70        | 0,94               | 0,94       | 0,75               | 0,75       | 0,79               | 0,79       |                    |            |                    |            |                    |            |                    |            |
| 75        | 0,96               | 0,96       | 0,76               | 0,76       | 0,81               | 0,81       | 0,65               | 0,65       |                    |            |                    |            |                    |            |
| 90        | 1,00               | 1,00       | 0,82               | 0,82       | 0,87               | 0,87       | 0,69               | 0,69       | 0,63               | 0,63       |                    |            |                    |            |
| 100       |                    |            | 0,85               | 0,85       | 0,90               | 0,90       | 0,71               | 0,71       | 0,64               | 0,64       |                    |            |                    |            |
| 120       |                    |            | 0,92               | 0,92       | 0,98               | 0,98       | 0,76               | 0,76       | 0,68               | 0,68       |                    |            |                    |            |
| 140       |                    |            | 0,99               | 0,99       | 1,00               | 1,00       | 0,80               | 0,80       | 0,72               | 0,72       | 0,91               | 0,91       |                    |            |
| 160       |                    |            | 1,00               | 1,00       |                    |            | 0,85               | 0,85       | 0,75               | 0,75       | 0,95               | 0,95       |                    |            |
| 180       |                    |            |                    |            |                    |            | 0,90               | 0,90       | 0,79               | 0,79       | 0,99               | 0,99       | 1,00               | 1,00       |
| 200       |                    |            |                    |            |                    |            | 0,94               | 0,94       | 0,83               | 0,83       | 1,00               | 1,00       |                    |            |
| 250       |                    |            |                    |            |                    |            | 1,00               | 1,00       | 0,92               | 0,92       |                    |            |                    |            |
| 300       |                    |            |                    |            |                    |            |                    |            | 1,00               | 1,00       |                    |            |                    |            |

## Design performance data

### Spacing



[English]: Tabela ważna tylko dla jednego rozstawu kotew  $< s_{cr,N}$  i  $c \geq c_{cr,N}$ . W innym wypadku skorzystać z programu obliczeniowego Rawlplug Easy-Fix Anchor Calculator.

[English]: Współczynniki redukcyjne dla rozstawu kotew  $< s_{cr,N}$  stosowane dla NRd lub Nrec dla betonu niespękanego.

| $s_v$ [m] | M6           |           | M8           |           | M10          |           | M12          |           | M16          |           | M20          |           | M24          |           |
|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
|           | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ |
| 45        | 1,00         | 1,00      |              |           |              |           |              |           |              |           |              |           |              |           |
| 50        |              |           | 1,00         | 1,00      |              |           |              |           |              |           |              |           |              |           |
| 55        |              |           |              |           | 0,93         | 0,88      |              |           |              |           |              |           |              |           |
| 60        |              |           |              |           | 0,94         | 0,90      |              |           |              |           |              |           |              |           |
| 70        |              |           |              |           | 0,98         | 0,93      |              |           |              |           |              |           |              |           |
| 75        |              |           |              |           | 0,99         | 0,95      | 1,00         | 1,00      |              |           |              |           |              |           |
| 90        |              |           |              |           | 1,00         | 0,99      |              |           | 0,83         | 0,79      |              |           |              |           |
| 100       |              |           |              |           |              | 1,00      |              |           | 0,85         | 0,80      |              |           |              |           |
| 120       |              |           |              |           |              |           |              |           | 0,89         | 0,84      |              |           |              |           |
| 140       |              |           |              |           |              |           |              |           | 0,92         | 0,87      | 0,74         | 0,69      |              |           |
| 160       |              |           |              |           |              |           |              |           | 0,96         | 0,90      | 0,76         | 0,72      |              |           |
| 180       |              |           |              |           |              |           |              |           | 0,99         | 0,94      | 0,79         | 0,74      | 0,83         | 0,78      |
| 200       |              |           |              |           |              |           |              |           | 1,00         | 0,97      | 0,81         | 0,76      | 0,85         | 0,81      |
| 250       |              |           |              |           |              |           |              |           |              | 1,00      | 0,87         | 0,82      | 0,91         | 0,86      |
| 300       |              |           |              |           |              |           |              |           |              |           | 0,94         | 0,88      | 0,98         | 0,92      |
| 350       |              |           |              |           |              |           |              |           |              |           | 1,00         | 0,94      | 1,04         | 0,98      |
| 400       |              |           |              |           |              |           |              |           |              |           |              | 1,00      | 1,10         | 1,03      |
| 450       |              |           |              |           |              |           |              |           |              |           |              |           | 1,16         | 1,09      |
| 500       |              |           |              |           |              |           |              |           |              |           |              |           | 1,22         | 1,15      |
| 550       |              |           |              |           |              |           |              |           |              |           |              |           | 1,27         | 1,21      |
| 600       |              |           |              |           |              |           |              |           |              |           |              |           |              | 1,26      |
| 700       |              |           |              |           |              |           |              |           |              |           |              |           |              | 1,27      |

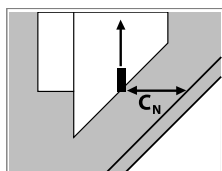
## Design performance data

Reduced embedment depth

| Size                                                  |             |      | M6    | M8    | M10    | M12    | M16    | M20    | M24    |
|-------------------------------------------------------|-------------|------|-------|-------|--------|--------|--------|--------|--------|
| Effective embedment depth                             | $h_{ef}$    | [mm] | 22.00 | 32.00 | 39.00  | 48.00  | 65.00  | 79.00  | 97.00  |
| TENSION LOAD                                          |             |      |       |       |        |        |        |        |        |
| STEEL FAILURE                                         |             |      |       |       |        |        |        |        |        |
| Characteristic resistance                             | $N_{Rk,s}$  | [kN] | 8.10  | 15.80 | 25.20  | 37.30  | 66.10  | 101.00 | 137.20 |
| Design resistance $V_{Ms} = 1.4$                      | $N_{Rd,s}$  | [kN] | 5.79  | 11.29 | 18.00  | 26.64  | 47.21  | 72.14  | 98.00  |
| PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25         |             |      |       |       |        |        |        |        |        |
| Characteristic resistance                             | $N_{Rk,p}$  | [kN] | 4.50  | 9.00  | 9.00   | 16.00  | 30.00  | 35.00  | 48.90  |
| Design resistance $V_{Mp} = 1.8$                      | $N_{Rd,p}$  | [kN] | 2.50  | 5.00  | 5.00   | 8.89   | 16.67  | 19.44  | 27.17  |
| Increasing factors for $N_{Rd,p}$ - C30/37            | $\Psi_c$    | -    | 1.25  | 1.25  | 1.36   | 1.20   | 1.12   | 1.18   | 1.25   |
| Increasing factors for $N_{Rd,p}$ - C40/50            | $\Psi_c$    | -    | 1.50  | 1.50  | 1.72   | 1.40   | 1.23   | 1.36   | 1.50   |
| Increasing factors for $N_{Rd,p}$ - C50/60            | $\Psi_c$    | -    | 1.76  | 1.76  | 2.08   | 1.60   | 1.34   | 1.54   | 1.76   |
| Spacing                                               | $s_{cr,N}$  | [mm] | 66.00 | 96.00 | 117.00 | 144.00 | 195.00 | 237.00 | 291.00 |
| Edge distance                                         | $c_{cr,N}$  | [mm] | 33.00 | 48.00 | 59.00  | 72.00  | 98.00  | 119.00 | 146.00 |
| SHEAR LOAD                                            |             |      |       |       |        |        |        |        |        |
| CONCRETE EDGE FAILURE; NON-CRACKED CONCRETE C20/25    |             |      |       |       |        |        |        |        |        |
| Edge distance                                         | $c_1$       | [mm] | 45.00 | 50.00 | 65.00  | 100.00 | 100.00 | 125.00 | 160.00 |
| Characteristic resistance for $c_1$                   | $V_{Rk,c}$  | [kN] | 5.05  | 6.37  | 9.67   | 18.36  | 20.04  | 28.81  | 42.54  |
| Design resistance $V_{Mc} = 1.8$                      | $V_{Rd,c}$  | [kN] | 2.80  | 3.54  | 5.37   | 10.20  | 11.13  | 16.00  | 23.63  |
| CONCRETE PRY-OUT FAILURE; NON-CRACKED CONCRETE C20/25 |             |      |       |       |        |        |        |        |        |
|                                                       | k           | -    | -     | -     | 1.00   | -      | -      | 2.00   | -      |
| Characteristic resistance                             | $V_{Rk,cp}$ | [kN] | -     | -     | 12.00  | -      | -      | 68.70  | -      |
| Design resistance $V_{Mc} = 1.8$                      | $V_{Rd,cp}$ | [kN] | -     | -     | 6.67   | -      | -      | 38.17  | -      |
| STEEL FAILURE                                         |             |      |       |       |        |        |        |        |        |
| Characteristic resistance without lever arm           | $V_{Rk,s}$  | [kN] | 5.50  | 10.10 | 16.00  | 23.30  | 43.00  | 67.40  | 97.10  |
| Design resistance $V_{Ms} = 1.25$                     | $V_{Rd,s}$  | [kN] | 4.40  | 8.08  | 12.80  | 18.64  | 34.40  | 53.92  | 77.68  |

### Reduction / increasing resistance factors for edge distance and spacing

Edge distance (tension)



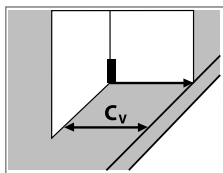
[English]: Tabela ważna tylko dla jednej krawędzi  $c_{cr,N}$  i  $s \geq s_{cr,N}$ . W innym wypadku skorzystaj z programu obliczeniowego Rawlplug EasyFix Anchor Calculator.

Reduction factors for edge distance  $c_{cr,N}$  applicable to  $N_{Rd}$  or  $N_{rec}$  for non-cracked concrete from 'Basic Performance' table

| $c_N$ [m] | M6                |           | M8                |           | M10               |           | M12               |           | M16               |           | M20               |           | M24               |           |
|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
|           | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ |
| 45        | 0,88              | 0,88      |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |
| 50        | 0,94              | 0,94      | 0,68              | 0,68      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 55        | 0,99              | 0,99      | 0,72              | 0,72      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 60        | 1,00              | 1,00      | 0,75              | 0,75      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 70        |                   |           | 0,82              | 0,82      | 1,00              | 1,00      |                   |           |                   |           |                   |           |                   |           |
| 75        |                   |           | 0,86              | 0,86      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 90        |                   |           | 0,96              | 0,96      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 100       |                   |           | 1,00              | 1,00      |                   |           | 0,93              | 0,93      | 0,84              | 0,84      |                   |           |                   |           |
| 120       |                   |           |                   |           |                   |           | 1,00              | 1,00      | 0,92              | 0,92      |                   |           |                   |           |
| 140       |                   |           |                   |           |                   |           |                   |           | 1,00              | 1,00      | 0,99              | 0,99      |                   |           |
| 160       |                   |           |                   |           |                   |           |                   |           |                   |           | 1,00              | 1,00      | 1,00              | 1,00      |

## Design performance data

Edge distance (shear)



[English]: Tabela ważna tylko dla jednej krawędzi  $c_{min}$  and  $s \geq 3c_v$ . W innym wypadku skorzystać z programu obliczeniowego Rawlplug EasyFix Anchor Calculator.

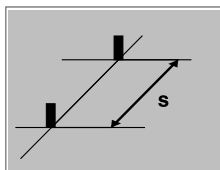
Increasing factors for edge distance  $>C_{min}$  applicable to  $V_{Rd,c}$  for non-cracked concrete from Design Performance table

| $c_v$ [m] | M6           |           | M8           |           | M10          |           | M12          |           | M16          |           | M20          |           | M24          |           |
|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
|           | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ |
| 45        | 0,88         | 0,88      |              |           |              |           |              |           |              |           |              |           |              |           |
| 50        | 0,94         | 0,94      | 0,63         | 0,63      |              |           |              |           |              |           |              |           |              |           |
| 55        | 0,99         | 0,99      | 0,72         | 0,72      |              |           |              |           |              |           |              |           |              |           |
| 60        | 1,05         | 1,05      | 0,81         | 0,81      |              |           |              |           |              |           |              |           |              |           |
| 70        | 1,16         | 1,16      | 1,00         | 0,98      | 0,67         | 0,65      |              |           |              |           |              |           |              |           |
| 75        | 1,22         | 1,22      |              | 1,00      | 0,73         | 0,69      |              |           |              |           |              |           |              |           |
| 90        | 1,29         | 1,29      |              |           | 0,94         | 0,81      |              |           |              |           |              |           |              |           |
| 100       |              |           |              |           | 1,00         | 0,89      | 0,79         | 0,64      | 0,47         | 0,43      |              |           |              |           |
| 120       |              |           |              |           |              | 1,00      | 1,00         | 0,75      | 0,59         | 0,51      |              |           |              |           |
| 140       |              |           |              |           |              |           |              | 0,86      | 0,73         | 0,58      | 0,50         | 0,43      |              |           |
| 160       |              |           |              |           |              |           |              | 0,97      | 0,88         | 0,65      | 0,59         | 0,48      | 0,67         | 0,60      |
| 180       |              |           |              |           |              |           |              | 1,00      | 1,00         | 0,71      | 0,69         | 0,53      | 0,78         | 0,66      |
| 200       |              |           |              |           |              |           |              |           |              | 0,78      | 0,80         | 0,58      | 0,89         | 0,72      |
| 250       |              |           |              |           |              |           |              |           |              | 0,95      | 1,00         | 0,70      | 1,21         | 0,87      |
| 300       |              |           |              |           |              |           |              |           |              | 1,00      |              | 0,82      | 1,52         | 1,01      |
| 350       |              |           |              |           |              |           |              |           |              |           |              | 0,94      |              | 1,16      |
| 400       |              |           |              |           |              |           |              |           |              |           |              | 1,00      |              | 1,30      |
| 450       |              |           |              |           |              |           |              |           |              |           |              |           |              | 1,44      |
| 500       |              |           |              |           |              |           |              |           |              |           |              |           |              | 1,52      |



## Design performance data

### Spacing



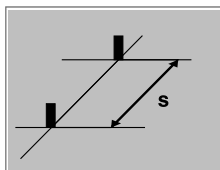
[English]: Tabela ważna tylko dla jednego rozstawu kotew  $< s_{cr,N}$  i  $c \geq c_{cr,N}$ . W innym wypadku skorzystać z programu obliczeniowego Rawlplug Easy-Fix Anchor Calculator.

Reduction factors for spacing  $< s_{cr,N}$  applicable to  $N_{Rd}/V_{Rd}$  or  $N_{rec}/V_{rec}$  for non-cracked concrete from 'Basic Performance' table

| $s_v$ [m] | M6           |           | M8           |           | M10          |           | M12          |           | M16          |           | M20          |           | M24          |           |
|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
|           | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ | $h > 1,5c_v$ | $h_{min}$ |
| 40        | 0,60         | 0,60      |              |           |              |           |              |           |              |           |              |           |              |           |
| 45        | 0,63         | 0,63      | 0,78         | 0,78      |              |           |              |           |              |           |              |           |              |           |
| 50        | 0,65         | 0,65      | 0,80         | 0,80      |              |           |              |           |              |           |              |           |              |           |
| 55        | 0,68         | 0,68      | 0,82         | 0,82      | 0,69         | 0,69      |              |           |              |           |              |           |              |           |
| 60        | 0,71         | 0,71      | 0,85         | 0,85      | 0,70         | 0,70      |              |           |              |           |              |           |              |           |
| 70        | 0,77         | 0,77      | 0,89         | 0,89      | 0,73         | 0,73      |              |           |              |           |              |           |              |           |
| 75        | 0,80         | 0,80      | 0,91         | 0,91      | 0,75         | 0,75      |              |           |              |           |              |           |              |           |
| 90        | 0,88         | 0,88      | 0,97         | 0,97      | 0,79         | 0,79      |              |           |              |           |              |           |              |           |
| 100       | 0,94         | 0,94      | 1,00         | 1,00      | 0,82         | 0,82      | 0,74         | 0,71      | 0,60         | 0,57      |              |           |              |           |
| 120       | 1,05         | 1,05      |              |           | 0,88         | 0,88      | 0,79         | 0,76      | 0,64         | 0,60      |              |           |              |           |
| 140       | 1,16         | 1,16      |              |           | 0,94         | 0,94      | 0,83         | 0,80      | 0,67         | 0,63      | 0,56         | 0,52      |              |           |
| 160       | 1,27         | 1,27      |              |           | 1,00         | 1,00      | 0,88         | 0,85      | 0,70         | 0,66      | 0,58         | 0,54      | 0,80         | 0,76      |
| 180       | 1,29         | 1,29      |              |           |              |           | 0,93         | 0,89      | 0,73         | 0,69      | 0,60         | 0,57      | 0,83         | 0,78      |
| 200       |              |           |              |           |              |           | 0,97         | 0,94      | 0,76         | 0,72      | 0,62         | 0,59      | 0,86         | 0,81      |
| 250       |              |           |              |           |              |           | 1,00         | 1,00      | 0,84         | 0,79      | 0,68         | 0,64      | 0,93         | 0,87      |
| 300       |              |           |              |           |              |           |              |           | 0,91         | 0,86      | 0,73         | 0,69      | 0,99         | 0,94      |
| 350       |              |           |              |           |              |           |              |           | 0,99         | 0,93      | 0,79         | 0,75      | 1,06         | 1,00      |
| 400       |              |           |              |           |              |           |              |           | 1,00         | 1,00      | 0,85         | 0,80      | 1,13         | 1,06      |
| 450       |              |           |              |           |              |           |              |           |              |           | 0,90         | 0,85      | 1,19         | 1,13      |
| 500       |              |           |              |           |              |           |              |           |              |           | 0,96         | 0,90      | 1,26         | 1,19      |
| 550       |              |           |              |           |              |           |              |           |              |           | 1,00         | 0,96      | 1,33         | 1,25      |
| 600       |              |           |              |           |              |           |              |           |              |           |              | 1,00      | 1,40         | 1,32      |
| 700       |              |           |              |           |              |           |              |           |              |           |              |           | 1,52         | 1,44      |

## Design performance data

Spacing



Reduction factors for spacing  
 $< S_{cr,N}$  applicable to  $N_{Rd}/V_{Rd}$  or  
 $N_{rec}/V_{rec}$  for non-cracked concrete from 'Basic Performance' table

[English]: Tabela ważna tylko dla jednego rozstawu kotew  $< s_{cr,N}$  i  $c \geq c_{cr,N}$ . W innym wypadku skorzystać z programu obliczeniowego Rawlplug EasyFix Anchor Calculator.

| $s_N$ [m] | M6                |           | M8                |           | M10               |           | M12               |           | M16               |           | M20               |           | M24               |           |
|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
|           | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ | $h > 1,84h_{min}$ | $h_{min}$ |
| 40        | 0,60              | 0,60      |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |
| 45        | 0,63              | 0,63      | 0,49              | 0,49      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 50        | 0,65              | 0,65      | 0,51              | 0,51      |                   |           |                   |           |                   |           |                   |           |                   |           |
| 55        | 0,68              | 0,68      | 0,53              | 0,53      | 0,70              | 0,70      |                   |           |                   |           |                   |           |                   |           |
| 60        | 0,71              | 0,71      | 0,54              | 0,54      | 0,72              | 0,72      |                   |           |                   |           |                   |           |                   |           |
| 70        | 0,77              | 0,77      | 0,58              | 0,58      | 0,76              | 0,76      |                   |           |                   |           |                   |           |                   |           |
| 75        | 0,80              | 0,80      | 0,60              | 0,60      | 0,78              | 0,78      |                   |           |                   |           |                   |           |                   |           |
| 90        | 0,88              | 0,88      | 0,65              | 0,65      | 0,84              | 0,84      |                   |           |                   |           |                   |           |                   |           |
| 100       | 0,94              | 0,94      | 0,68              | 0,68      | 0,88              | 0,88      | 0,66              | 0,66      | 0,62              | 0,62      |                   |           |                   |           |
| 120       | 1,00              | 1,00      | 0,75              | 0,75      | 0,96              | 0,96      | 0,71              | 0,71      | 0,67              | 0,67      |                   |           |                   |           |
| 140       |                   |           | 0,82              | 0,82      | 1,00              | 1,00      | 0,77              | 0,77      | 0,71              | 0,71      | 0,72              | 0,72      |                   |           |
| 160       |                   |           | 0,89              | 0,89      |                   |           | 0,82              | 0,82      | 0,75              | 0,75      | 0,76              | 0,76      | 1,00              | 1,00      |
| 180       |                   |           | 0,96              | 0,96      |                   |           | 0,87              | 0,87      | 0,79              | 0,79      | 0,80              | 0,80      |                   |           |
| 200       |                   |           | 1,00              | 1,00      |                   |           | 0,93              | 0,93      | 0,84              | 0,84      | 0,84              | 0,84      |                   |           |
| 250       |                   |           |                   |           |                   |           | 1,00              | 1,00      | 0,94              | 0,94      | 0,93              | 0,93      |                   |           |
| 300       |                   |           |                   |           |                   |           |                   |           | 1,00              | 1,00      | 1,00              | 1,00      |                   |           |

## Product commercial data

| Size | Product Code                  | Anchor        |             | Quantity [pcs] |       |        | Weight [kg] |       |        | Bar Codes     |
|------|-------------------------------|---------------|-------------|----------------|-------|--------|-------------|-------|--------|---------------|
|      |                               | Diameter [mm] | Length [mm] | Box            | Outer | Pallet | Box         | Outer | Pallet |               |
| M6   | R-XPT-06050/10 <sup>1)</sup>  | 6             | 50          | 100            | 100   | 16000  | 1.27        | 1.27  | 233.2  | 5906675233499 |
|      | R-XPT-06065/5 <sup>1)</sup>   | 6             | 65          | 100            | 100   | 16000  | 1.55        | 1.55  | 278.0  | 5906675233505 |
|      | R-XPT-06085/25 <sup>1)</sup>  | 6             | 85          | 100            | 100   | 16000  | 1.85        | 1.85  | 326.0  | 5906675233512 |
|      | R-XPT-06100/40 <sup>1)</sup>  | 6             | 100         | 100            | 100   | 16000  | 2.1         | 2.1   | 370.8  | 5906675250311 |
| M8   | R-XPT-08050/5 <sup>1)</sup>   | 8             | 50          | 100            | 100   | 16000  | 2.3         | 2.3   | 396.4  | 5906675250328 |
|      | R-XPT-08060/10 <sup>1)</sup>  | 8             | 60          | 100            | 100   | 16000  | 2.6         | 2.6   | 446.0  | 5906675234601 |
|      | R-XPT-08065/15 <sup>1)</sup>  | 8             | 65          | 100            | 100   | 16000  | 2.7         | 2.7   | 465.2  | 5906675250335 |
|      | R-XPT-08075/10 <sup>1)</sup>  | 8             | 75          | 100            | 100   | 16000  | 3.1         | 3.1   | 518.0  | 5906675233536 |
|      | R-XPT-08080/15 <sup>1)</sup>  | 8             | 80          | 100            | 100   | 16000  | 3.2         | 3.2   | 542.0  | 5906675250342 |
|      | R-XPT-08085/20 <sup>1)</sup>  | 8             | 85          | 100            | 100   | 16000  | 3.4         | 3.4   | 578.8  | 5906675249636 |
|      | R-XPT-08095/30 <sup>1)</sup>  | 8             | 95          | 100            | 100   | 12000  | 3.7         | 3.7   | 469.2  | 5906675233543 |
|      | R-XPT-08115/50 <sup>1)</sup>  | 8             | 115         | 100            | 100   | 16000  | 4.3         | 4.3   | 710.0  | 5906675233550 |
|      | R-XPT-08140/75 <sup>1)</sup>  | 8             | 140         | 100            | 100   | 16000  | 5.2         | 5.2   | 855.6  | 5906675233567 |
|      | R-XPT-08150/85 <sup>1)</sup>  | 8             | 150         | 100            | 100   | 16000  | 5.4         | 5.4   | 887.6  | 5906675250359 |
| M10  | R-XPT-10065/5 <sup>1)</sup>   | 10            | 65          | 50             | 50    | 8000   | 2.4         | 2.4   | 408.4  | 5906675233574 |
|      | R-XPT-10080/10 <sup>1)</sup>  | 10            | 80          | 50             | 50    | 8000   | 2.7         | 2.7   | 468.4  | 5906675233581 |
|      | R-XPT-10085/15 <sup>1)</sup>  | 10            | 85          |                |       |        |             |       |        |               |
|      | R-XPT-10095/25 <sup>1)</sup>  | 10            | 95          | 50             | 50    | 8000   | 3.1         | 3.1   | 527.6  | 5906675233598 |
|      | R-XPT-10115/45 <sup>1)</sup>  | 10            | 115         | 50             | 50    | 6000   | 3.6         | 3.6   | 463.2  | 5906675233604 |
|      | R-XPT-10130/60 <sup>1)</sup>  | 10            | 130         | 50             | 50    | 6000   | 4.0         | 4.0   | 505.8  | 5906675249643 |
|      | R-XPT-10140/70 <sup>1)</sup>  | 10            | 140         | 50             | 50    | 8000   | 4.2         | 4.2   | 705.2  | 5906675233611 |
| M10  | R-XPT-10150/80 <sup>1)</sup>  | 10            | 150         | 50             | 50    | 8000   | 4.5         | 4.5   | 742.0  | 5906675249650 |
|      | R-XPT-10180/110 <sup>1)</sup> | 10            | 180         | 50             | 50    | 6000   | 5.2         | 5.2   | 654.6  | 5906675250366 |

## Product commercial data

<sup>1)</sup> ETA 17/0183