

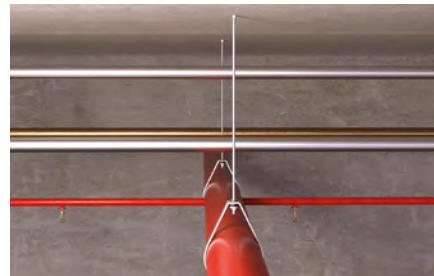
# Hammerset anchor EA II

The cost-effective hammerset anchor with a rim for quick and easy installation.

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Pipelines



Sprinklers

## Applications

- Pipelines and ventilation ducts
- Sprinkler systems
- Cable conduits and wires
- Gratings
- Steel constructions
- Machines
- Consoles
- Shuttering props
- Diamond or core drilling devices (EA II M12 D)

## Advantages

- The embossed rim prevents the anchor sleeve from slipping, thus ensuring a trouble-free hammerset installation.
- The metric internal thread means that it is possible to use standard screws or threaded rods for the ideal adaptation to suit the intended use.
- The EMS machine setting tool allows for effortless installation, particularly in the case of series installations.

- The embossing that is applied when expanding with the EHS Plus setting tool offers a simple control of the anchoring and provides increased safety.
- Fixing point at hef 25 mm prevents anchor of falling out of the drill hole before being expanded.
- The black fixing point prevents the anchor from falling out of the drill hole during overhead installation.

## Certificates / Features



ETA-07/0135, in concrete  
ETA-07/0142, for non-structural applications in concrete



## Building materials

### Approved for:

- Concrete C20/25 to C50/60, cracked, for the multiple fixings of non-load-bearing systems
- Concrete C20/25 to C50/60, non-cracked

### Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

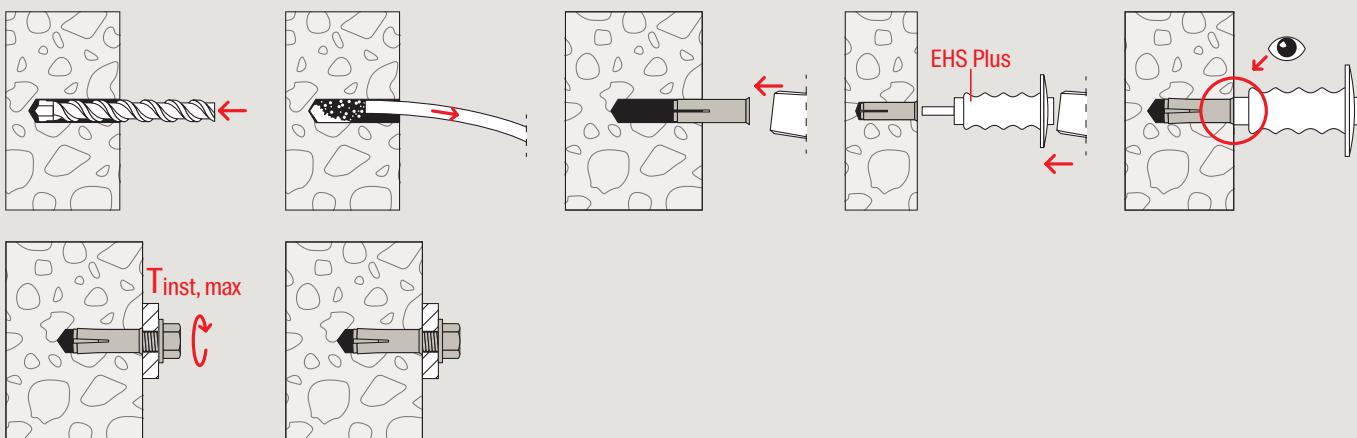
## Versions

- Galvanised steel
- Stainless steel R

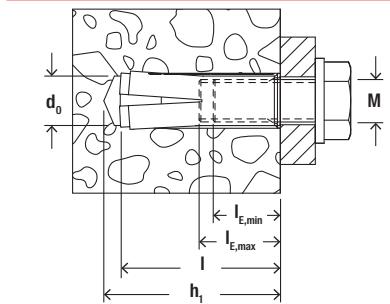
## Functioning

- The EA II is suitable for pre-positioned installation.
- Position the hammerset anchor in the drill hole and drive in flush to the surface of the anchor base using the hammer.
- The sleeve is then expanded by driving in the internal bolt with the EHS Plus setting tool (alternative: EMS machine setting tool), and expanded against the drill hole wall.
- The setting tools must sit on the rim of the anchor to ensure correct expansion.
- Use the special EA II M12 x 50 D / EA M 12 x 50 N D with thicker sleeve for fixing diamond and core drilling devices.

## Installation EA II



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## Technical data

## Hammerset anchor EA II



EA II with reduced anchorage depth  $h_{ef}$  25 mm and a black fixing point which prevents the anchor from falling out of the drill hole



EA II not suitable for diamond drilling appliances and diamond saws

| Item            | Galvanised steel<br>Item no.<br>gvz | Stainless steel<br>Item no.<br>R | Ap-pro-val<br>ETA | Drill diameter<br>$d_0$<br>[mm] | Min. drill hole depth for pre-positioned installation<br>$h_1$<br>[mm] | Anchor length<br>$l$<br>[mm] | Internal thread<br>M | Min. bolt penetration<br>$l_{E,min}$<br>[mm] | Max. bolt penetration<br>$l_{E,max}$<br>[mm] | Sales unit<br>[pcs] |
|-----------------|-------------------------------------|----------------------------------|-------------------|---------------------------------|------------------------------------------------------------------------|------------------------------|----------------------|----------------------------------------------|----------------------------------------------|---------------------|
| EA II M 6 x 25  | 532230                              | –                                | ●                 | 8                               | 27                                                                     | 25                           | M6                   | 6                                            | 14                                           | 100                 |
| EA II M 6 x 30  | 048264                              | 048410                           | ●                 | 8                               | 32                                                                     | 30                           | M6                   | 6                                            | 14                                           | 100                 |
| EA II M 8 x 25  | 532231                              | –                                | ●                 | 10                              | 27                                                                     | 25                           | M8                   | 8                                            | 14                                           | 100                 |
| EA II M 8 x 30  | 048284                              | 048411                           | ●                 | 10                              | 33                                                                     | 30                           | M8                   | 8                                            | 14                                           | 100                 |
| EA II M 8 x 40  | 048323                              | 048412                           | ●                 | 10                              | 43                                                                     | 40                           | M8                   | 8                                            | 14                                           | 50                  |
| EA II M 10 x 25 | 532232                              | –                                | ●                 | 12                              | 27                                                                     | 25                           | M10                  | 10                                           | 14                                           | 50                  |
| EA II M 10 x 30 | 048332                              | –                                | ●                 | 12                              | 33                                                                     | 30                           | M10                  | 10                                           | 14                                           | 50                  |
| EA II M 10 x 40 | 048339                              | 048414                           | ●                 | 12                              | 43                                                                     | 40                           | M10                  | 10                                           | 17                                           | 50                  |
| EA II M 12 x 25 | 532233                              | –                                | ●                 | 15                              | 27                                                                     | 25                           | M12                  | 12                                           | 14                                           | 25                  |
| EA II M 12 x 50 | 048406                              | 048415                           | ●                 | 15                              | 54                                                                     | 50                           | M12                  | 12                                           | 22                                           | 25                  |
| EA II M 16 x 65 | 048408                              | 048416                           | ●                 | 20                              | 70                                                                     | 65                           | M16                  | 16                                           | 28                                           | 20                  |
| EA II M 20 x 80 | 048409                              | 048417                           | ●                 | 25                              | 85                                                                     | 80                           | M20                  | 20                                           | 34                                           | 10                  |

## Technical data

## Hammerset anchor EA II D



EA II M12 x 50 D

EA M12 x 50 N D

| Item                | Item no. | Ap-pro-val<br>ETA | Drill diameter<br>$d_0$<br>[mm] | Min. drill hole<br>depth for pre-posi-tioned installation<br>$h_1$<br>[mm] | Anchor length<br>$l$<br>[mm] | Internal thread | Min. bolt penetra-tion<br>$l_{E,min}$<br>[mm] | Max. bolt penetra-tion<br>$l_{E,max}$<br>[mm] | Sales unit<br>[pcs] |
|---------------------|----------|-------------------|---------------------------------|----------------------------------------------------------------------------|------------------------------|-----------------|-----------------------------------------------|-----------------------------------------------|---------------------|
| EA M12 x 50 N D gvw | 500872   | –                 | 16                              | 50                                                                         | 50                           | M12             | 12                                            | 22                                            | 50                  |
| EA II M12 x 50 D    | 048407   | ●                 | 16                              | 54                                                                         | 50                           | M12             | 12                                            | 22                                            | 25                  |

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## Technical data

## Stop drill EBB



EBB

| Item        | Item no. | Drill diameter<br>$d_0$<br>[mm] | Drill hole depth<br>$h_0$<br>[mm] | Match           | Sales unit<br>[pcs] |
|-------------|----------|---------------------------------|-----------------------------------|-----------------|---------------------|
| EBB 8 x 25  | 532607   | 8                               | 27                                | EA II M 6 x 25  | 1                   |
| EBB 10 x 25 | 532608   | 10                              | 27                                | EA II M 8 x 25  | 1                   |
| EBB 12 x 25 | 532609   | 12                              | 27                                | EA II M 10 x 25 | 1                   |
| EBB 15 x 25 | 532610   | 15                              | 27                                | EA II M 12 x 25 | 1                   |

## Technical data

## Machine setting tool EMS



EMS

| Item            | Item no. | Tool holder | Match                                                   | Sales unit<br>[pcs] |
|-----------------|----------|-------------|---------------------------------------------------------|---------------------|
| EMS M 6 x 25/30 | 048065   | SDS-plus    | EA II M 6 x 25, EA II M 6 x 30                          | 1                   |
| EMS M 8 x 25/30 | 048066   | SDS-plus    | EA II M 8 x 25, EA II M 8 x 30                          | 1                   |
| EMS M 8 x 40    | 048067   | SDS-plus    | EA II M 8 x 40                                          | 1                   |
| EMS M10 x 25/30 | 048068   | SDS-plus    | EA II M 10 x 25, EA II M 10 x 30                        | 1                   |
| EMS M10 x 40    | 048070   | SDS-plus    | EA II M 10 x 40                                         | 1                   |
| EMS M12 x 50    | 048071   | SDS-plus    | EA II M 12 x 50 D, EA II M 12 x 50,<br>EA M 12 x 50 N D | 1                   |
| EMS M16 x 65    | 048072   | SDS-max     | EA II M 16 x 65                                         | 1                   |
| EMS M 20 x 80   | 048073   | SDS-max     | EA II M 20 x 80                                         | 1                   |

## Technical data

## Setting tool EMS Plus



EHS Plus

EA-ST

| Item                 | Item no. | Match                          | Sales unit<br>[pcs] |
|----------------------|----------|--------------------------------|---------------------|
| EHS M 6 x 25/30 Plus | 044630   | EA II M 6 x 25, EA II M 6 x 30 | 1                   |
| EHS M 8 x 25/30 Plus | 044631   | EA II M 8 x 25, EA II M 8 x 30 | 1                   |
| EHS M 8 x 40 Plus    | 044632   | EA II M 8 x 40                 | 1                   |

## Technical data

### Setting tool EMS Plus



EHS Plus

EA-ST

| Item                 | Item no. | Match                              | Sales unit<br>[pcs] |
|----------------------|----------|------------------------------------|---------------------|
|                      |          |                                    |                     |
| EHS M10 x 40 Plus    | 044633   | EA II M 10 x 40                    | 1                   |
| EHS M12 x 50 Plus    | 044634   | EA II M 12 x 50, EA II M 12 x 50 D | 1                   |
| EHS M16 x 65 Plus    | 044635   | EA II M 16 x 65                    | 1                   |
| EHS M 20 x 80 Plus   | 044636   | EA II M 20 x 80                    | 1                   |
| EHS M10 x 25/30 Plus | 048487   | EA II M 10 x 25, EA II M 10 x 30   | 1                   |
| EA-ST12              | 504585   | EA N M12, EA IM 1/2 N, EA I 1/2 N  | 1                   |
| EHS M12 x 25 Plus    | 532568   | EA II M 12 x 25                    | 1                   |

## Loads

### Hammerset anchor EA II

Permissible loads of a single anchor<sup>1)</sup> in normal concrete of strength class C20/25. For the design the complete current assessment ETA-07/0135 has to be considered.

| Type           | Material/sur-face <sup>2)</sup> | Screw material | Effective anchorage depth | Member thickness | Maximum installation torque | Non-cracked concrete                    |                                         |                                        |                                        |
|----------------|---------------------------------|----------------|---------------------------|------------------|-----------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|
|                |                                 |                |                           |                  |                             | N <sub>perm</sub> <sup>3)</sup><br>[kN] | V <sub>perm</sub> <sup>3)</sup><br>[kN] | s <sub>min</sub> <sup>3)</sup><br>[mm] | c <sub>min</sub> <sup>3)</sup><br>[mm] |
| EA II M8 x 40  | gvz                             | 5.8            | 40                        | 100              | 8                           | 5.9                                     | 4.9                                     | 70                                     | 115                                    |
|                | gvz                             | 8.8            | 40                        | 100              | 8                           | 5.9                                     | 4.9                                     | 70                                     | 115                                    |
|                | R                               | A4-70          | 40                        | 100              | 8                           | 5.9                                     | 5.6                                     | 70                                     | 115                                    |
| EA II M10 x 40 | gvz                             | 5.8            | 40                        | 120              | 15                          | 5.9                                     | 6.2                                     | 95                                     | 150                                    |
|                | gvz                             | 8.8            | 40                        | 120              | 15                          | 5.9                                     | 6.2                                     | 95                                     | 150                                    |
|                | R                               | A4-70          | 40                        | 120              | 15                          | 5.9                                     | 7.1                                     | 95                                     | 150                                    |
| EA II M12 x 50 | gvz                             | 5.8            | 50                        | 120              | 35                          | 8.3                                     | 11.3                                    | 145                                    | 200                                    |
|                | gvz                             | 8.8            | 50                        | 120              | 35                          | 8.3                                     | 11.3                                    | 145                                    | 200                                    |
|                | R                               | A4-70          | 50                        | 120              | 35                          | 8.3                                     | 12.9                                    | 145                                    | 200                                    |
| EA II M16 x 65 | gvz                             | 5.8            | 65                        | 160              | 60                          | 12.3                                    | 18.3                                    | 180                                    | 240                                    |
|                | gvz                             | 8.8            | 65                        | 160              | 60                          | 12.3                                    | 18.3                                    | 180                                    | 240                                    |
|                | R                               | A4-70          | 65                        | 160              | 60                          | 12.3                                    | 21.1                                    | 180                                    | 240                                    |
| EA II M20 x 80 | gvz                             | 5.8            | 80                        | 200              | 120                         | 16.8                                    | 29.1                                    | 190                                    | 280                                    |
|                | gvz                             | 8.8            | 80                        | 200              | 120                         | 16.8                                    | 29.1                                    | 190                                    | 280                                    |
|                | R                               | A4-70          | 80                        | 200              | 120                         | 16.8                                    | 33.5                                    | 190                                    | 280                                    |

<sup>1)</sup> Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of  $\gamma_L = 1.4$  are considered. As a single anchor counts e.g. an anchor with a spacing  $s \geq 3 \times h_{ef}$  and an edge distance  $c \geq 1.5 \times h_{ef}$ . Accurate data see ETA.

<sup>2)</sup> For technical data on steel grade and variants, see ETA.

<sup>3)</sup> In the case of combinations of tension and shear loads, bending moments with reduced or minimum spacing and edge distances (anchor groups), the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018. We recommend using our anchor design software C-FIX.

## Loads

### Hammerset anchor EA II

Permissible loads for a single anchor<sup>1)</sup> for multiple use of redundant non-structural applications\* in normal concrete C20/25 up to C50/60.

For the design the complete current assessment ETA-07/0142 has to be considered.

| Type           | Material/surface <sup>2)</sup> | Screw material | Effective anchorage depth<br>$h_{ef}$<br>[mm] | Minimum member thickness<br>$h_{min}$ <sup>3)</sup><br>[mm] | Maximum installation torque<br>$T_{inst,max}$<br>[Nm] | Cracked and non-cracked concrete                                                                                         |                                  |                   |
|----------------|--------------------------------|----------------|-----------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------|
|                |                                |                |                                               |                                                             |                                                       | Permissible load ( $F_{perm}$ );<br>minimum spacing ( $s_{min}$ ) and edge distances ( $c_{min}$ )<br>with reduced loads | $F_{perm}$ <sup>4)</sup><br>[kN] | $s_{min}$<br>[mm] |
| EA II M6 x 25  | gvz                            | 4.6            | 25                                            | 80                                                          | 4                                                     | 1.0                                                                                                                      | 30                               | 60                |
| EA II M6 x 30  | gvz                            | 4.6            | 30                                            | 80                                                          | 4                                                     | 1.2                                                                                                                      | 70                               | 150               |
| EA II M8 x 25  | gvz                            | 4.6            | 25                                            | 80                                                          | 8                                                     | 1.4                                                                                                                      | 70                               | 100               |
| EA II M8 x 30  | gvz                            | 4.6            | 30                                            | 80                                                          | 8                                                     | 2.0                                                                                                                      | 110                              | 150               |
| EA II M8 x 40  | gvz                            | 4.6            | 40                                            | 80                                                          | 8                                                     | 2.0                                                                                                                      | 200                              | 150               |
| EA II M10 x 25 | gvz                            | 4.6            | 25                                            | 80                                                          | 15                                                    | 1.9                                                                                                                      | 80                               | 120               |
| EA II M10 x 30 | gvz                            | 4.6            | 30                                            | 80                                                          | 15                                                    | 2.0                                                                                                                      | 200                              | 150               |
| EA II M10 x 40 | gvz                            | 4.6            | 40                                            | 80                                                          | 15                                                    | 3.0                                                                                                                      | 200                              | 150               |
| EA II M12 x 25 | gvz                            | 4.6            | 25                                            | 80                                                          | 35                                                    | 1.9                                                                                                                      | 100                              | 130               |
| EA II M12 x 50 | gvz                            | 4.6            | 50                                            | 100                                                         | 35                                                    | 4.3                                                                                                                      | 200                              | 200               |

\* In addition to the load table above, the following must be considered for multiple fastening of non-structural redundant systems:

A multiple fixing (redundant system) according to EN 1992-4 and CEN/TR 17079 is defined by

- at least 3 fixing points (per attached element) with at least one anchor at each fixing point and a permissible load per fixing point of 1.4 kN

- or by at least 4 fixing points with at least one anchor each fixing point and a permissible load per fixing point of 2.1 kN

- Additionally, it has to be proven that the stiffness of the attached element shall be large enough to ensure that in case of excessive slip or failure of a fastener the load on this fastener or fixing point can be transferred to neighbouring fixing points without significantly violating the requirements on the attached element in the serviceability and ultimate limit state.

For further details see EN 1992-4 section 7.3 and CEN/TR 17079.

<sup>1)</sup> Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of  $\gamma_L = 1.4$  are considered.

<sup>2)</sup> For details of steel grade, variants and further concrete classes, see ETA.

<sup>3)</sup> Minimum possible member thickness while increasing the spacing and edge distances at the same time. The combination of minimum spacing and edge distances with the minimum member thickness is not possible. Exact data see ETA.

<sup>4)</sup> Valid for tensile load, shear load and oblique load under any angle. In the case of combinations of tensile, shear loads and bending moments, the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018.

## Loads

### Hammerset anchor EA II

Permissible loads for a single anchor<sup>1)</sup> for multiple use of redundant non-structural applications\* in pre-stressed hollow core slabs of concrete C30/37 up to C50/60.

For the design the complete current assessment ETA-07/0142 has to be considered.

| Type           | Material/surface <sup>2)</sup> | Screw material | Effective anchorage depth<br>$h_{ef}$<br>[mm] | Bottom flange thickness <sup>4)</sup><br>$d_b$<br>[mm] | Maximum installation torque<br>$T_{inst,max}$<br>[Nm] | Cracked and non-cracked concrete                                                                                         |                                  |                   |
|----------------|--------------------------------|----------------|-----------------------------------------------|--------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------|
|                |                                |                |                                               |                                                        |                                                       | Permissible load ( $F_{perm}$ );<br>minimum spacing ( $s_{min}$ ) and edge distances ( $c_{min}$ )<br>with reduced loads | $F_{perm}$ <sup>3)</sup><br>[kN] | $s_{min}$<br>[mm] |
| EA II M6 x 25  | gvz                            | 4.6            | 25                                            | $\geq 35$                                              | 4                                                     | 1.0                                                                                                                      | 200                              | 150               |
| EA II M8 x 25  | gvz                            | 4.6            | 25                                            | $\geq 35$                                              | 8                                                     | 1.4                                                                                                                      | 200                              | 150               |
| EA II M10 x 25 | gvz                            | 4.6            | 25                                            | $\geq 35$                                              | 15                                                    | 1.9                                                                                                                      | 200                              | 150               |
| EA II M12 x 25 | gvz                            | 4.6            | 25                                            | $\geq 35$                                              | 35                                                    | 1.9                                                                                                                      | 200                              | 150               |

\* In addition to the load table above, the following must be considered for multiple fastening of non-structural redundant systems:

A multiple fixing (redundant system) according to EN 1992-4 and CEN/TR 17079 is defined by

- at least 3 fixing points (per attached element) with at least one anchor at each fixing point and a permissible load per fixing point of 1.4 kN

- or by at least 4 fixing points with at least one anchor each fixing point and a permissible load per fixing point of 2.1 kN

- Additionally, it has to be proven that the stiffness of the attached element shall be large enough to ensure that in case of excessive slip or failure of a fastener the load on this fastener or fixing point can be transferred to neighbouring fixing points without significantly violating the requirements on the attached element in the serviceability and ultimate limit state.

For further details see EN 1992-4 section 7.3 and CEN/TR 17079.

<sup>1)</sup> Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of  $\gamma_L = 1.4$  are considered.

<sup>2)</sup> For details of steel grade and variants, see ETA.

<sup>3)</sup> Valid for tensile load, shear load and oblique load under any angle. In the case of combinations of tensile, shear loads and bending moments, the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018.

<sup>4)</sup> The anchor may be used in a flange thickness  $d_b = 30$  mm with the same characteristic resistance, but the drill hole must not cut a cavity.