

Fixing bolt anchor W-FAZ PRO/S

High-performance stud anchors for highest loads in cracked and non-cracked concrete, zinc plated steel

Highest load values at low axial and edge clearances

Extra-large anchoring depths maximise the already high load values per anchor

Quick assembly with fewer reinforcement impacts

Extra small anchoring depths minimise drilling and setting time

Economical and flexible application

Freely selectable setting depth allows optimum utilisation of the anchors depending on the setting depth and application

Minimum edge distance and spacing

Allows for near-edge fixings, small anchor plates and mounting in thin concrete parts

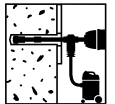
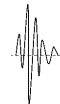
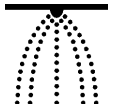
For earthquake-proof building

High performance under seismic influence, earthquake performance categories C1 and C2

Time-saving through-bolt mounting



2.1

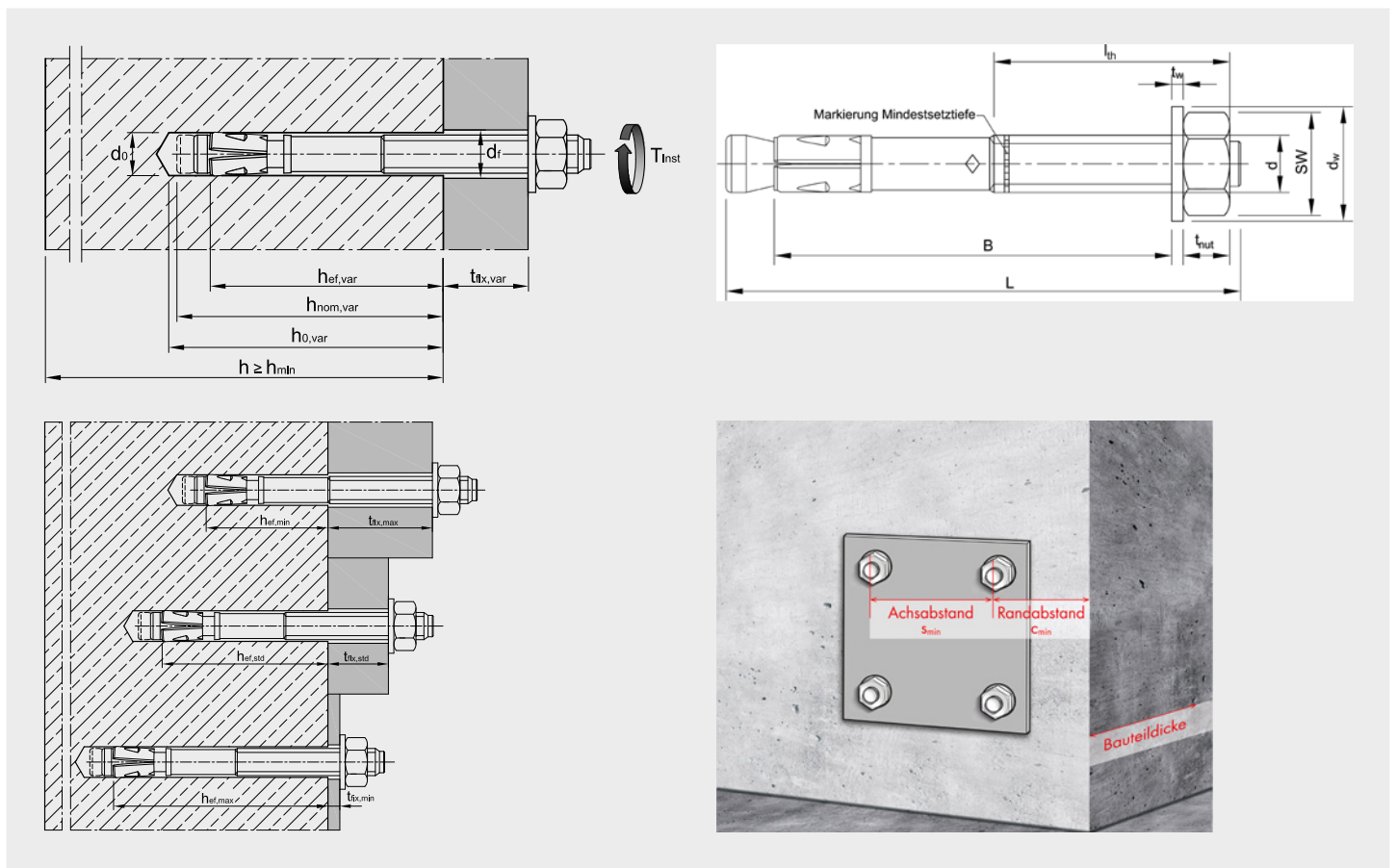


| | |
|----------|-------------|
| Material | Steel |
| Surface | Zinc plated |

| Metric anchor diameter | Anchor length (l) | Min./max. height of the fixture (t fix) | Attachment height standard (t fix, std) | Anchoring depth (h ef, min/max) | Effective length (B) | Art. no. | P. Qty. |
|------------------------|-------------------|---|---|---------------------------------|----------------------|---------------------|---------|
| M8 | 60 mm | 0-5 mm | | 35-40 mm | 40 mm | 5930 208 905 | 100 |
| M8 | 65 mm | 0-10 mm | | 35-45 mm | 45 mm | 5930 208 910 | 100 |
| M8 | 75 mm | 0-20 mm | 10 mm | 35-55 mm | 55 mm | 5930 208 010 | 100 |
| M8 | 80 mm | 0-25 mm | 15 mm | 35-60 mm | 60 mm | 5930 208 015 | 100 |
| M8 | 95 mm | 0-40 mm | 30 mm | 35-75 mm | 75 mm | 5930 208 030 | 100 |
| M8 | 115 mm | 5-60 mm | 50 mm | 35-90 mm | 95 mm | 5930 208 050 | 100 |
| M8 | 165 mm | 55-110 mm | 100 mm | 35-90 mm | 145 mm | 5930 208 100 | 50 |
| M10 | 70 mm | 0-10 mm | | 40-50 mm | 50 mm | 5930 210 910 | 50 |
| M10 | 80 mm | 0-20 mm | | 40-60 mm | 60 mm | 5930 210 920 | 50 |
| M10 | 90 mm | 0-30 mm | 10 mm | 40-70 mm | 70 mm | 5930 210 010 | 50 |
| M10 | 95 mm | 0-35 mm | 15 mm | 40-75 mm | 75 mm | 5930 210 015 | 50 |
| M10 | 100 mm | 0-40 mm | 20 mm | 40-80 mm | 80 mm | 5930 210 020 | 50 |
| M10 | 110 mm | 0-50 mm | 30 mm | 40-90 mm | 90 mm | 5930 210 030 | 50 |
| M10 | 130 mm | 10-70 mm | 50 mm | 40-100 mm | 110 mm | 5930 210 050 | 50 |
| M10 | 155 mm | 35-95 mm | 75 mm | 40-100 mm | 135 mm | 5930 210 075 | 50 |
| M10 | 180 mm | 60-120 mm | 100 mm | 40-100 mm | 160 mm | 5930 210 100 | 50 |
| M12 | 85 mm | 0-10 mm | | 50-60 mm | 60 mm | 5930 212 910 | 25 |

| Metric anchor diameter | Anchor length (l) | Min./max. height of the fixture (t fix) | Attachment height standard (t fix,std) | Anchoring depth (h ef, min/max) | Effective length (B) | Art. no. | P. Qty. |
|------------------------|-------------------|---|--|---------------------------------|----------------------|---------------------|---------|
| M12 | 95 mm | 0-20 mm | | 50-70 mm | 70 mm | 5930 212 920 | 25 |
| M12 | 105 mm | 0-30 mm | 10 mm | 50-80 mm | 80 mm | 5930 212 010 | 25 |
| M12 | 110 mm | 0-35 mm | 15 mm | 50-85 mm | 85 mm | 5930 212 015 | 25 |
| M12 | 115 mm | 0-40 mm | 20 mm | 50-90 mm | 90 mm | 5930 212 020 | 25 |
| M12 | 125 mm | 0-50 mm | 30 mm | 50-100 mm | 100 mm | 5930 212 030 | 25 |
| M12 | 145 mm | 0-70 mm | 50 mm | 50-120 mm | 120 mm | 5930 212 050 | 25 |
| M12 | 160 mm | 10-85 mm | 65 mm | 50-125 mm | 135 mm | 5930 212 065 | 25 |
| M12 | 180 mm | 30-105 mm | 85 mm | 50-125 mm | 155 mm | 5930 212 085 | 25 |
| M12 | 200 mm | 50-125 mm | 105 mm | 50-125 mm | 175 mm | 5930 212 105 | 25 |
| M16 | 115 mm | 0-15 mm | | 65-80 mm | 80 mm | 5930 216 915 | 20 |
| M16 | 125 mm | 0-25 mm | 5 mm | 65-90 mm | 90 mm | 5930 216 005 | 20 |
| M16 | 135 mm | 0-35 mm | 15 mm | 65-100 mm | 100 mm | 5930 216 015 | 20 |
| M16 | 145 mm | 0-45 mm | 25 mm | 65-110 mm | 110 mm | 5930 216 025 | 20 |
| M16 | 170 mm | 0-70 mm | 50 mm | 65-135 mm | 135 mm | 5930 216 050 | 20 |
| M16 | 200 mm | 5-100 mm | 80 mm | 65-160 mm | 165 mm | 5930 216 080 | 10 |

Technical Information



Installation parameters¹⁾

| Anchor diameter | | [mm] | M8 | | | | M10 | | | |
|-------------------------------------|------------------|--------------|-----------------------------------|--------------|--------------|--------------|-----------------------------------|--------------|--------------|----|
| Variable effective anchoring depths | h_{ef} | $h_{ef,var}$ | $h_{ef,min}$ | $h_{ef,max}$ | $h_{ef,std}$ | $h_{ef,var}$ | $h_{ef,min}$ | $h_{ef,max}$ | $h_{ef,std}$ | |
| | [mm] | h_{ef} | 35 | 90 | 45 | h_{ef} | 40 | 100 | 60 | |
| Setting depth | h_{nom} | [mm] | $h_{ef}+8$ | 43 | 98 | 53 | $h_{ef}+9$ | 49 | 109 | 69 |
| Minimum component thickness | h_{min} | [mm] | max ($1.5 \cdot h_{ef}$; 80) | 80 | 135 | 80 | max ($1.5 \cdot h_{ef}$; 80) | 80 | 150 | 90 |
| Minimum axis distance | s_{min} | [mm] | 35 | | | | 40 | | | |
| Minimum edge spacing | c_{min} | [mm] | 40 | | | | 45 | | | |
| Nom. drill dia. | d_o | [mm] | 8 | | | | 10 | | | |
| Drill cutting dia. | $d_{cut} \leq$ | [mm] | 8,45 | | | | 10,45 | | | |
| Drill hole depth | h_o | [mm] | $h_{ef}+8$ | 43 | 98 | 53 | $h_{ef}+9$ | 49 | 109 | 69 |
| Through hole in attachment part | $d_f \leq$ | [mm] | 9 | | | | 12 | | | |
| Width across flats | AF | [mm] | 13 | | | | 17 | | | |
| Torque while installing anchor | $T_{inst} =$ | [Nm] | 15 | | | | 40 | | | |
| Height of the hexagon nut | t_{nut} | [mm] | 6,5 | | | | 8 | | | |
| Height x dia. washer | $t_w \times d_w$ | [mm] | 1.5 x 16 | | | | 2 x 20 | | | |

1) For anchor groups and anchoring close to the edge, the combinations of the minimum values (component thickness, axis and edge distances) and the associated loads must be determined in accordance with the calculation methods of European Technical Assessment (ETA-20/00229), depending on the anchoring depth.

Installation parameters¹⁾

| Anchor diameter | | [mm] | M12 | | | | M16 | | | |
|-------------------------------------|------------------|--------------|------------------------------------|--------------|--------------|--------------|------------------------------------|--------------|--------------|-------|
| Variable effective anchoring depths | h_{ef} | $h_{ef,var}$ | $h_{ef,min}$ | $h_{ef,max}$ | $h_{ef,std}$ | $h_{ef,var}$ | $h_{ef,min}$ | $h_{ef,max}$ | $h_{ef,std}$ | |
| | [mm] | h_{ef} | 50 | 125 | 70 | h_{ef} | 65 | 160 | 85 | |
| Setting depth | h_{nom} | [mm] | $h_{ef}+10$ | 60 | 135 | 80 | $h_{ef}+14$ | 79 | 174 | 99 |
| Minimum component thickness | h_{min} | [mm] | max ($1.5 \cdot h_{ef}$; 100) | 100 | 187,5 | 105 | max ($1.5 \cdot h_{ef}$; 120) | 120 | 240 | 127,5 |
| Minimum axis distance | s_{min} | [mm] | 50 | | | | 65 | | | |
| Minimum edge spacing | c_{min} | [mm] | 55 | | | | 65 | | | |
| Nom. drill dia. | d_o | [mm] | 12 | | | | 16 | | | |
| Drill cutting dia. | $d_{cut} \leq$ | [mm] | 12,5 | | | | 16,5 | | | |
| Drill hole depth | h_o | [mm] | $h_{ef}+10$ | 60 | 135 | 80 | $h_{ef}+14$ | 79 | 174 | 99 |
| Through hole in attachment part | $d_f \leq$ | [mm] | 14 | | | | 18 | | | |
| Width across flats | AF | [mm] | 19 | | | | 24 | | | |
| Torque while installing anchor | $T_{inst} =$ | [mm] | 60 | | | | 110 | | | |
| Height of the hexagon nut | t_{nut} | [mm] | 10 | | | | 13 | | | |
| Height x dia. washer | $t_w \times d_w$ | [mm] | 2.5 x 24 | | | | 3 x 30 | | | |

1) For anchor groups and anchoring close to the edge, the combinations of the minimum values (component thickness, axis and edge distances) and the associated loads must be determined in accordance with the calculation methods of European Technical Assessment (ETA-20/00229), depending on the anchoring depth.

Details/Application

Single or multiple mounting with approval

- In standard concrete C20/25 to C50/60 (cracked and non-cracked concrete)
- Suitable for cotter-pin installation, push-through installation and distance mounting

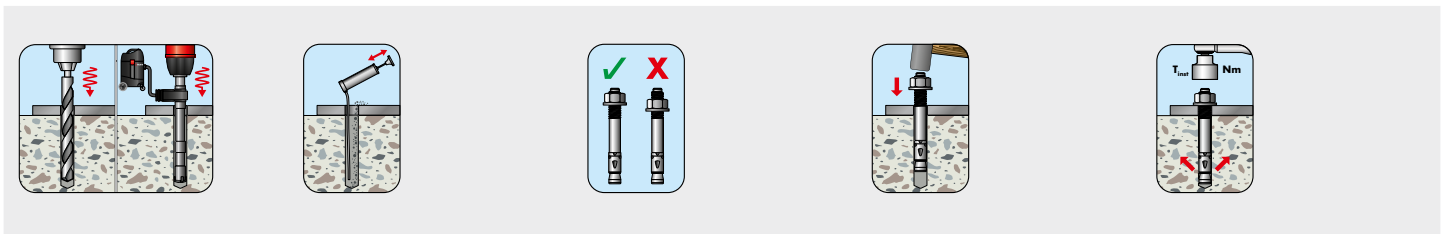
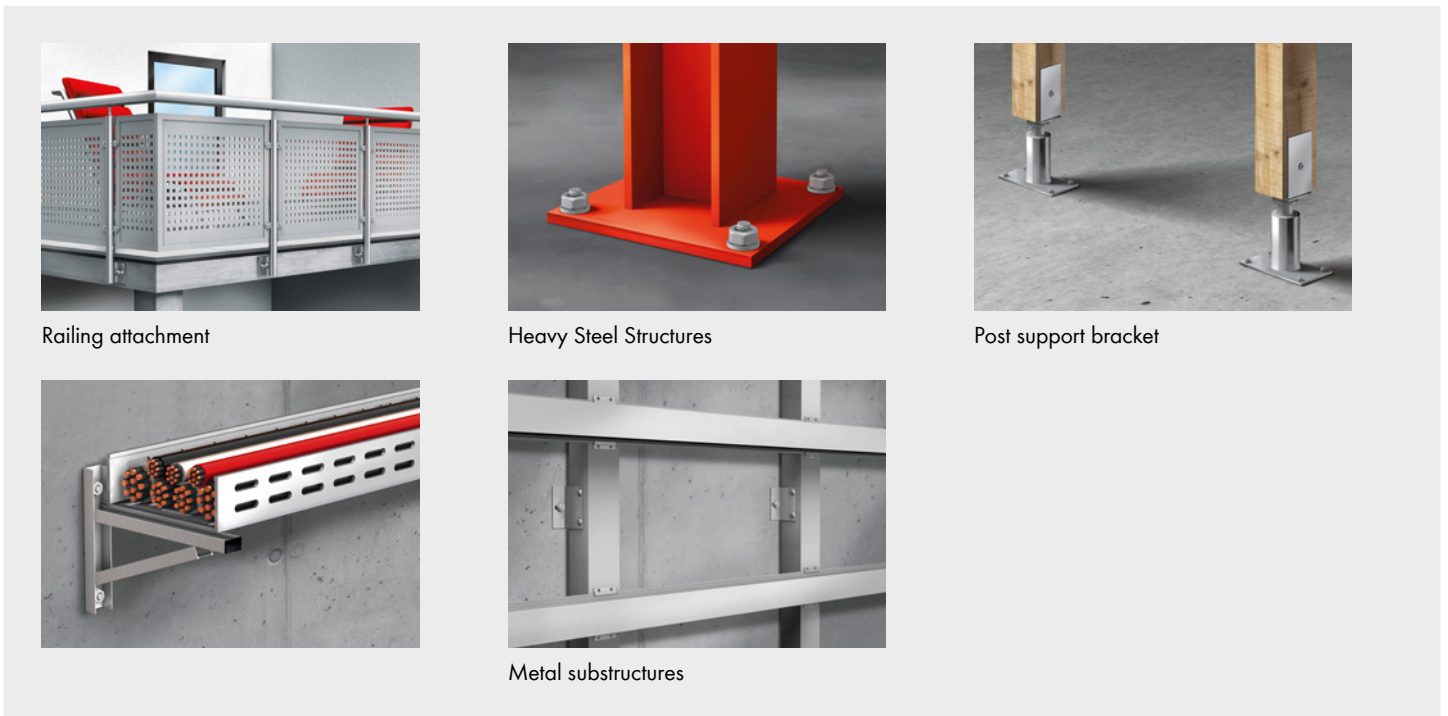
Suitable for anchoring medium to heavy loads in concrete:

Mounting of e.g. metal constructions, supports, steel supports, consoles, railings, cable conduits, pipe sections, wooden constructions, beams, joist brackets, etc.

Fastenings under seismic conditions in earthquake areas

Fastenings under exposure to fire

The W-FAZ PRO/S, galvanised steel, may only be used in dry indoor room conditions



Proof of performance

European Technical Approval ETA-20/0229 for individual attachment, option 1, cracked and non-cracked concrete:

- Static or quasi-static exposure (M8 - M16)
- Seismic exposure, performance category C1 and C2 (M8-M16)
- Fire load R30, R60, R90, R120

Load-bearing behaviour and fire load (uniform temperature curve) - expert opinion no. GS 6.1/20-018-1:

- Fire duration 180 minutes (M8-M16)

| Related products | Art. no. |
|---|--------------|
| 1/2 inch torque wrench | 0714 71 22 |
| Machine setting tool | 0904 908 016 |
| Hammer drill bit Plus Quadro-L Vario | 0648 051 221 |
| Extraction drill bit Plus D | 0648 451 232 |
| Cordless hammer drill ABH 18 COMPACT M-CUBE | 5701 403 004 |