

# Standard plug F

## Advantages

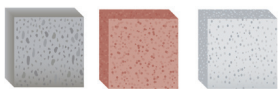


- High pull out loads due to high expansion ability (four-sided expansion in the middle section)
- Very good screw guidance, i.e. the screw cannot move out of the plug during the screwing in
- Good twist resistance
- Strong design prevents bending when hammered in
- Good load values even in many perforated bricks and aerated concrete



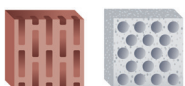
## Suitable building materials

### Very suitable



- Concrete
- Natural stone
- Solid brick
- Solid sand-lime brick
- Lightweight solid concrete blocks
- Aerated concrete
- Gypsum blocks

### Suitable to a limited extent

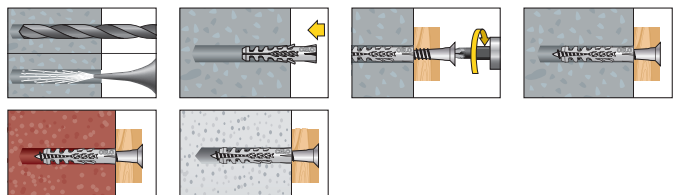


- Hollow brick
- Hollow sand-lime brick
- Lightweight hollow concrete blocks

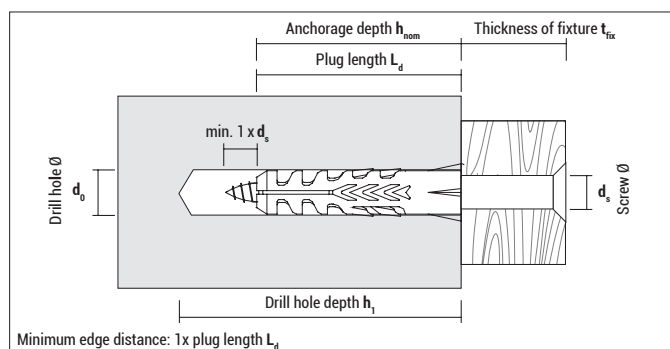
## Approvals and certificates



## Mounting



## Standard plug F



F without screw

| Type | Art-No | $d_0$<br>[mm] | $h_1 \geq$<br>[mm] | $h_{nom} \geq$<br>[mm] | $L_d$<br>[mm] | $d_s$<br>[mm] | €/ 100 pcs | [pcs] | [pcs]  |
|------|--------|---------------|--------------------|------------------------|---------------|---------------|------------|-------|--------|
| F 4  | 94NF   | 4             | 30                 | 20                     | 20            | 2 - 3         |            | 200   | 12.000 |
| F 5  | 95NF   | 5             | 35                 | 25                     | 25            | 2,5 - 4       |            | 100   | 6.000  |
| F 6  | 96NF   | 6             | 40                 | 30                     | 30            | 3,5 - 5       |            | 100   | 6.000  |
| F 7  | 97NF   | 7             | 40                 | 30                     | 30            | 4 - 5,5       |            | 50    | 3.000  |
| F 8  | 98NF   | 8             | 55                 | 40                     | 40            | 4,5 - 6       |            | 100   | 2.700  |
| F 10 | 910NF  | 10            | 70                 | 50                     | 50            | 6 - 8         |            | 50    | 1.350  |
| F 12 | 912NF  | 12            | 80                 | 60                     | 60            | 8 - 10        |            | 25    | 675    |
| F 14 | 914NF  | 14            | 90                 | 70                     | 70            | 10 - 12       |            | 20    | 540    |
| F 16 | 916NF  | 16            | 100                | 80                     | 80            | 12 - 14       |            | 10    | 270    |
| F 20 | 920NF  | 20            | 120                | 90                     | 90            | 16            |            | 5     | 135    |



Assortment box F with screw (210 pieces in total)

| Type | Art-No     | Box contains                                                                                                                                    | $d_0$<br>[mm] | $h_1 \geq$<br>[mm] | $L_d$<br>[mm]  | $d_s$<br>[mm]                    | €/ box | [box] | Min. sales unit<br>[pcs] |
|------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------|----------------------------------|--------|-------|--------------------------|
| F    | MIXNFSZ210 | 60 Standard plug F 5 incl. SPS 3,5x35 V, Pozi<br>30 Standard plug F 6 incl. SPS 4,5x45 V, Pozi<br>15 Standard plug F 8 incl. SPS 5,0x60 V, Pozi | 5<br>6<br>8   | 35<br>40<br>55     | 25<br>30<br>40 | 3,5 x 35<br>4,5 x 45<br>5,0 x 60 |        | 1     | 5                        |

Packed in robust plastic box



Assortment box MZK and F without screw (156 pieces in total)

| Type      | Art-No      | Box contains                                                                                                                                                      | $d_0$<br>[mm]               | $h_1 \geq$<br>[mm]               | $L_d$<br>[mm]                    | $d_s$<br>[mm]                                                              | €/ box | [box] | Min. sales unit<br>[pcs] |
|-----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------|----------------------------------|----------------------------------------------------------------------------|--------|-------|--------------------------|
| MZK and F | MIXNFMZK156 | 30 Multi-purpose plug MZK 6<br>15 Multi-purpose plug MZK 8<br>6 Multi-purpose plug MZK 10<br>60 Standard plug F 5<br>30 Standard plug F 6<br>15 Standard plug F 8 | 6<br>8<br>10<br>5<br>6<br>8 | 40<br>60<br>75<br>35<br>40<br>55 | 30<br>49<br>60<br>25<br>30<br>40 | 3,0 - 4,5<br>4,0 - 6,0<br>6,0 - 8,0<br>2,5 - 4,0<br>3,5 - 5,0<br>4,5 - 6,0 |        | 1     | 5                        |

Packed in robust plastic box

## Standard plug F



## Blister F without screw



| Type | Art-No  | d <sub>0</sub><br>[mm] | h <sub>1</sub> ≥<br>[mm] | h <sub>nom</sub> ≥<br>[mm] | L <sub>d</sub><br>[mm] | d <sub>s</sub><br>[mm] | €/Blister | [pcs] | [Blister] |
|------|---------|------------------------|--------------------------|----------------------------|------------------------|------------------------|-----------|-------|-----------|
| F 4  | 54NF20  | 4                      | 30                       | 20                         | 20                     | 2 - 3                  |           | 20    | 10        |
| F 4  | 54NF50  | 4                      | 30                       | 20                         | 20                     | 2 - 3                  |           | 50    | 10        |
| F 5  | 55NF20  | 5                      | 35                       | 25                         | 25                     | 2,5 - 4                |           | 20    | 10        |
| F 5  | 55NF50  | 5                      | 35                       | 25                         | 25                     | 2,5 - 4                |           | 50    | 10        |
| F 6  | 56NF20  | 6                      | 40                       | 30                         | 30                     | 3,5 - 5                |           | 20    | 10        |
| F 6  | 56NF50  | 6                      | 40                       | 30                         | 30                     | 3,5 - 5                |           | 50    | 10        |
| F 7  | 57NF20  | 7                      | 40                       | 30                         | 30                     | 4 - 5,5                |           | 20    | 10        |
| F 7  | 57NF50  | 7                      | 40                       | 30                         | 30                     | 4 - 5,5                |           | 50    | 10        |
| F 8  | 58NF20  | 8                      | 55                       | 40                         | 40                     | 4,5 - 6                |           | 20    | 10        |
| F 8  | 58NF40  | 8                      | 55                       | 40                         | 40                     | 4,5 - 6                |           | 40    | 10        |
| F 10 | 510NF5  | 10                     | 70                       | 50                         | 50                     | 6 - 8                  |           | 5     | 10        |
| F 10 | 510NF20 | 10                     | 70                       | 50                         | 50                     | 6 - 8                  |           | 20    | 10        |
| F 12 | 512NF5  | 12                     | 80                       | 60                         | 60                     | 8 - 10                 |           | 5     | 10        |
| F 12 | 512NF8  | 12                     | 80                       | 60                         | 60                     | 8 - 10                 |           | 8     | 10        |



## Blister F with screw



| Type     | Art-No   | d <sub>0</sub><br>[mm] | h <sub>1</sub> ≥<br>[mm] | h <sub>nom</sub> ≥<br>[mm] | L <sub>d</sub><br>[mm] | d <sub>s</sub> x L <sub>s</sub><br>[mm] | Type of screw | €/Blister | [pcs] | [Blister] |
|----------|----------|------------------------|--------------------------|----------------------------|------------------------|-----------------------------------------|---------------|-----------|-------|-----------|
| F 4 SPS  | 54NFSZ20 | 4                      | 30                       | 20                         | 20                     | 3,0 x 25                                |               |           | 20    | 10        |
| F 5 SPS  | 55NFSZ20 | 5                      | 35                       | 25                         | 25                     | 3,5 x 35                                |               |           | 20    | 10        |
| F 6 SPS  | 56NFSZ20 | 6                      | 40                       | 30                         | 30                     | 4,0 x 40                                |               |           | 20    | 10        |
| F 6 WH   | 56NFWH5  | 6                      | 40                       | 30                         | 30                     | 4,2 x 40                                |               |           | 5     | 10        |
| F 6 RH   | 56NFRH5  | 6                      | 40                       | 30                         | 30                     | 4,2 x 65                                |               |           | 5     | 10        |
| F 8 SKS  | 58NFK5   | 8                      | 55                       | 40                         | 40                     | 5,0 x 50                                |               |           | 5     | 10        |
| F 8 WH   | 58NFWH5  | 8                      | 55                       | 40                         | 40                     | 5,0 x 50                                |               |           | 5     | 10        |
| F 8 RH   | 58NFRH5  | 8                      | 55                       | 40                         | 40                     | 5,4 x 80                                |               |           | 5     | 10        |
| F 8 SPS  | 58NFSZ20 | 8                      | 55                       | 40                         | 40                     | 5,0 x 50                                |               |           | 20    | 10        |
| F 10 SKS | 510NFK5  | 10                     | 70                       | 50                         | 50                     | 7,0 x 65                                |               |           | 5     | 10        |
| F 12 SKS | 512NFK2  | 12                     | 80                       | 60                         | 60                     | 8,0 x 80                                |               |           | 2     | 10        |
| F 12 SKS | 512NFK5  | 12                     | 80                       | 60                         | 60                     | 8,0 x 80                                |               |           | 5     | 10        |
| F 14 SKS | 514NFK2  | 14                     | 90                       | 70                         | 70                     | 10,0 x 90                               |               |           | 2     | 10        |

Recommended loads F<sub>rec</sub> using wood screws with the largest applicable screw diameter and full anchorage depth

| Type | Screw Ø<br>d <sub>s</sub><br>[mm] | Concrete<br>F <sub>rec</sub> [kN] | Solid stone<br>Mz 12<br>F <sub>rec</sub> [kN] | Solid sand-lime<br>brick KS 12<br>F <sub>rec</sub> [kN] | Aerated concrete<br>AAC2<br>F <sub>rec</sub> [kN] | Aerated concrete<br>AAC4<br>F <sub>rec</sub> [kN] | Hollow brick<br>HLz 12<br>F <sub>rec</sub> [kN] |
|------|-----------------------------------|-----------------------------------|-----------------------------------------------|---------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------|
| F 4  | 3                                 | 0,12                              | 0,14                                          | 0,14                                                    | —                                                 | —                                                 | 0,08                                            |
| F 5  | 4                                 | 0,23                              | 0,24                                          | 0,33                                                    | 0,04                                              | 0,04                                              | 0,09                                            |
| F 6  | 5                                 | 0,31                              | 0,38                                          | 0,37                                                    | 0,05                                              | 0,06                                              | 0,12                                            |
| F 8  | 6                                 | 0,34                              | 0,46                                          | 0,43                                                    | 0,07                                              | 0,07                                              | 0,13                                            |
| F 10 | 8                                 | 0,77                              | 0,79                                          | 0,78                                                    | 0,10                                              | 0,10                                              | 0,22                                            |
| F 12 | 10                                | 1,55                              | 1,57                                          | 1,90                                                    | 0,15                                              | 0,16                                              | 0,30                                            |
| F 14 | 12                                | 2,71                              | —                                             | —                                                       | —                                                 | 0,28                                              | 0,43                                            |
| F 20 | 16                                | 5,50                              | —                                             | —                                                       | —                                                 | —                                                 | —                                               |

F<sub>rec</sub>: Recommended loads incl. safety factor of 7

Values must be reduced by ca. 40% when using chipboard screws (especially in solid building materials)