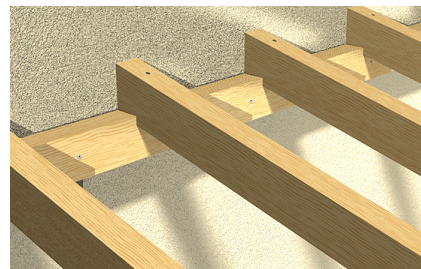


De gebruiksvriendelijke oplossing voor een groot aantal verschillende bouwmaterialen



UITVOERINGEN

- elektrolytisch verzinkt staal
- roestvast staal

BOUWMATERIALEN

Goedgekeurd voor:

- Beton C12/15
- Geperforeerde baksteen
- Geperforeerde kalkzandsteen
- Volle kalkzandsteen
- Volle baksteen van lichtbeton
- Volle baksteen

Tevens geschikt voor:

- Natuursteen met hoge dichtheid
- Gipsblokken
- Holle bouwsteen van licht beton
- Drielaags samengestelde buitenwandpanelen
- Lichtgewicht beton

GOEDKEURINGEN



VOORDELEN

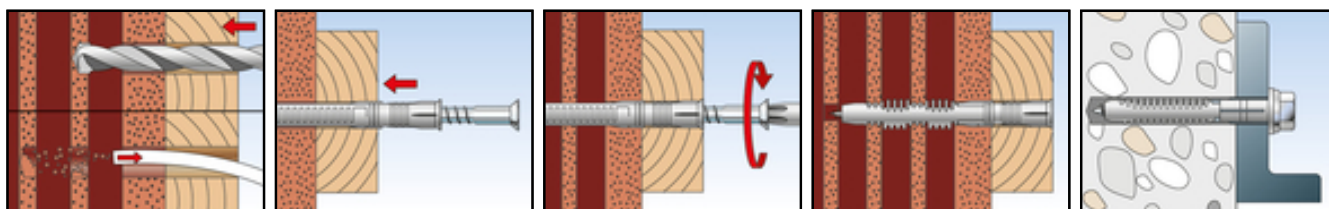
- Het universele werkingsprincipe met een verankeringsdiepte van 70 mm en unieke asymmetrische tanden maakt gebruik mogelijk in alle massieve en holle bouwmaterialen. Als zodanig is FUR de juiste keuze voor projecten waarvan het basismateriaal onbekend is; dit maakt altijd een stevige bevestiging mogelijk.
- De geavanceerde geometrie maakt een eenvoudige installatie mogelijk, zelfs bij dikke houten bevestigingen en smalle boorgaten.
- De FUR 14 voldoet aan de hoogste eisen wat betreft maximale gebruikslengten en afschuifbelastingen. Hierdoor is deze geschikt voor een groot aantal toepassingen.
- Europese Technische Goedkeuring voor metselwerk, gescheurd en ongescheurd beton.

TOEPASSINGEN

- Gevel- en dakconstructies van hout en metaal
- Ramen
- Rachelwerk
- Hekwerken en deuren
- Bekledingen
- Binnenbevestigingen

FUNCTIE

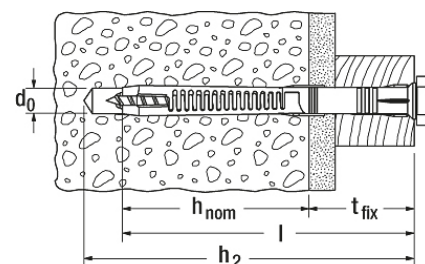
- De FUR is geschikt voor doorsteekmontage.
- Door de schroef naar binnen te draaien zetten de individuele tanden uit. In massieve materialen zorgen de tanden zelfs voor spreidrukkrachten. In holle materialen zetten de tanden uit via het massieve deel van het blok en vormen ze een ondersnijding in de holte.
- Gebruik bij verticaal geperforeerde stenen alleen roterende machines (geen slagboren).
- Er worden verzonken schroeven aanbevolen voor installatie van houtconstructies; gebruik bij metaalconstructies ankers met zeskantkopschroeven en gegoten onderleggingen.



TECHNISCHE GEGEVENS



Constructieplug FUR-SS



Elektrolytisch verzinkt

Artikelnaam	Art.-Nr.	Goed-keuring	Boorgatdiameter d_0 [mm]	Min. boorgatdiepte bij doorsteekmontage h_2 [mm]	Min. verankeringsdiepte $h_{nom} (h_v)$ [mm]	Pluglengte l [mm]
FUR 8 x 80 SS	070130		8	90	70	80
FUR 8 x 100 SS	070131		8	110	70	100
FUR 8 x 120 SS	070132		8	130	70	120
FUR 10 x 80 SS	088776	■	10	90	70	80
FUR 10 x 100 SS	088777	■	10	110	70	100
FUR 10 x 115 SS	088783	■	10	125	70	115
FUR 10 x 135 SS	088778	■	10	145	70	135
FUR 10 x 160 SS	088779	■	10	170	70	160
FUR 10 x 185 SS	088780	■	10	195	70	185
FUR 10 x 200 SS	088781	■	10	210	70	200
FUR 10 x 230 SS	088782	■	10	240	70	230

Roestvast staal A4, corrosieweerstandsklasse III

Artikelnaam	Art.-Nr.	Goed-keuring	Boorgatdiameter d_0 [mm]	Min. boorgatdiepte bij doorsteekmontage h_2 [mm]	Min. verankeringsdiepte $h_{nom} (h_v)$ [mm]	Pluglengte l [mm]
FUR 8 x 80 SS A4	070140		8	90	70	80
FUR 8 x 100 SS A4	070141		8	110	70	100
FUR 10 x 80 SS A4	088792	■	10	90	70	80
FUR 10 x 100 SS A4	088793	■	10	110	70	100
FUR 10 x 115 SS A4	088799	■	10	125	70	115
FUR 10 x 135 SS A4	088794	■	10	145	70	135
FUR 10 x 160 SS A4	088795	■	10	170	70	160
FUR 10 x 185 SS A4	088796	■	10	195	70	185
FUR 10 x 200 SS A4	088797	■	10	210	70	200
FUR 10 x 230 SS A4	088798	■	10	240	70	230

LOADS

Frame fixing FUR 8

Highest recommended loads¹⁾ for a single anchor for multiple fixings
The given loads are valid for safety screws with the specified diameter

Type			FUR 8
Safety screw	Ø	[mm]	6
Min. edge distance in concrete	a _r	[mm]	60
Recommended loads in the respective base material F_{rec}²⁾			
Concrete	≥ C20/25	[kN]	1,00
Solid brick	≥ Mz 12	[kN]	0,60
Solid sand-lime brick	≥ KS 12	[kN]	0,60

¹⁾ Required safety factors are considered.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

LOADS

Frame fixing FUR⁴⁾

Highest permissible loads^{1) 6)} for a single anchor for multiple fixings of non-structural applications in normal concrete $\geq$ C12/15 resp. $\geq$ B15. For the design the complete approval ETA-13/0235 has to be considered.

Type	min. anchorage depth h_{nom} [mm]	min. member thickness h_{min} [mm]	Cracked or Non-cracked concrete			
			permissible tensile load $N_{perm}^{3)}$ [kN]	permissible shear load $V_{perm}^{3)}$ [kN]	min. spacing $s_{min}^{2)}$ [mm]	min. edge distance $c_{min}^{2)}$ [mm]
FUR 10	70	110	1,8	1,8 ⁵⁾	50	50

¹⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions $\gamma_L = 1,4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq s_{cr,N}$ and an edge distance $c \geq c_{cr,N}$ according table 8 of the approval.

²⁾ Minimum possible axial spacings (anchor group) resp. edge distance for concrete $\geq$ C16/20 while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval. Values for concrete C12/15 see approval.

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

⁴⁾ Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

⁵⁾ The permissible shear load determined acc. ETAG 020, Annex C considers exclusively steel failure of the screw. It amounts $V_{perm} = 5,4$ kN for galvanised screws and $V_{perm} = 5,0$ kN for screw made of stainless steel. Due to that the expected displacements will disable the proper function of the fixture a maximum shear load on the basis of table 7 of the approval is recommended.

⁶⁾ Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C).

LOADS

Frame fixing FUR⁴⁾

Highest permissible loads^{1) 6)} for a single anchor for multiple fixings of non-structural applications in masonry. For the design the complete approval ETA-13/0235 has to be considered.

						Solid brick masonry and perforated brick masonry		
Type	Compressive brick strength f _b [N/mm ²]	Bulk density ρ [kg/dm ³]	Min. brick format (L x W x H) [mm]	Min. anchorage depth ⁸⁾ h _{nom} [mm]	Min. member thick- ness ⁹⁾ h _{min} [mm]	Permissible load F _{perm} ³⁾ [kN]	Min. spacing s _{min} ²⁾ [mm]	Min. edge distance c _{min} ²⁾ [mm]
Solid brick Mz acc. DIN 105-100 resp. DIN EN 771-1								
FUR 10	≥ 8	≥ 1,8	NF (240x113x71)	70	110 (113)	0,57	100	100
FUR 10	≥ 10					0,71	100	100
FUR 10	≥ 12					0,86	100	100
Calcium silicate solid brick KS acc. DIN V 106 resp. DIN EN 771-2								
FUR 10	≥ 8	≥ 1,8	NF (240x113x71)	70	110 (113)	0,43	100	100
FUR 10	≥ 10					0,57	100	100
FUR 10	≥ 20					0,71	100	100
FUR 10	≥ 8	≥ 1,8	500x175x235	70	110 (175)	0,71	100	100
FUR 10	≥ 10					0,86	100	100
FUR 10	≥ 12					1,00	100	100
Lightweight solid brick KLB V acc. DIN V 18152-100 resp. DIN EN 771-3								
FUR 10	≥ 6	≥ 1,6	250x240x245	70	110 (240)	0,57	100	100
FUR 10	≥ 8					0,86	100	100
Vertical perforated brick Hlz acc. DIN 105-100 resp. DIN EN 771-1								
FUR 10	≥ 10	≥ 1,4	Form B	70	110 (175)	0,29 ⁵⁾	100	100
FUR 10	≥ 12					0,37 ⁵⁾	100	100
FUR 10	≥ 16					0,49 ⁵⁾	100	100
FUR 10	≥ 20					0,57 ⁵⁾	100	100
Calcium silicate hollow brick KSL acc. DIN V 106 resp. DIN EN 771-2								
FUR 10	≥ 10	≥ 1,6	2 DF (240x115x113)	70	110 (115)	0,43	100	100
FUR 10	≥ 12					0,57	100	100
FUR 10	≥ 16					0,71	100	100

¹⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions $\gamma_F = 1,4$ are considered. As a single anchor counts e.g. an anchor with a minimum spacing s_{min} according table 10 of the approval.

²⁾ Minimum possible axial spacings (anchor group) while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible. One of them has to be increased according approval.

³⁾ Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see approval. If the joints are not visible the permissible load has to be halved.

⁴⁾ Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according approval have to be taken.

⁵⁾ Erection of the drill hole by rotary drilling (without impact).

⁶⁾ Valid for temperatures in the substrate up to +50 °C (resp. short term up to 80 °C).

⁸⁾ If the embedment depth h_{nom} is higher than 70 mm (only for hollow and perforated masonry) site tests have to be carried out acc. approval.

⁹⁾ Values in brackets derived from minimum brick format.