

Multifunction frame plug MFR



Advantages



SB TX, zinc plated / A4 / HD



SB SSKS, zinc plated / A4 / HD



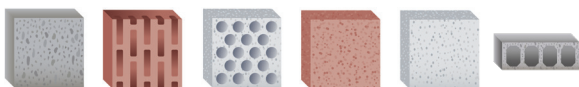
FB SSKS, zinc plated / A4



- The multifunction frame plug MFR enables universal mounting of façade substructures as well as wood and metal parts in all common base materials
- The long expansion area and early expansion achieved by lateral bars ensure reliable and secure hold
- Approved by company Hörmann for fire protection doors in solid base materials
- MFR 8: setting depth 50 mm; MFR 10: setting depth 50 mm and 70 mm; MFR 14: setting depth 70 mm
- The flat rim version prevents contact corrosion
- Almost all lengths are pre-assembled
- Also suitable for precast pre-stressed concrete hollow core slabs
- Suitable for windows and door frames installations

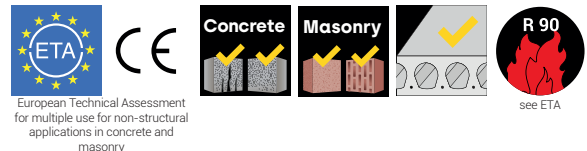
Suitable building materials

Very suitable

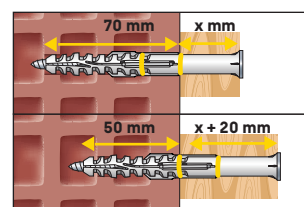
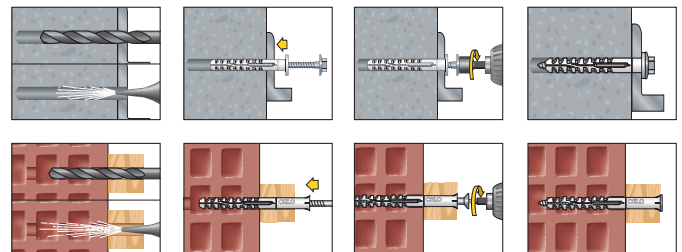


- Concrete
- Solid brick
- Solid sand-lime brick
- Precast pre-stressed hollow core slabs
- Aerated concrete
- Hollow brick
- Hollow sand-lime brick
- Lightweight hollow concrete blocks
- Natural stone
- Lightweight solid concrete blocks

Approvals and certificates

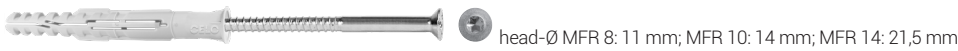
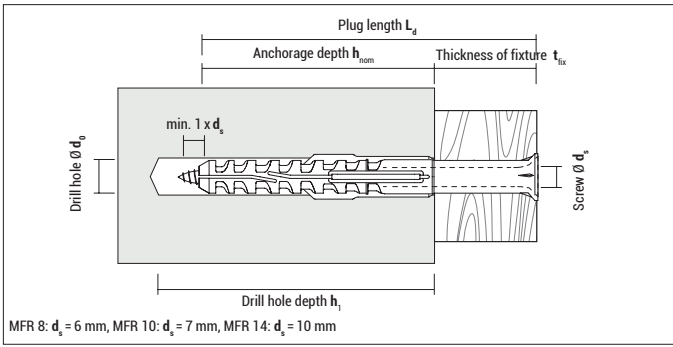


Mounting



MFR 10:
Two setting depths
[50 and 70 mm]

Multifunction frame plug MFR



MFR SB TX, zinc plated countersunk plug with countersunk screw

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	ETA	€/100 pcs	[pcs]	[pcs]
8x60	9860MFRST	8	60	50	60	10	TX 30	●		100	800
8x80	9880MFRST	8	60	50	80	30	TX 30	●		100	800
8x100	98100MFRST	8	60	50	100	50	TX 30	●		50	400
8x120	98120MFRST	8	60	50	120	70	TX 30	●		50	400
8x140	98140MFRST	8	60	50	140	90	TX 30	●		50	400
10x60	91060MFRST	10	60	50	60	10	TX 40	●		50	400
10x80	91080MFRST	10	60/80	50/70	80	30/10	TX 40	●		50	400
10x100	910100MFRST	10	60/80	50/70	100	50/30	TX 40	●		50	400
10x115	910115MFRST	10	60/80	50/70	115	65/45	TX 40	●		50	400
10x135	910135MFRST	10	60/80	50/70	135	85/65	TX 40	●		50	400
10x160	910160MFRST	10	60/80	50/70	160	110/90	TX 40	●		50	400
10x180	910180MFRST	10	60/80	50/70	180	130/110	TX 40	●		50	200
10x200	910200MFRST50	10	60/80	50/70	200	150/130	TX 40	●		50	200
10x240	910240MFRST50	10	60/80	50/70	240	190/170	TX 40	●		50	200
10x280	910280MFRST50	10	60/80	50/70	280	230/210	TX 40	●		50	-
10x320	910320MFRST50	10	60/80	50/70	320	270/250	TX 40	●		50	-
14x80	91480MFRST	14	85	70	80	10	TX 50	●		25	200
14x110	914110MFRST	14	85	70	110	40	TX 50	●		25	200
14x140	914140MFRST	14	85	70	140	70	TX 50	●		25	200
14x170*	914170MFRST	14	85	70	170	100	TX 50	●		25	200
14x200*	914200MFRST	14	85	70	200	130	TX 50	●		25	100
14x230*	914230MFRST	14	85	70	230	160	TX 50	●		25	100
14x270*	914270MFRST	14	85	70	270	200	TX 50	●		25	100

* not pre-assembled



MFR SB TX, stainless steel A4 countersunk plug with countersunk screw



Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	ETA	€/100 pcs	[pcs]	[pcs]
8x60 A4	9X860MFRST	8	60	50	60	10	TX30	●		100	800
8x80 A4	9X880MFRST	8	60	50	80	30	TX 30	●		100	800
8x100 A4	9X8100MFRST	8	60	50	100	50	TX 30	●		50	400
10x60 A4	9X1060MFRST	10	60	50	60	10	TX40	●		50	400
10x80 A4	9X1080MFRST	10	60/80	50/70	80	30/10	TX 40	●		50	400
10x100 A4	9X10100MFRST	10	60/80	50/70	100	50/30	TX 40	●		50	400
10x115 A4	9X10115MFRST	10	60/80	50/70	115	65/45	TX 40	●		50	400
10x135 A4	9X10135MFRST	10	60/80	50/70	135	85/65	TX 40	●		50	400
10x160 A4	9X10160MFRST	10	60/80	50/70	160	110/90	TX 40	●		50	400
10x180 A4	9X10180MFRST	10	60/80	50/70	180	130/110	TX 40	●		50	200
10x200 A4	9X10200MFRST	10	60/80	50/70	200	150/130	TX 40	●		50	200



head-Ø MFR 10: 14 mm

MFR SB TX, hot-dip galvanized countersunk plug with countersunk screw

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	€ / 100 pcs	[pcs]	[pcs]
10x100 HD	9HD10100MFRST	10	60 / 80	50 / 70	100	50 / 30	TX 40		50	400
10x135 HD	9HD10135MFRST	10	60 / 80	50 / 70	135	85 / 65	TX 40		50	400
10x160 HD	9HD10160MFRST	10	60 / 80	50 / 70	160	110 / 90	TX 40		50	400

Hot-dip galvanized is not part of the ETA assessment



washer-Ø MFR 8: 17 mm; MFR 10: 19 mm; MFR 14: 22 mm

MFR SB SSKS, zinc plated countersunk plug, hex-head screw with integral washer

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess		€ / 100 pcs	[pcs]	[pcs]
8x60	9860MFRSB	8	60	50	60	10	SW10/TX 30	●		100	800
8x80	9880MFRSB	8	60	50	80	30	SW10/TX 30	●		100	800
8x100	98100MFRSB	8	60	50	100	50	SW10/TX 30	●		50	400
8x120	98120MFRSB	8	60	50	120	70	SW10/TX 30	●		50	400
8x140	98140MFRSB	8	60	50	140	90	SW10/TX 30	●		50	400
10x60	91060MFRSB	10	60	50	60	10	SW13/TX 40	●		50	400
10x80	91080MFRSB	10	60 / 80	50 / 70	80	30 / 10	SW13/TX 40	●		50	400
10x100	910100MFRSB	10	60 / 80	50 / 70	100	50 / 30	SW13/TX 40	●		50	400
10x115	910115MFRSB	10	60 / 80	50 / 70	115	65 / 45	SW13/TX 40	●		50	400
10x135	910135MFRSB	10	60 / 80	50 / 70	135	85 / 65	SW13/TX 40	●		50	400
10x160	910160MFRSB	10	60 / 80	50 / 70	160	110 / 90	SW13/TX 40	●		50	400
10x180	910180MFRSB	10	60 / 80	50 / 70	180	130 / 110	SW13/TX 40	●		50	200
10x200	910200MFRSB50	10	60 / 80	50 / 70	200	150 / 130	SW13/TX 40	●		50	200
10x240	910240MFRSB50	10	60 / 80	50 / 70	240	190 / 170	SW13/TX 40	●		50	200
10x280	910280MFRSB50	10	60 / 80	50 / 70	280	230 / 210	SW13/TX 40	●		50	-
10x320	910320MFRSB50	10	60 / 80	50 / 70	320	270 / 250	SW13/TX 40	●		50	-
14x80	91480MFRSB	14	85	70	80	10	SW17/TX 50	●		25	200
14x110	914110MFRSB	14	85	70	110	40	SW17/TX 50	●		25	200
14x140	914140MFRSB	14	85	70	140	70	SW17/TX 50	●		25	200
14x170*	914170MFRSB	14	85	70	170	100	SW17/TX 50	●		25	200
14x200*	914200MFRSB	14	85	70	200	130	SW17/TX 50	●		25	100
14x230*	914230MFRSB	14	85	70	230	160	SW17/TX 50	●		25	100
14x270*	914270MFRSB	14	85	70	270	200	SW17/TX 50	●		25	100

* not pre-assembled



washer-Ø MFR 8: 17mm; MFR 10: 19 mm



MFR SB SSKS, stainless steel A4 countersunk plug, hex-head screw with integral washer

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess		€ / 100 pcs	[pcs]	[pcs]
8x60 A4	9X860MFRSB	8	60	50	60	10	SW10/TX 30	●		100	800
8x80 A4	9X880MFRSB	8	60	50	80	30	SW10/TX 30	●		100	800
8x100 A4	9X8100MFRSB	8	60	50	100	50	SW10/TX 30	●		50	400
10x60 A4	9X1060MFRSB	10	60	50	60	10	SW13/TX 40	●		50	400
10x80 A4	9X1080MFRSB	10	60 / 80	50 / 70	80	30 / 10	SW13/TX 40	●		50	400
10x100 A4	9X10100MFRSB	10	60 / 80	50 / 70	100	50 / 30	SW13/TX 40	●		50	400
10x115 A4	9X10115MFRSB	10	60 / 80	50 / 70	115	65 / 45	SW13/TX 40	●		50	400
10x135 A4	9X10135MFRSB	10	60 / 80	50 / 70	135	85 / 65	SW13/TX 40	●		50	400
10x160 A4	9X10160MFRSB	10	60 / 80	50 / 70	160	110 / 90	SW13/TX 40	●		50	400
10x180 A4	9X10180MFRSB	10	60 / 80	50 / 70	180	130 / 110	SW13/TX 40	●		50	200
10x200 A4	9X10200MFRSB	10	60 / 80	50 / 70	200	150 / 130	SW13/TX 40	●		50	200



washer-Ø MFR 10: 19 mm

MFR SB SSKS, hot-dip galvanized countersunk plug, hex-head screw with integral washer

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	€ / 100 pcs	[pcs]	[pcs]
10x100 HD	9HD10100MFRSB	10	60 / 80	50 / 70	100	50 / 30	SW13/TX 40		50	400
10x135 HD	9HD10135MFRSB	10	60 / 80	50 / 70	135	85 / 65	SW13/TX 40		50	400
10x160 HD	9HD10160MFRSB	10	60 / 80	50 / 70	160	110 / 90	SW13/TX 40		50	400

Hot-dip galvanized is not part of the ETA assessment

Multifunction frame plug MFR



washer-Ø MFR 8: 17 mm; MFR 10: 19 mm; MFR 14: 22 mm

MFR FB SSKS, zinc plated flat rim plug, hex-head screw with integral washer

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	ETA	€/100 pcs	[pcs]	[pcs]
8x60	9860MFRFB	8	60	50	60	10	SW10/TX 30	●		100	800
8x80	9880MFRFB	8	60	50	80	30	SW10/TX 30	●		100	800
10x60	91060MFRFB	10	60	50	60	10	SW13/TX 40	●		50	400
10x80	91080MFRFB	10	60/80	50/70	80	30/10	SW13/TX 40	●		50	400
10x100	910100MFRFB	10	60/80	50/70	100	50/30	SW13/TX 40	●		50	400
10x115	910115MFRFB	10	60/80	50/70	115	65/45	SW13/TX 40	●		50	400
10x135	910135MFRFB	10	60/80	50/70	135	85/65	SW13/TX 40	●		50	400
14x80	91480MFRFB	14	85	70	80	10	SW17/TX 50	●		25	200
14x110	914110MFRFB	14	85	70	110	40	SW17/TX 50	●		25	200
14x140	914140MFRFB	14	85	70	140	70	SW17/TX 50	●		25	200



washer-Ø MFR 8: 17 mm; MFR 10: 19 mm

MFR FB SSKS, stainless steel A4 flat rim plug, hex-head screw with integral washer



Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	ETA	€/100 pcs	[pcs]	[pcs]
8x60 A4	9X860MFRFB	8	60	50	60	10	SW10/TX 30	●		100	800
8x80 A4	9X880MFRFB	8	60	50	80	30	SW10/TX 30	●		100	800
10x60 A4	9X1060MFRFB	10	60	50	60	10	SW13/TX 40	●		50	400
10x80 A4	9X1080MFRFB	10	60/80	50/70	80	30/10	SW13/TX 40	●		50	400
10x100 A4	9X10100MFRFB	10	60/80	50/70	100	50/30	SW13/TX 40	●		50	400
10x115 A4	9X10115MFRFB	10	60/80	50/70	115	65/45	SW13/TX 40	●		50	400
10x135 A4	9X10135MFRFB	10	60/80	50/70	135	85/65	SW13/TX 40	●		50	400



head-Ø MFR 8: 11 mm; MFR 10: 14 mm

Blister MFR SB TX, zinc plated Countersunk plug with countersunk screw



Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	Type of screw	ETA	€/Blister	[pcs]	[Blister]
8x60	5860MFRST4	8	60	50	60	10	TX 30		●		4	10
8x80	5880MFRST4	8	60	50	80	30	TX 30		●		4	10
10x60	51060MFRST4	10	60	50	60	10	TX 40		●		4	10
10x80	51080MFRST4	10	60/80	50/70	80	30/10	TX 40		●		4	10
10x100	510100MFRST4	10	60/80	50/70	100	50/30	TX 40		●		4	10
10x115	510115MFRST4	10	60/80	50/70	115	65/45	TX 40		●		4	10
10x135	510135MFRST4	10	60/80	50/70	135	85/65	TX 40		●		4	10
10x160	510160MFRST4	10	60/80	50/70	160	110/90	TX 40		●		4	10



washer-Ø MFR 8: 17 mm; MFR 10: 19 mm

Blister MFR SB SSKS, zinc plated Countersunk plug, hex-head screw with integral washer



Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	Type of screw	ETA	€/Blister	[pcs]	[Blister]
8x60	5860MFRSB4	8	60	50	60	10	SW10/TX 30		●		4	10
10x80	51080MFRSB4	10	60/80	50/70	80	30/10	SW13/TX 40		●		4	10
10x100	510100MFRSB4	10	60/80	50/70	100	50/30	SW13/TX 40		●		4	10
10x115	510115MFRSB4	10	60/80	50/70	115	65/45	SW13/TX 40		●		4	10
10x135	510135MFRSB4	10	60/80	50/70	135	85/65	SW13/TX 40		●		4	10
10x160	510160MFRSB4	10	60/80	50/70	160	110/90	SW13/TX 40		●		4	10

Multifunction frame plug MFR



washer-Ø MFR 8: 17 mm; MFR 10: 19 mm



Blister MFR FB SSKS, zinc plated flat rim plug, hex-head screw with integral washer

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{nom} ≥ [mm]	L _d [mm]	t _{fix} ≤ [mm]	Recess	Type of screw	ETA	€/ Blister	[pcs]	[Blister]
8x80	5880MFRFB4	8	60	50	80	30	SW10/TX 30				4	10
10x60	51060MFRFB4	10	60	50	60	10	SW13/TX 40				4	10

Loads MFR F_{per}

Type	Anchorage depth h _{nom} [mm]	Concrete		Solid brick		Solid sand-lime brick		Hollow brick HLz 12 F _{per} [kN]	Hollow sand-lime brick KSL 12 F _{per} [kN]	Hollow concrete block Hbn 15 F _{per} [kN]	Aerated concrete			Precast pre-stressed hollow core slabs C45/55 N _{per} [kN]	Permissible bending moment for zinc plated screws M _{per} [Nm]
		N _{per} [kN]	V _{per} [kN]	Mz 10 F _{per} [kN]	Mz 20 F _{per} [kN]	KS 10 F _{per} [kN]	KS 20 F _{per} [kN]				AAC2 F _{per} [kN]	AAC4 F _{per} [kN]	AAC6 F _{per} [kN]		
MFR 8	50	0,99	4,61	0,26	0,43	0,57	0,86	0,14	0,21	0,34	0,11	0,43	0,71	1,39	8,05
MFR 10	50	0,99	4,86	0,57	0,86	0,71	1,14	0,34	0,43	0,71	–	–	–	0,79	8,74
MFR 10	70	1,59	6,32	0,86	1,14	0,86	1,14	0,43	0,43	0,57	0,18	0,54	0,89	0,48	12,98
MFR 14	70	1,79	8,69	0,86	1,29	0,86	1,29	0,21	0,34	–	0,11	0,43	0,71	–	20,97

F_{per} = Permissible load in all directions, N_{per} = permissible tension load, V_{per} = permissible shear load according to ETA assessment for zinc plated screws. Load figures include the resistances' partial safety factors as per ETA assessments and a partial safety factor on the action of v_f = 1,4.

(For MFR with hot-dip galvanized screw: These values can be used as recommended loads).

Values apply to an average temperature range in the wall of max. + 24° C (temporarily + 40° C).

If the sustained average temperature is +50° C (temporarily +80° C) load capacities are reduced. In this case, refer to the assessment.

For further information regarding masonry (brick types and sizes) please refer to the assessment.

Spacing and edge distance

Type	Anchorage depth h _{nom} [mm]	Distances	Concrete ≥ C16/20 [mm]	Solid brick Mz/ Solid brick KS		Hollow brick HLz/ Hollow sand-lime brick KSL		Aerated concrete					
				single plug [mm]	group of plugs [mm]	single plug [mm]	group of plugs [mm]	AAC2		AAC4		AAC6	
								single plug [mm]	group of plugs [mm]	single plug [mm]	group of plugs [mm]	single plug [mm]	group of plugs [mm]
MFR 8	50	Spacing a / s _{z,min} parallel to edge	50	250	400	250	400	250	400	250	400	250	400
MFR 10	50		50	250	400	250	200	–	–	–	–	–	–
MFR 10	70		50	250	400	250	400	250	200	250	300	250	400
MFR 14	70		100	250	400	250	480*/400	250	200	250	300	250	400
MFR 8	50	Spacing a / s _{l,min} perpendicular to edge	50	250	200	250	200	250	200	250	200	250	200
MFR 10	50		50	250	200	250	200	–	–	–	–	–	–
MFR 10	70		50	250	200	250	200	250	100	250	150	250	200
MFR 14	70		100	250	200	250	240*/200	250	100	250	150	250	200
MFR 8	50	Min. edge distance C _{min}	60	100	100	100	100	50	–	90	–	150	–
MFR 10	50		50	100	100	100	100	–	–	–	–	–	–
MFR 10	70		60	100	100	100	100	50	50	75	75	100	100
MFR 14	70		100	100	100	120*/100	120*/100	50	50	75	75	100	100
MFR 8	50	Min. thickness of structural part h _{min}	100					240	240	240	240	240	240
MFR 10	50		100	depending on brick format	depending on brick format	–	–	–	–	–	–	–	–
MFR 10	70		110			100	100	100	100	100	100	100	100
MFR 14	70		120			100	100	100	100	100	100	100	100

* Value applies to HLz 12