

Technical data sheet



FM-X5 Long Plug for Window and Door Frames

The FM-X5 frame plug in Ø8 and Ø10 mm versions in combination with a countersunk or hexagon head screw is approved for multiple fixings in concrete and masonry.

Features

Material

- Plug: nylon
- Screw: white zinc plated steel

Benefits

- Multi-expansion variable geometry
- Low tightening torque
- Ultra flexible nylon

Applications

Applications

- Framework
- Wall cabinets
- Light carpentry

Suitable for

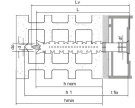
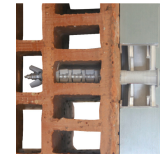
- Non-cracked concrete
- Solid brick
- Honeycomb brick
- Cell like clay brick
- Lightweight honeycomb brick
- Hollow dense aggregate block
- Hollow light aggregate block
- Aerated concrete
- Solid stone



FM-X5
Long Plug for Window and Door Frames

Technical Data

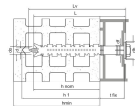
Product Dimensions Countersunk Screw



References	Product Reference	Hole diameter x anchor length [d _o xL] [mm]	Max. fixture thickness [t _{fix}] [mm]	Min. hole depth [h ₁] [mm]	Nominal embedment depth [h _{nom}] [mm]	Min. support thickness* [h _{min}] [mm]	Hole diameter in fixture [d _f] [mm]	Screw diameter [d] [mm]	Screw length [L _v] [mm]	Bit	Qty per box	Qty per outer box
64301B0808000	FM-X5	Ø8x80	10	80	70	120	8.5	6	85	T30	100	1000
64301B0810000		Ø8x100	30	80	70	120	8.5	6	105	T30	50	500
64301B0812000		Ø8x120	50	80	70	120	8.5	6	125	T30	50	500
64301B0815000		Ø8x150	80	80	70	120	8.5	6	155	T30	50	-
64301B0817000		Ø8x170	100	80	70	120	8.5	6	175	T30	50	-
64301B1008500		Ø10x85	15	80	70	120	10.5	7	90	T40	50	500
64301B1010000		Ø10x100	30	80	70	120	10.5	7	105	T40	50	500
64301B1011500		Ø10x115	45	80	70	120	10.5	7	120	T40	50	500
64301B1013500		Ø10x135	65	80	70	120	10.5	7	140	T40	50	200
64301B1016000		Ø10x160	90	80	70	120	10.5	7	165	T40	50	200
64301B1020000		Ø10x200	130	80	70	120	10.5	7	205	T40	50	-
64301B1023000		Ø10x230	160	80	70	120	10.5	7	235	T40	50	-

* Including plaster

Product Dimensions Hex Head Screw



References	Product Reference	Hole diameter x anchor length [d _o xL] [mm]	Max. fixture thickness [t _{fix}] [mm]	Min. hole depth [h ₁] [mm]	Nominal embedment depth [h _{nom}] [mm]	Min. support thickness* [h _{min}] [mm]	Hole diameter in fixture [d _f] [mm]	Washer diameter [d _w] [mm]	Screw diameter [d] [mm]	Screw length [L _v] [mm]	Wrench [SW] [mm]
64302B0808000	FM-X5	Ø8x80	10	80	70	120	8.5	15	6	85	10
64302B0810000		Ø8x100	30	80	70	120	8.5	15	6	105	10
64302B0812000		Ø8x120	50	80	70	120	8.5	15	6	125	10
64302B0815000		Ø8x150	80	80	70	120	8.5	15	6	155	10
64302B1008500		Ø10x85	15	80	70	120	10.5	19	7	90	13
64302B1010000		Ø10x100	30	80	70	120	10.5	19	7	105	13
64302B1011500		Ø10x115	45	80	70	120	10.5	19	7	120	13
64302B1013500		Ø10x135	65	80	70	120	10.5	19	7	140	13
64302B1016000		Ø10x160	90	80	70	120	10.5	19	7	165	13

* Including plaster

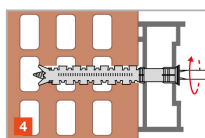
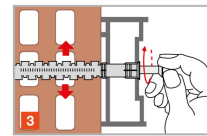
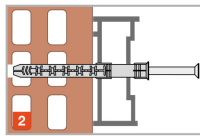
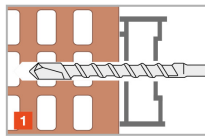
FM-X5 Long Plug for Window and Door Frames

Design capacities - single anchor - no edge distances

References	Design capacities - single anchor - no edge distances										
	Product Reference	Hole diameter x anchor length [d _o xL] [mm]	Design capacity								Bending moment M _{Rd} [Nm]
			Tension - NRd				Shear - VRd				
			Non-cracked concrete C12/15 [kN]	Non-cracked concrete C16/20 [kN]	Autoclaved aerated concrete AAC [kN]	Solid brick [kN]	Non-cracked concrete C12/15 [kN]	Non-cracked concrete C16/20 [kN]	Autoclaved aerated concrete AAC [kN]	Solid brick [kN]	
64301B0808000	FM-X5	Ø8x80	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64301B0810000	FM-X5	Ø8x100	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64301B0812000	FM-X5	Ø8x120	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64301B0815000	FM-X5	Ø8x150	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64301B0817000	FM-X5	Ø8x170	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64301B1008500	FM-X5	Ø10x85	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1010000	FM-X5	Ø10x100	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1011500	FM-X5	Ø10x115	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1013500	FM-X5	Ø10x135	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1016000	FM-X5	Ø10x160	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1020000	FM-X5	Ø10x200	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64301B1023000	FM-X5	Ø10x230	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64302B0808000	FM-X5	Ø8x80	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64302B0810000	FM-X5	Ø8x100	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64302B0812000	FM-X5	Ø8x120	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64302B0815000	FM-X5	Ø8x150	0.8	1.4	0.3	1.4	0.8	1.4	0.3	1.4	7
64302B1008500	FM-X5	Ø10x85	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64302B1010000	FM-X5	Ø10x100	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64302B1011500	FM-X5	Ø10x115	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64302B1013500	FM-X5	Ø10x135	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47
64302B1016000	FM-X5	Ø10x160	1.4	1.9	0.3	1.4	1.4	1.9	0.3	1.4	13.47

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Installation



Spacings and edge distances

References	Product Reference	Hole diameter x anchor length [d _o xL] [mm]	Spacings and edge distances									
			Non-cracked concrete C12/15				Non-cracked concrete C16/20				Autoclaved aerated c AAC	
			Min. edge distance [c _{min}] [mm]	Min. spacing [s _{min}] [mm]	Characteristic edge distance [c _{cr,N}] [mm]	Minimum thickness of support [h _{min}] [mm]	Min. edge distance [c _{min}] [mm]	Min. spacing [s _{min}] [mm]	Characteristic edge distance [c _{cr,N}] [mm]	Minimum thickness of support [h _{min}] [mm]	Min. edge distance [c _{min}] [mm]	Min. spacing [s _{min}] [mm]
64301B0808000	FM-X5	Ø8x80	80	80	140	100	60	60	100	100	100	250
64301B0810000	FM-X5	Ø8x100	80	80	140	100	60	60	100	100	100	250
64301B0812000	FM-X5	Ø8x120	80	80	140	100	60	60	100	100	100	250
64301B0815000	FM-X5	Ø8x150	80	80	140	100	60	60	100	100	100	250
64301B0817000	FM-X5	Ø8x170	80	80	140	100	60	60	100	100	100	250
64301B1008500	FM-X5	Ø10x85	80	80	140	100	60	60	100	100	100	250
64301B1010000	FM-X5	Ø10x100	80	80	140	100	60	60	100	100	100	250
64301B1011500	FM-X5	Ø10x115	80	80	140	100	60	60	100	100	100	250
64301B1013500	FM-X5	Ø10x135	80	80	140	100	60	60	100	100	100	250
64301B1016000	FM-X5	Ø10x160	80	80	140	100	60	60	100	100	100	250
64301B1020000	FM-X5	Ø10x200	80	80	140	100	60	60	100	100	100	250
64301B1023000	FM-X5	Ø10x230	80	80	140	100	60	60	100	100	100	250
64302B0808000	FM-X5	Ø8x80	80	80	140	100	60	60	100	100	100	250
64302B0810000	FM-X5	Ø8x100	80	80	140	100	60	60	100	100	100	250
64302B0812000	FM-X5	Ø8x120	80	80	140	100	60	60	100	100	100	250
64302B0815000	FM-X5	Ø8x150	80	80	140	100	60	60	100	100	100	250
64302B1008500	FM-X5	Ø10x85	80	80	140	100	60	60	100	100	100	250
64302B1010000	FM-X5	Ø10x100	80	80	140	100	60	60	100	100	100	250
64302B1011500	FM-X5	Ø10x115	80	80	140	100	60	60	100	100	100	250
64302B1013500	FM-X5	Ø10x135	80	80	140	100	60	60	100	100	100	250
64302B1016000	FM-X5	Ø10x160	80	80	140	100	60	60	100	100	100	250

FM-X5 Long Plug for Window and Door Frames

Installation data

References	Product Reference	Hole diameter x anchor length [d _o xL] [mm]	Installation data			
			Ø drilling hole [d0] [mm]	Min. drill depth [h1] [mm]	Ø drilling fixture [df] [mm]	Wrench size [SW] [mm]
64301B0808000	FM-X5	Ø8x80	8	80	8.5	-
64301B0810000	FM-X5	Ø8x100	8	80	8.5	-
64301B0812000	FM-X5	Ø8x120	8	80	8.5	-
64301B0815000	FM-X5	Ø8x150	8	80	8.5	-
64301B0817000	FM-X5	Ø8x170	8	80	8.5	-
64301B1008500	FM-X5	Ø10x85	10	80	10.5	-
64301B1010000	FM-X5	Ø10x100	10	80	10.5	-
64301B1011500	FM-X5	Ø10x115	10	80	10.5	-
64301B1013500	FM-X5	Ø10x135	10	80	10.5	-
64301B1016000	FM-X5	Ø10x160	10	80	10.5	-
64301B1020000	FM-X5	Ø10x200	10	80	10.5	-
64301B1023000	FM-X5	Ø10x230	10	80	8.5	-
64302B0808000	FM-X5	Ø8x80	8	80	8.5	10
64302B0810000	FM-X5	Ø8x100	8	80	8.5	10
64302B0812000	FM-X5	Ø8x120	8	80	8.5	10
64302B0815000	FM-X5	Ø8x150	8	80	8.5	10
64302B1008500	FM-X5	Ø10x85	10	80	10.5	13
64302B1010000	FM-X5	Ø10x100	10	80	10.5	13
64302B1011500	FM-X5	Ø10x115	10	80	10.5	13
64302B1013500	FM-X5	Ø10x135	10	80	10.5	13
64302B1016000	FM-X5	Ø10x160	10	80	10.5	13

