

X1 EVO & X1 EVO-L



ICCONS
Serious Connections

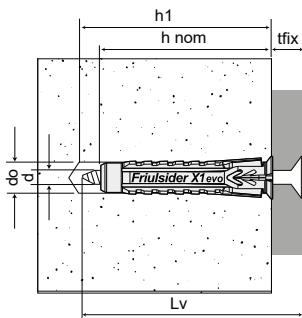
Autoclaved Aerated Concrete (AAC)

TDS | 1039.1

FRULSIDER
YOUR FIXING FACTORY

X1EVO

X1EVO-L



Material Properties

Plug	Nylon Pa6
CSK Head / Pan Head chipboard screws	Zinc Clear, Class 5.6
Hex wood screw	Zinc Clear, Class 5.6

Installation Temp.	+5 to +40 °C
Working Temp.	+5 to +40 °C (max 80 for short period)

d	= Screw diameter
d _o	= Hole diameter
h ₁	= Minimum hole depth
h _{nom}	= nominal embedment depth

L	= anchor length
L _v	= screw length
t _{fix}	= fixture thickness
T _{inst}	= torque

Recommended ⁽¹⁾ Loads in Autoclaved Aerated Concrete (AAC)

Single spacing with large anchor spacing and edge distance

	h ₁	h _{nom}	d _o	d	Aerated Concrete		Edge Distance	Spacing				
					Min hole depth	Nominal emb. depth			Hole Dia.	Dia. of screw & Type	Tensile (kN)	Shear ((kN)
					mm	mm			mm	mm	N _{ec}	V _{ec}
Ø 5 x 25	35	25	5	Chip. Ø 3.0	0.05	0.08	45	40				
				Chip. Ø 3.5	0.06	0.1						
				Chip. Ø 4.0	0.08	0.1						
				Wood. Ø 4.0	0.09	0.12						
Ø 6 x 30	40	30	6	Chip. Ø 4.0	0.05	0.08	55	55				
				Chip. Ø 4.5	0.06	0.1						
				Chip. Ø 5.0	0.09	0.12						
				Wood. Ø 4.0	0.08	0.1						
				Wood. Ø 5.0	0.1	0.13						
Metric. M4	0.09	0.12										
Ø 8 x 40	50	40	8	Chip. Ø 4.5	0.11	0.13	70	60				
				Chip. Ø 5.0	0.15	0.2						
				Chip. Ø 6.0	0.19	0.22						
				Wood. Ø 5.0	0.17	0.2						
				Wood. Ø 6.0	0.19	0.23						
Metric. M5	0.18	0.22										

	h ₁	h _{nom}	d _o	d	Aerated Concrete		Edge Distance	Spacing				
					Min hole depth	Nominal emb. depth			Hole Dia.	Dia. of screw & Type	Tensile (kN)	Shear ((kN)
					mm	mm			mm	mm	N _{ec}	V _{ec}
Ø 10 x 50	60	50	10	Chip. Ø 6.0	0.25	0.3	90	75				
				Chip. Ø 8.0	0.3	0.35						
				Wood. Ø 6.0	0.25	0.3						
				Wood. Ø 7.0	0.3	0.35						
				Wood. Ø 8.0	0.3	0.35						
Metric. M6	0.28	0.32										
Ø 12 x 60	70	60	12	Chip. Ø 8.0	0.31	0.5	110	90				
				Wood. Ø 8.0	0.35	0.5						
				Wood. Ø 10.0	0.43	0.5						
				Metric. M8	0.38	0.5						
Ø 14 x 70	80	70	14	Wood. Ø 10.0	0.32	0.5	130	110				
				Wood. Ø 12.0	0.44	0.6						
				Metric. M10	0.44	0.6						

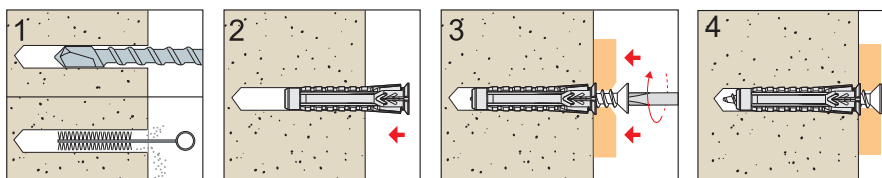
1kN ≈ 100 kgf

⁽¹⁾ The recommended loads derive from the mean ultimate loads and are inclusive of the total safety factor γ=6

The use of plastic anchors is not recommended for permanent suspended loading applications above 40 °C.

NOTE: The torque has to be regulated according to the type of installation and base material. In the absence of CE markings, the recommended loads derive from tests carried out in the Friulsider laboratory in accordance with the appropriate standards. The load values are only valid if the installation has been carried out correctly. The design engineer is responsible for the designing and calculation of the fixing.

Installation



X1 EVO & X1 EVO-L



Autoclaved Aerated Concrete (AAC)

TDS | 1039.1

FRULSIDER X1 EVO & X1 EVO-L

YOUR FIXING FACTORY



Part No.	Description	Drill Diameter (mm)	Plug Length (mm)	Suits screw size (mm)	Suits screw size (Metric)
FMX1P05025	5 x 25mm Plug only	5	25	3.5 - 4	n/a
FMX1P06030	6 x 30mm Plug only	6	30	4.5	M4
FMX1P06050	6 x 50mm Plug only		50		
FMX1P08040	8 x 40mm Plug only	8	40	5 - 6	M5
FMX1P08060	8 x 60mm Plug only		60		
FMX1P10050	10 x 50mm Plug only	10	50	6	M6
FMX1P10070	10 x 70mm Plug only		70		
FMX1P12060	12 x 60mm Plug only	12	60	8	M8
FMX1P14070	14 x 70mm Plug only	14	70	10	M10



FRULSIDER X1 evo w/ Screw

YOUR FIXING FACTORY



Carbon Steel Zinc Clear Screw

Countersunk Head ZINC CLEAR Part No.	Hex Head ZINC CLEAR Part No.	Pan Head ZINC CLEAR Part No.	Description	Drill Diameter (mm)	Plug Length (mm)	Suits screw size (mm)	Screw Length (mm)
FX1PC05025		FX1PP05025	5 x 25mm	5	25	3.5 - 4	30
FX1PC06030		FX1PP06030	6 x 30mm	6	30	4.5	40
FX1PC08040	FX1PH08040	FX1PP08040	8 x 40mm	8	40	5 - 6	50
FX1PC10050	FX1PH10050		10 x 50mm	10	50	6	60
	FX1PH12060		12 x 60mm	12	60	8	70
	FX1PH14070		14 x 70mm	14	70	10	80

Autoclaved Aerated Concrete (AAC)

Autoclaved Aerated Concrete (AAC) such as CSR Hebel® products are manufactured from sand, lime and cement to which a gas-forming agent is added. The liberated gas expands the mixture, forming extremely small, finely dispersed air pockets, resulting in lightweight aerated concrete. AAC products are innovative and environmentally preferable building materials. This is due to their lightweight nature, excellent thermal, fire and acoustic properties and design versatility. These inherent properties of AAC products help achieve quick and cost efficient construction practices as well as providing for comfortable operating environments inside buildings all year round.

Selecting the correct fixing for AAC material is very important and depends on application, loading requirements, fixing head style and material finish. The CSR Hebel® selection guide below provides some guidance for the correct fixing selection however due to continual base material and fixing development also refer to ICCONS for further guidance of suitable fixings for AAC.

Selection of Grade of Fixing

Grade of Fixing	Application	Working Permissible Loads	
		Load (kN)	Approx. Load (kg)
Light Duty	Skirting, Coat hooks, small light fittings, towel rails, mirrors picture & painting hangings, pipe brackets, carpet smooth edge	< 0.2	~ 20
Medium Duty	Mirrors, large light fittings, door & window framing, plasterboard, shelving, light weight cupboards & fittings, meter box, tool rack, curtain tracks & rods, towel rails	0.2 - 0.5	20 - 50
Heavy Duty	Grab rails, hand rails cisterns, clothes dryers, hand basin, sinks, heavy cupboards	0.5 - 2.0	50 - 200

Extract from CSR Hebel® Technical Manual Part 5: Proprietary Fixings & Brackets and Surface Finishes – Section 8.1