

ripple **friulsider**

FM-X5®

Multi-expansion long anchor

The Perfect Anchor for Facades



PREASSEMBLED SCREWS
Ready to use and available in 3 versions

FIRE RESISTANCE F90
Fire resistance class = 90 minutes
(plug Ø10 in concrete)

ULTRA FLEXIBLE
High quality nylon

CE CERTIFICATION
Guaranteed safety

MAXIMUM VERSATILITY
Tested in all base materials

CAN ALSO BE FIXED BY HAND
Low torque need during expansion

NAUTILUS

1000 h

Special anti-corrosion coating
1000 hours in salt spray test

friulsider

since 1966

CERTIFICATION OF QUALITY MANAGEMENT SYSTEM
ISO 9001 Cert. n° 1085

CERTIFICATION OF ENVIRONMENTAL MANAGEMENT SYSTEM
ISO 14001 Cert. n° 0050A



FM-X5®

Multi-expansion long anchor

Versions Available

- Assembled White Zinc Plated Countersunk Head
- Assembled Stainless Steel Countersunk Head
- Assembled Nautilus Countersunk Head
- Assembled White Zinc Plated Hex Head
- Assembled Stainless Steel Hex Head
- Assembled Nautilus Hex Head
- Assembled White Zinc Plated Hex Head with large rim
- Assembled Stainless Steel Hex Head with large rim
- Assembled Nautilus Hex Head with large rim



**MAXIMUM
VERSATILITY**
Tested in all base
materials



ULTRA FLEXIBLE
High quality nylon

Applications

- All Facade Applications
- Stone Cladding Clamps
- Door & Window Frames
- Kitchen Cabinets
- Safety Grills & Railings
- HVAC Applications

Multi-Expansion Facade Anchor



CAN ALSO BE FIXED BY HAND
Low torque needed during
expansion

FM-X5®

Assembled Countersunk Head Screw

Ø 8 Torx T-30 recess

Ø10 Torx T-40 recess



• NAUTILUS •



White Zinc Plated Code	Inox Stainless steel A4-70 Code	NAUTILUS matte finish Code	Plug Ø x L	Screw Ø x L	Fixing thickness tfix mm	df mm	sw	Box q.ty	Pkg.
64301b08080	64301008080	64301c08080	8x80	6x85	10	8.5	T-30	100	1000
64301b08100	64301008100	64301c08100	8x100	6x105	30	8.5	T-30	50	500
64301b08120	64301008120	64301c08120	8x120	6x125	50	8.5	T-30	50	500
64301b08150	64301008150	64301c08150	8x150	6x155	80	8.5	T-30	50	200
64301b08170	64301008170	64301c08170	8x170	6x175	100	8.5	T-30	50	200
64301b10085	64301010085	64301c10085	10x85	7x90	15	10.5	T-40	50	500
64301b10100	64301010100	64301c10100	10x100	7x105	30	10.5	T-40	50	500
64301b10115	64301010115	64301c10115	10x115	7x120	45	10.5	T-40	50	500
64301b10135	64301010135	64301c10135	10x135	7x140	65	10.5	T-40	50	500
64301b10160	64301010160	64301c10160	10x160	7x165	90	10.5	T-40	50	200
64301b10200	64301010200	64301c10200	10x200	7x205	130	10.5	T-40	50	200
64301b10230	64301010230	64301c10230	10x230	7x235	160	10.5	T-40	50	200

FM-X5®

Assembled Hex Head Screw

built-in washer Ø19

wrench 13, Torx T-40 recess



• NAUTILUS •



White Zinc Plated Code	Inox Stainless steel A4-70 Code	NAUTILUS matte finish Code	Plug Ø x L	Screw Ø x L	dr mm	Fixing thickness tfix max	df mm	sw mm	Box q.ty	Pkg.
64302b10085	64302010085	64302c10085	10x85	7x90	19	15	10.5	13 T-40	50	500
64302b10100	64302010100	64302c10100	10x100	7x105	19	30	10.5	13 T-40	50	500
64302b10115	64302010115	64302c10115	10x115	7x120	19	45	10.5	13 T-40	50	500
64302b10135	64302010135	64302c10135	10x135	7x140	19	65	10.5	13 T-40	50	400
64302b10160	64302010160	64302c10160	10x160	7x165	19	90	10.5	13 T-40	50	200

FM-X5®

Assembled Hex Head Screw

with Large Nylon Rim Ø18

built-in washer Ø19

wrench 13, Torx T-40 recess



• NAUTILUS •



White Zinc Plated Code	Inox Stainless steel A4-70 Code	NAUTILUS matte finish Code	Plug Ø x L	Screw Ø x L	db mm	dr mm	Fixing thickness tfix max	df mm	sw mm	Box q.ty	Pkg.
64402b10085	64402010085	64402c10085	10x85	7x90	18	19	15	10.5	13 T-40	50	500
64402b10100	64402010100	64402c10100	10x100	7x105	18	19	30	10.5	13 T-40	50	500
64402b10115	64402010115	64402c10115	10x115	7x120	18	19	45	10.5	13 T-40	50	500
64402b10135	64402010135	64402c10135	10x135	7x140	18	19	65	10.5	13 T-40	50	400
64402b10160	64402010160	64402c10160	10x160	7x165	18	19	90	10.5	13 T-40	50	200

FEATURES

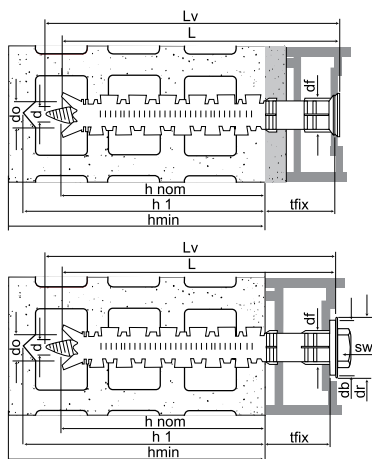
- Maximum Versatility
- High Quality Nylon
- Low Torque needed during expansion
- Multi Expansion
- F90 Certification
- CE Certified
- Innovative, Variable Geometry

ADVANTAGES

- Tested in wide range of Base Materials
- Ultra Flexible
- Can also be fixed by Hand
- Excellent Keying & Friction
- Fire Resistant upto 90 minutes
- Guaranteed Safety
- Optimal expansion is guaranteed preventing rotation & slipping in the hole

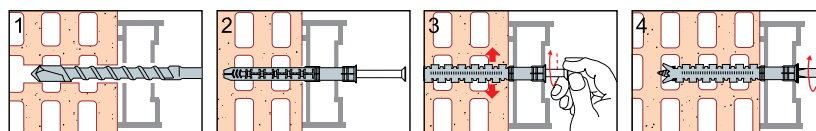
Base Materials

- Concrete
- Solid Stone
- Solid Brick
- Honeycomb Brick
- Cell like Clay Brick
- Light Weight Honeycomb Brick
- Hollow Dense Aggregate Brick
- Hollow Light Aggregate Brick
- Aerated Concrete



d	=	screw diameter	hmin	=	minimum support thickness
db	=	rim diameter	hnom	=	nominal embedment depth
df	=	hole diameter of fixing element	L	=	anchor length
do	=	hole diameter	Lv	=	screw length
dr	=	head screw diameter	sw	=	wrench
h1	=	minimum hole depth	tfix	=	fixture thickness




















































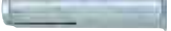


Installation Procedure

DESIGN⁽¹⁾ AND RECOMMENDED⁽²⁾ LOADS

Single anchor with large anchor spacing and edge distances (Temperature = 24°C)

Anchor			Ø8	Ø10	
Minimum hole depth	h_1	mm	80	80	
Nominal embedment depth	h_{nom}	mm	70	70	
Hole diameter	d_o	mm	8	10	
Concrete C12/C15	Tensile/Shear	F_{rd}	kN	0,84	1,40
		F	kN	0,60	1,00
	Edge distance	$C_{cr,N}$	mm	140	140
	Minimum spacing	S_{min}	mm	80	80
	Minimum edge distance	C_{min}	mm	80	80
Concrete C16/C20	Tensile/Shear	F_{rd}	kN	1,40	1,90
		F	kN	1,00	1,40
	Edge distance	$C_{cr,N}$	mm	100	100
	Minimum spacing	S_{min}	mm	60	60
	Minimum edge distance	C_{min}	mm	60	60
Autoclaved Aereated Concrete AAC EN771-4 $\rho=0,5\text{kg/dm}^3$ fb $\geq 2,5\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,30	0,30
		F	kN	0,21	0,21
	Edge distance	$C_{cr,N}$	mm	100	100
	Minimum spacing	S_{min}	mm	60	60
	Minimum edge distance	C_{min}	mm	60	60
Minimum support thickness	h_{min}	mm	100	100	
Solid brick EN771-1 fb $\geq 28\text{MPa}$	Tensile/Shear	F_{rd}	kN	1,40	1,40
		F	kN	1,00	1,00
Hollow clay brick double EN771-1 fb $\geq 28\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,60	0,60
		F	kN	0,43	0,43
Hollow brick - Alveolater EN771-1 fb $\geq 13\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,6	0,6
		F	kN	0,43	0,43
Hollow brick - Alveolater 35 EN771-1 fb $\geq 10\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,6	0,6
		F	kN	0,43	0,43
Hollow brick - Light EN771-1 fb $\geq 7\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,36	0,36
		F	kN	0,26	0,26
Hollow brick - Poroton 25x30x19 EN771-1 fb $\geq 22\text{MPa}$	Tensile/Shear	F_{rd}	kN	0,6	0,8
		F	kN	0,43	0,57
Minimum support thickness on masonry	h_{min}	mm	110	110	
Minimum spacing on masonry	S_{min}	mm	100	100	
Minimum edge distance on masonry	C_{min}	mm	250	250	
Max torque on concrete support	zincplated / NAUTILUS screw	T_{max}	Nm	9	15
	stainless steel screw	T_{max}	Nm	10	20

Our Range of Products

ATS-evo		ETAG 001	ETA 10/0423 op.1		
FM-753® CRACK		ETAG 001	ETA 09/0056 op.1 ETA 10/0293 op.1		
FM-753®		ETAG 001	ETA 01/0014 op.7 ETA 01/0009 op.7 ETA 13/0367 op.7		
FM-744®		ETAG 001	ETA 05/0169 op.7		
FM-MP3®evo LONG		ETAG 001 ETAG 001 part 6	ETA 09/0067 op.7 ETA 10/0074		
KEM-UP EPOXY		ETAG 001 ETAG 001 TR 023	ETA 09/0061 op.1 ETA 12/0602 op.7 "Diamond" ETA 12/0542		
KEM-UP VINYLESTER		ETAG 001 ETAG 029 TR 023	ETA 08/0383 op.1 ETA 12/0543 ETA 12/0553		
KEM-UP POLYESTER		ETAG 001 ETAG 029	ETA 12/0608 op.7 ETA 12/0534		
FRP		ETAG 001	ETA 11/0155		
VF			EN 14592		
FM-X5®		ETAG 020	ETA 10/0425		
FM-TXT		ETAG 020	ETA 12/0388		
TSS / TBB / TPP		ETAG 014	ETA 10/0190		
DRILLNOX TH 6			ETA 10/0181		
DRILLNOX TH 12			ETA 10/0181		
ISODRILL TH DF		ETAG 006	ETA 08/0239		
ISODRILL TT		ETAG 006	ETA 08/0239		
APL / AFL			EN 14592		
SOLAR-V			EN 14592:2009		
TAP					
TUPP					
X1					

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