

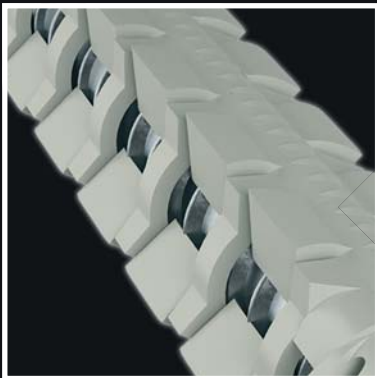


FM-X5
MULTI-EXPANSION LONG PLUG

Innovation and multi-expansion!



ULTRA FLEXIBLE
High quality nylon



GREATER GRIP
Innovative variable geometry
multi-expansion



SCREW ALWAYS PREASSEMBLED
Ready to use. Available in versions:
- White zinc plated,
- Nautilus,
- Stainless steel A4 70



NAUTILUS **1000 h**

Special anti-corrosion coating
1000 hours in salt spray test



FRIULSIDER



**Assembled
countersunk head screw
Ø 8 Torx T30 recess
Ø10 Torx T40 recess**

White zinc plated Code	Nautilus Code	Stainless steel A4 Code	Plug do x L mm	Screw d x Lv mm	tfix mm	df mm	recess	Pkg.	Outer box
64301b08080	64301c08080▲	64301008080	8x80	6x85	10	8,5	T30	100	1000
64301b08100	64301c08100▲	64301008100	8x100	6x105	30	8,5	T30	50	500
64301b08120	64301c08120▲	64301008120	8x120	6x125	50	8,5	T30	50	500
64301b08150	64301c08150▲	64301008150	8x150	6x155	80	8,5	T30	50	200
64301b08170	64301c08170▲	64301008170	8x170	6x175	100	8,5	T30	50	-
64301b10085	64301c10085▲	64301010085	10x85	7x90	15	10,5	T40	50	500
64301b10100	64301c10100▲	64301010100	10x100	7x105	30	10,5	T40	50	500
64301b10115	64301c10115▲	64301010115	10x115	7x120	45	10,5	T40	50	500
64301b10135	64301c10135▲	64301010135	10x135	7x140	65	10,5	T40	50	200
64301b10160	64301c10160▲	64301010160	10x160	7x165	90	10,5	T40	50	-
64301b10200	64301c10200▲	64301010200	10x200	7x205	130	10,5	T40	50	-
64301b10230	64301c10230▲	64301010230	10x230	7x235	160	10,5	T40	50	-



**Assembled
special hex head screw
with built-in washer Ø19
wrench 13, Torx T40 recess**

White zinc plated Code	Nautilus Code	Stainless steel A4 Code	Plug do x L mm	Screw d x Lv mm	dr mm	tfix mm	df mm	sw/recess	Pkg.	Outer box
64302b10085	64302c10085▲	64302010085	10x85	7x90	19	15	10,5	13 T40	50	500
64302b10100	64302c10100▲	64302010100	10x100	7x105	19	30	10,5	13 T40	50	500
64302b10115	64302c10115▲	64302010115	10x115	7x120	19	45	10,5	13 T40	50	500
64302b10135	64302c10135▲	64302010135	10x135	7x140	19	65	10,5	13 T40	50	200
64302b10160	64302c10160▲	64302010160	10x160	7x165	19	90	10,5	13 T40	50	-



**Assembled
plug with large rim Ø18
special hex head screw
with built-in washer Ø19
wrench 13, Torx T40 recess**

White zinc plated Code	Nautilus Code	Stainless steel A4 Code	Plug do x L mm	db mm	Screw d x Lv mm	dr mm	tfix mm	df mm	sw/recess	Pkg.	Outer box
64402b10085	64402c10085▲	64402010085	10x85	18	7x90	19	15	10,5	13 T40	50	500
64402b10100	64402c10100▲	64402010100	10x100	18	7x105	19	30	10,5	13 T40	50	500
64402b10115	64402c10115▲	64402010115	10x115	18	7x120	19	45	10,5	13 T40	50	500
64402b10135	64402c10135▲	64402010135	10x135	18	7x140	19	65	10,5	13 T40	50	200
64402b10160	64402c10160▲	64402010160	10x160	18	7x165	19	90	10,5	13 T40	50	-

▲ Quantity and delivery terms to be agreed

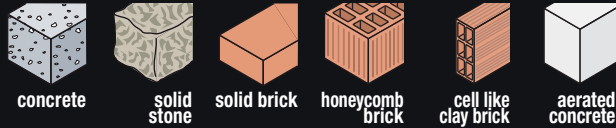
VERSIONS:

- plug with countersunk screw
- plug with hex head screw
- large rim plug with hex head screw
- All versions with white zinc plated, stainless steel A4 or Nautilus screws

PRODUCT FEATURES:

- nylon plug with multi-expansion variable geometry
- screw always preassembled
- CE certification for guaranteed safety

SUITABLE BASE MATERIALS:



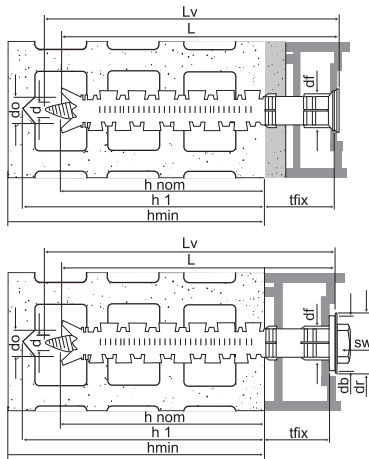
CERTIFICATIONS:

- Certified according to ETAG 020
- F90 fire resistance certification

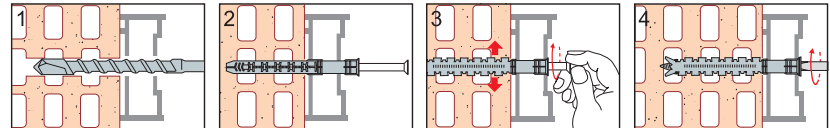


NAUTILUS 1000 h

Special anti-corrosion coating with matte finish - 1000 hours in salt spray test



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



DESIGN⁽¹⁾ AND RECOMMENDED⁽²⁾ LOADS

Single anchor with large anchor spacing and edge distances (Temperature <= 40°C)

Anchor			Ø8	Ø10	
Minimum hole depth	h_1	mm	80	80	
Nominal embedment depth	h_{nom}	mm	70	70	
Hole diameter	d_0	mm	8	10	
Concrete C12/C15	Tensile/Shear	F_{rd}	kN	0,8	1,4
		F	kN	0,6	1,0
	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	1,4	1,9
		F	kN	1,0	1,4
	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 $\rho=0,5kg/dm^3$ $f_b \geq 2,5MPa$	Tensile/Shear	F_{rd}	kN	0,3	0,3
		F	kN	0,21	0,21
	Edge distance	$C_{cr,N}$	mm	100	100
	Minimum spacing	S_{min}	mm	250	250
	Minimum edge distance	C_{min}	mm	100	100
Minimum support thickness	h_{min}	mm	100	100	
Solid brick EN771-1 $f_b \geq 43MPa$	Tensile/Shear	F_{rd}	kN	1,4	1,4
		F	kN	1,0	1,0
Hollow clay brick double EN771-1 $f_b \geq 28MPa$	Tensile/Shear	F_{rd}	kN	0,6	0,6
		F	kN	0,43	0,43
Hollow brick - Alveolater EN771-1 $f_b \geq 13MPa$	Tensile/Shear	F_{rd}	kN	0,6	0,6
		F	kN	0,43	0,43
Hollow brick - Alveolater 35 EN771-1 $f_b \geq 10MPa$	Tensile/Shear	F_{rd}	kN	0,6	0,6
		F	kN	0,43	0,43
Hollow brick - Light EN771-1 $f_b \geq 7MPa$	Tensile/Shear	F_{rd}	kN	0,36	0,36
		F	kN	0,26	0,26
Hollow brick - Poroton 25x30x19 EN771-1 $f_b \geq 22MPa$	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	250	250	
Minimum edge distance on masonry	C_{min}	mm	100	100	
Max torque on concrete support	zincplated / NAUTILUS screw	T_{max}	Nm	9	15
	stainless steel screw	T_{max}	Nm	10	20

⁽¹⁾ The design loads F_{rd} derive from the characteristic loads on the ETA 10/0425 certification and are inclusive of the partial safety factors γ_m proportional to each diameter (see ETA).

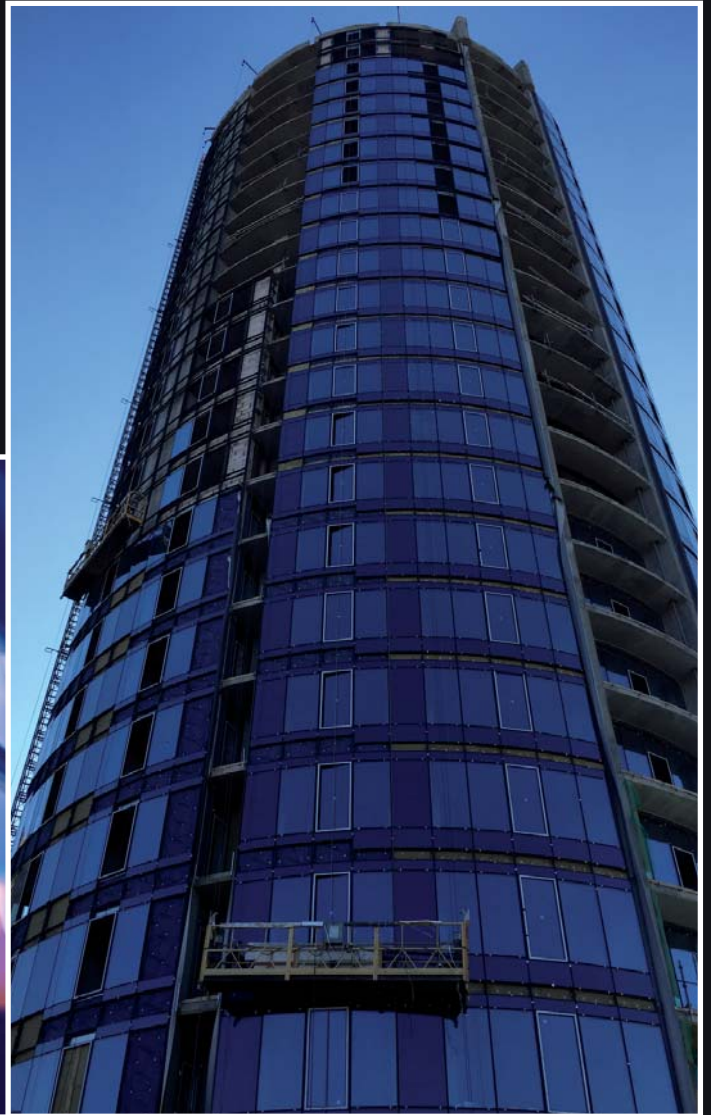
⁽²⁾ The recommended loads F derive from the characteristic loads on the ETA 10/0425 certification and are inclusive of the partial safety factors $\gamma_s=1.4$ and γ_m proportional to each diameter (see ETA).

NOTE: The torque has to be regulated according to the type of installation and base material. 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, see ETAG 020 annex C. 1kN = 100 kgf



APPLICATIONS:

Window and door frames
Fixing of wooden substructures
for ventilated facades



CERTIFICATION OF QUALITY MANAGEMENT SYSTEM

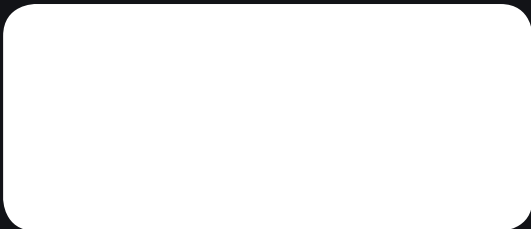


ISO 9001 Cert. n° 1085

CERTIFICATION OF ENVIRONMENTAL MANAGEMENT SYSTEM



ISO 14001 Cert. n° 0050A



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