



• NAUTILUS •

Anti-corrosion immersion / Power Coated Fixing

~1000 HOURS OF RESISTANCE TO CORROSION



Nautilus is the revolutionary anti-corrosion coating designed and tested exclusively by **Friulsider** laboratories.

Researchers, taking advantage of the unique experience in the field of fixings, have devised an innovative treatment that greatly increases the ability of metal to resist oxidation in aggressive environments such as marine or industrial areas.

The appearance of red rust occurs in fact after more than 1000 hours, compared to 70 hours of a normal zinc plating. An outstanding achievement, which places Friulsider at the forefront of its field, improving the performance of its range.

Friulsider, in collaboration with several leading electro-plating plants, has designed and tested a powerful and innovative **anti-corrosion coating**



applied on anchors & screws.

What is Nautilus ?

Nautilus Pompilius, is the best-known species of nautilus. The shell, when cut away, reveals a lining of lustrous nacre and displays a nearly perfect equiangular spiral, although it is not a golden spiral. The shell exhibits countershading, being light on the bottom and dark on top. This is to help avoid predators, because when seen from above, it blends in with the darkness of the sea, and when seen from below, it blends in with the light coming from above.



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Corrosivity categories according to ISO 9223

CORROSIVITY CATEGORIES According to ISO 9223			STEEL	STEEL	STAINLESS STEEL A2 (wr.1.4301 EN10088)	STAINLESS STEEL A4 (wr.1.4404 EN10088)
			White zinc plated 5µm ISO4042	NAUTILUS		
C5	very high	Industrial-Marine				☉
C4	high	Industrial-Marine				●
C3	medium	Industrial-Marine-Urban		☉	☉	●
C2	low	Urban		●	●	●
C1	very low	Rural	☉	●	●	●

- ☉ Partially suitable applications
- Suitable applications

C5-M = marine environment with very high salinity and very close to the sea <0.2 km;
 C5-I = industrial environments with high air pollution (sulfur dioxide-chloride-etc.);
 C4 = industrial environment with high sulfur dioxide pollution, coastal areas with high salinity, distance from the sea 0,2-1 km;
 C3 = urban or industrial environment with low sulfur dioxide pollution, coastal areas with moderate salinity, distance from the sea 1-3 km;
 C2 = Urban environment contaminated mainly from densely populated areas with no significant industrial activity, distance from the sea > 3 km;
 C1 = Rural non-contaminated environment, mainly natural areas, distance from the sea > 20 km;

Environmental Assessment: combinations of corrosivity categories according to ISO9223 - micro / localized specific environments - high temperatures - high UV radiation - galvanic corrosion due to contact with metals of different scales of nobility - direct or partial exposure to sea water including water spray - direction of the wind in the coastal or industrial area - presence of humidity / condensation > 80% - presence of corrosive vapours, (sulfides, chlorides, etc.) internal such as swimming pools / chemical plants or external such as proximity of industrial fumes discharges - rainfall frequency - underground structures - etc.

THE ENVIRONMENTAL ASSESSMENT MUST BE CARRIED OUT BY DESIGNERS AND/OR COMPETENT PERSONAL, THE INFLUENCE OF THE ABOVE FACTORS MUST BE CONSIDERED IN THE USE OF THE FIXINGS SHOWN IN THE TABLE, AND THEREFORE SUITABLE PROTECTIVE AND DESIGN-CONSTRUCTION FACTORS MUST BE IMPLEMENTED.

Main Advantages

The **NAUTILUS** coating was developed for the protection of Friulsider fixings operating in aggressive atmospheric conditions.

- High corrosion resistance
- Salt spray test >1,000 hrs

Other Advantages

- Thin(12 μ): No interference on the threads
- Environmentally friendly: RoHS compliant and Chromium VI free
- Resistant to high temperatures
- Can be applied to most of Friulsider fixings

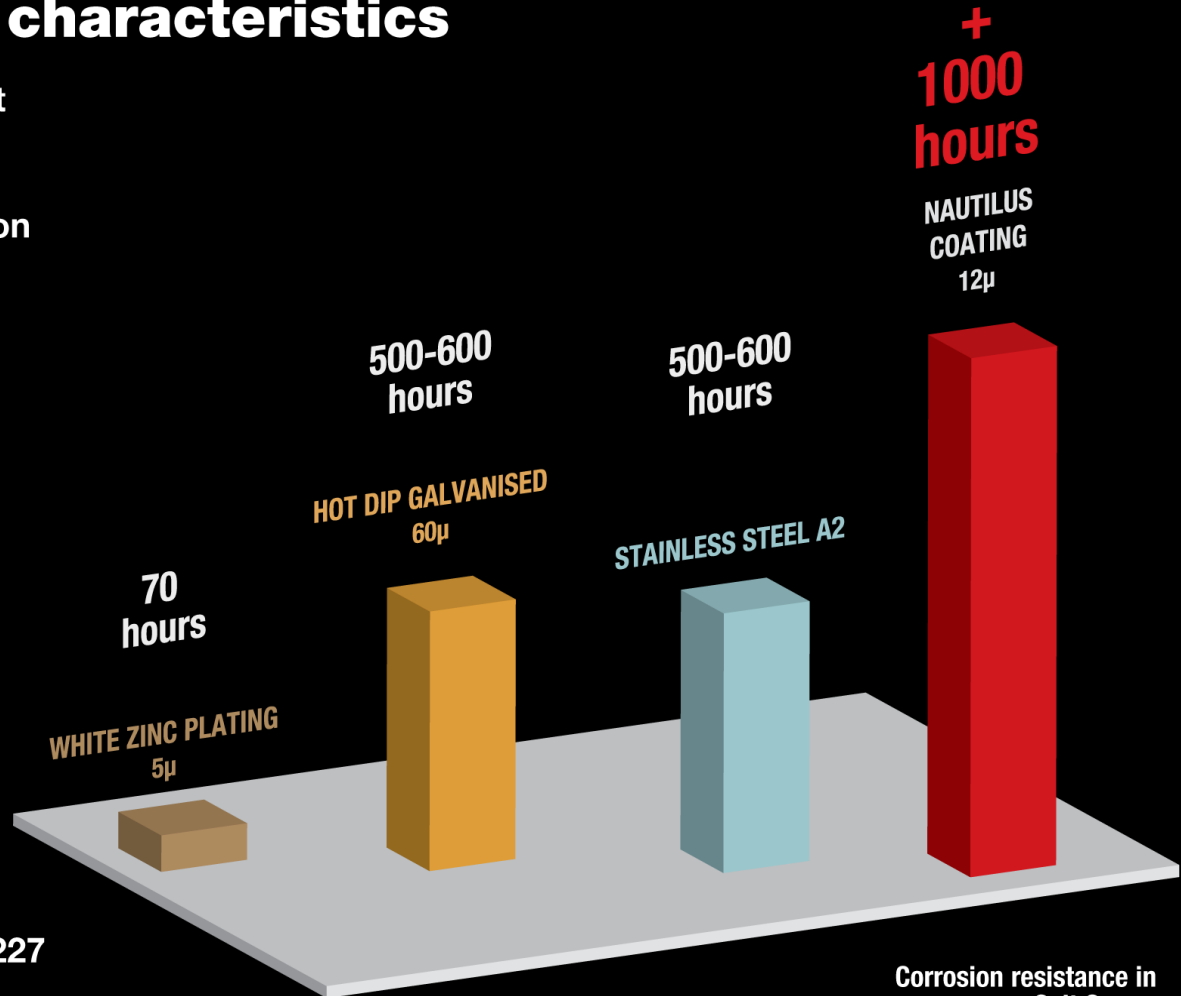
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Nautilus coating characteristics

- ▶ Corrosion resistance in Salt Spray: 1000 hours (red rust appearance)
- ▶ Thin (12µ): no interference on the threads
- ▶ Environmentally friendly: RoHS compliant and Chromium VI free
- ▶ Resistant to high temperatures

Nautilus coating regulations

- ▶ Salt Spray Test NSS according to UNI EN ISO 9227

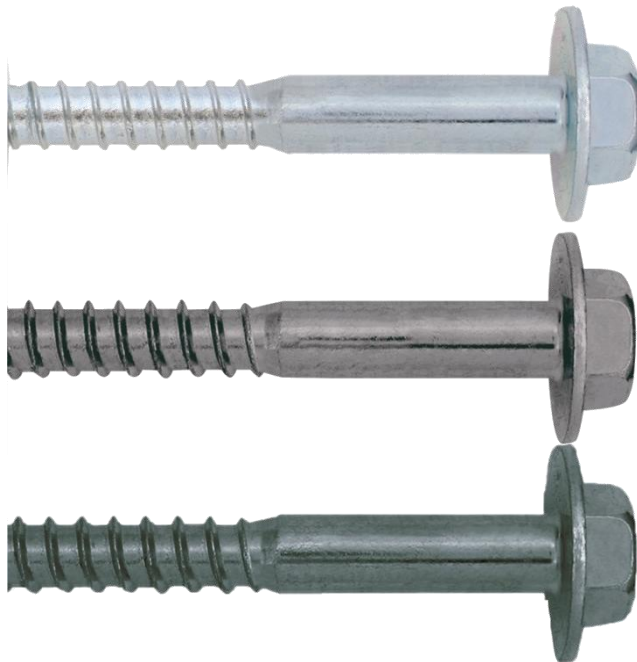


Corrosion resistance in Salt Spray. Red rust appearance.

What does it look like?

- Colour: anthracite grey
- Finish: opaque*

* with the exception of FM-753 Crack which has a shine finish



White zinc plated

Stainless steel A4

◦ NAUTILUS ◦

Why is it convenient to use Nautilus?

FM 753 – FM 753 Crack

- Valid alternative to stainless steel A4
- Nautilus price = significantly lower than stainless steel

FM X5 Screws

- Valid alternative even to standard zinc plating
- Nautilus price = slightly higher than standard zinc plating
- At a slightly higher cost than the zinc plated product, Nautilus offers a really high resistance to corrosion.

The range

Has already been applied to the TOP of the range fixings:

- **FM-753 Crack (shine finish)**
- **FM-753**
- **FM-X5 Screws**

Anti-corrosion immersion / Power Coated Fixing

Assembled

Hardened and tempered anchor body

High resistance white zinc plating with more than 1000 hours in salt spray test

Stainless steel A4 clip

Monté

Tige bonifiée

Zingué blanc haute résistance testé plus de 1000h en brillard salin

Bague acier inoxydable A4



Code	Dimension Ø x L	Thread length Longueur filet	Fixing thickness Epaiss. fixable max	Box q.ty Boîte de	Pkg. Cond.
75350b08068	M8x68	30	4	100	800
75350b08075	M8x75	30	10	100	800
75350b08090	M8x90	40	25	100	500
75350b08115	M8x115	60	50	100	500
75350b08135	M8x135	80	70	100	500
75350b08165	M8x165	80	100	50	250
75350b10090	M10x90	40	10	50	400
75350b10105	M10x105	55	25	50	250
75350b10115	M10x115	55	35	50	250
75350b10135	M10x135	85	55	50	250
75350b10155	M10x155	85	75	50	125
75350b10185	M10x185	85	105	25	125
75350b12110	M12x110	65	10	50	250
75350b12120	M12x120	65	20	50	250
75350b12145	M12x145	85	45	25	200
75350b12170	M12x170	85	70	25	125
75350b12200	M12x200	85	100	25	125
75350b16130	M16x130	65	10	20	120
75350b16150	M16x150	85	30	20	100
75350b16185	M16x185	85	60	20	80
75350b16220	M16x220	85	100	15	90

FM-753® CRACK

HEAVY DUTY THROUGH ANCHOR
FOR CRACKED CONCRETE

Anti-corrosion immersion / Power Coated Fixing

Assembled
Stainless steel A4 clip
High resistance zinc plating
with more than 1000 hours
in salt spray test

Monté
Bague acier inoxydable A4
Zingage haute résistance
testé plus de 1000h
en brouillard salin



FM-753®

HEAVY DUTY THROUGH ANCHOR



ETA 01/0014 op.7
ETA 01/0009 op.7

Code	Dimension Ø x L	Thread length Longueur filet	Fixing thickness Épais. fixable max	Box q.ty Boîte de	Pkg. Cond.
75320c06045 ⁽¹⁾	M6x45	20	3	200	2000
75320c06065	M6x65	40	15	100	1000
75320c06085	M6x85	60	35	100	1000
75320c06100	M6x100	60	50	50	500
75320c08050 ⁽¹⁾	M8x50	23	5	100	1000
75320c08065	M8x65	38	7	100	800
75320c08075	M8x75	48	15	100	800
75320c08090	M8x90	63	30	100	500
75320c08115	M8x115	83	55	100	500
75320c08135	M8x135	88	75	100	500
75320c08165	M8x165	88	105	50	250
75320c10060 ⁽¹⁾	M10x60	28	5	50	500
75320c10075	M10x75	43	5	50	500
75320c10090	M10x90	55	20	50	400
75320c10100	M10x100	60	30	50	400
75320c10120	M10x120	85	50	50	250
75320c10145	M10x145	85	75	50	250
75320c10170	M10x170	85	100	50	200
75320c12080 ⁽¹⁾	M12x80	40	7	50	300
75320c12100	M12x100	58	10	50	250
75320c12110	M12x110	68	20	50	250
75320c12135	M12x135	93	45	25	200
75320c12160	M12x160	93	70	25	150
75320c12185	M12x185	93	100	25	150
75320c16110 ⁽¹⁾	M16x110	53	15	20	100
75320c16125	M16x125	68	10	20	100
75320c16145	M16x145	88	30	20	100
75320c16175	M16x175	88	60	20	80
75320c16215	M16x215	88	100	15	60
75320c20170	M20x170	60	30	10	50
75320c20215	M20x215	60	75	10	50

⁽¹⁾ Anchors with reduced embedment depths / Cheville avec profondeur de pose réduite

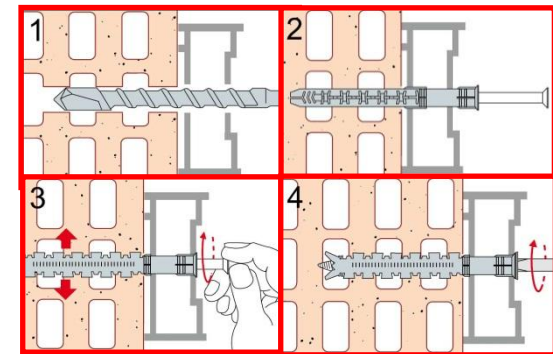
Anti-corrosion immersion / Power Coated Fixing

FM-X5[®]
MULTI-EXPANSION LONG PLUG



ETA 10/0425

**THROUGH
FIXING**



- concrete
- solid brick
- honeycomb brick
- cell like clay brick
- light weight honeycomb brick
- hollow dense aggregate block
- hollow light aggregate block
- aerated concrete
- solid stone
- honeycomb brick

Dedicated Production

On request we can evaluate the application of the NAUTILUS coating on other fixing ranges and on several screws