

ZnAl[®]

The most durable galvanized steel wire

95% Zinc & 5% Aluminium

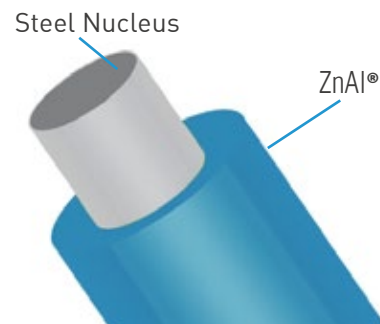


Description

The ZnAl[®] alloy is made by 95% Zinc and 5% Aluminium. It is used to produce wire (1,40 mm to 4,50 mm diameter) in order to increase its resistance to corrosion.

Salt Fog Chamber tests demonstrate that ZnAl[®] has a meaningful slower corrosion rate compared to the heavy galvanized wire (according to the Standard EN 10.244-2).

The alloy of these two elements, Zinc and Aluminium, increases the resistance to corrosion of the Aluminium and the Zinc galvanizing protective function.



Complies with EN 10244-2. 'Steel wire & steel wire products. No ferric metallic recovering over steel wire. Part 2: Zinc recovering or Zinc alloy'.



Characteristics

- The coating is more homogeneous and ductile and it allows an excellent adhesion to the wire.
- It is more resistant to corrosive agents (almost in welding joint areas, compared to heavy galvanized wire).
- Metallic brightness surface.
- It does not flake easily.
- The ZnAl[®] laminated structure adapts perfectly to the profiling, inlaying and folding processes.



The manufacturing process



Celsa steel production

Wire rod production

Wire rod drawing

ZnAl[®] application

Finish products



Salt Fog Chamber test (S.F.C.)

According to the Standard ISO 9227.

Comparative analysis of ZnAl[®] and heavy galvanized according to the Standard EN 10.244-2.



Coating: ZnAl[®] 276gr/m²

Wire diameter: 3,72 mm

The ZnAl[®] stands 1.000 hours up till the first red rusting spots appear.



Coating: Heavy galvanized 230g/m²

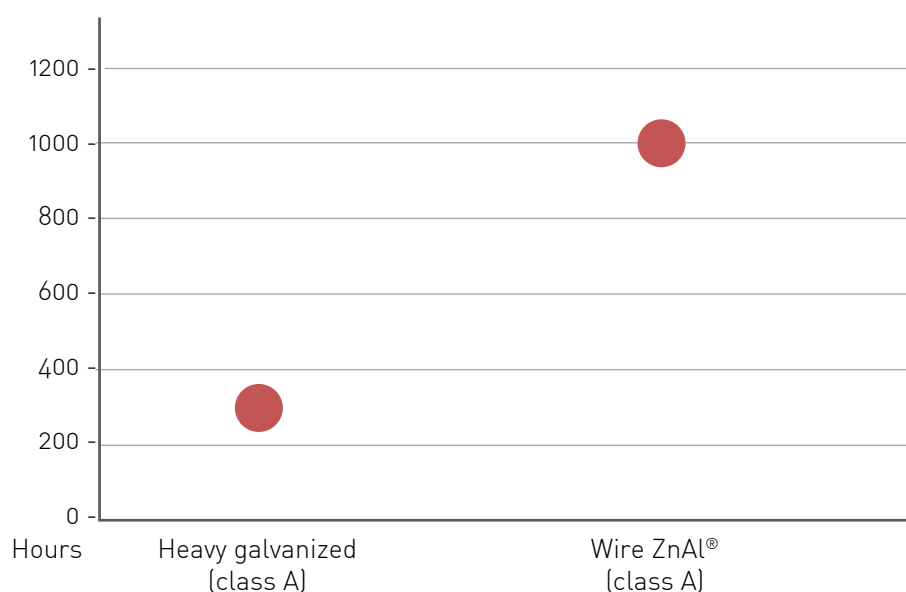
Wire diameter: 2,44 mm

Heavy galvanized appearance after 1.000 hours in the salt Fog Chamber.



Beginning of the red rusting in Salt Fog Chamber






According to the Standard ISO 9227. Corrosion test in artificial atmospheres





Resistance evolution in an accelerated corrosion test

Wire Ø:3,72mm - Coating ZnAl® 276 g/m²

HOURS IN S.F.C.	EVOLUTION	COMMENTS
START		
24		Beginning of the white rusting. Zinc rusts with the air and creates a Zinc oxide film resistant to corrosion.
900		
1.000		Beginning of the red rusting. Small Iron oxide spots in a specific area of the sample. It is not widespread.
1.500		The corrosion remains the same as 1.000 hours. Do not lose mass.



Mass requirement for Zn95 Al5 coating

According to the Standard EN 10244-2

Diameter (mm)	Mass coating (g/m ²) -minimum-		
	A	B	AB
$1,40 \leq d < 1,65$	195	100	135
$1,65 \leq d < 1,85$	205	100	145
$1,85 \leq d < 2,15$	215	115	155
$2,15 \leq d < 2,50$	230	125	170
$2,50 \leq d < 2,80$	245	125	185
$2,80 \leq d < 3,20$	255	135	195
$3,20 \leq d < 3,80$	265	135	210
$3,80 \leq d < 4,50$	275	135	220



Related products ZnAl®

Wire diameter from 1,40 to 4,50 mm



150 YEARS OF EXPERIENCE
WILL ALWAYS MAKE THE DIFFERENCE