



<b>DUPLEX STAINLESS STEEL ACX 940</b>	
EN DESIGNATION	ASTM DESIGNATION
1.4362	2304
X2CrNiN23-4	S32304

**DESCRIPTION** ACX 940 is a low alloyed duplex (lean duplex) stainless steel having a microstructure with a phase balance of approximately 50% ferrite and 50% austenite that provides a yield strength and tensile strength higher than ACX 120 and ACX 250. As all duplex stainless steels, this grade is suitable for cold forming operations and has good corrosion resistance.

**CHEMICAL  
COMPOSITION**

C	Si	Mn	P	S	Cr	Ni	Mo	N
≤0.030	≤1.00	≤2.00	≤0.035	≤0.015	22.00-24.00	3.50-5.50	0.10-0.60	0.05-0.20

**APPLICATIONS**

- Paper industry
- Chemical industry
- Food industry
- Mining industry
- Waste water treatment plants
- Structures
- Storage tanks

**MECHANICAL  
PROPERTIES  
EN 10088-2  
EN 10028-7**

	C	H	P
<b>R<sub>p0.2</sub></b>	≥ 450 N/mm <sup>2</sup>	≥ 400 N/mm <sup>2</sup>	≥ 400 N/mm <sup>2</sup>
<b>R<sub>m</sub></b>	650 - 850 N/mm <sup>2</sup>	650 - 850 N/mm <sup>2</sup>	630 - 800 N/mm <sup>2</sup>
<b>Elongation</b>	≥ 25%	≥ 25%	≥ 25%

C = Cold rolled sheet  
H = Hot rolled sheet  
P = Plate

**PHYSICAL  
PROPERTIES  
EN 10088-1**

At 20°C it has a density of 7.8 kg/dm<sup>3</sup> and a specific heat of 500 J/kg·K

	20°C	100°C	200°C	300°C
<b>Modulus of elasticity (GPa)</b>	200	190	180	170
<b>Mean coefficient of linear expansion between 20°C (10<sup>-6</sup> x K<sup>-1</sup>) and</b>	-	13	13.5	14
<b>Thermal conductivity (W/m·K)</b>	16	17	19	20
<b>Electrical resistivity (Ω·mm<sup>2</sup>/m)</b>	0.80	-	-	-

**WELDING**

ACX 940 can be welded using most of the conventional welding methods, such as MMA/SMAW, TIG, MIG, SAW, FCAW, laser, etc. Due to its two-phase structure, it is resistant to hot cracking, grain coarsening embrittlement and martensite formation.

Set up recommendations for proper welds conditions include overalloyed filler material, a heat input of 2 kJ/mm maximum and nitrogen in the shielding gas.





## ACX 940 / DUPLEX STAINLESS STEEL

### CORROSION RESISTANCE

Its high chromium content gives ACX 940 an excellent corrosion resistance in general, similar to ACX 250.

### GENERAL CORROSION

ACX 940 presents corrosion rates lower than 0.10 mm/year when is in contact with:

- 20% phosphoric acid at boiling temperature.
- 20% sulphuric acid at room temperature.
- 50% acetic acid at boiling temperature.
- Water.
- Beer.
- Milk.
- Fuel.

### PITTING CORROSION

ACX 940 has a PRE (Pitting Resistance Equivalent) average value of 26, showing slightly higher resistance than ACX 250 with a PRE value of 25.

### STRESS CORROSION CRACKING

ACX 940 is less susceptible to this kind of corrosion than austenitic stainless steels.

### ATMOSPHERIC CORROSION

ACX 940 is more resistant to atmospheric corrosion than ACX 250.

### SURFACE CLEANING

Wash the surface with neutral soap and water applied with a cloth or a brush without scratching the stainless steel. Then, always rinse the stainless steel with water to remove completely the cleaning agent. Finally, it is recommended to dry the surface to preserve a good superficial condition. In severe environments, a frequent cleaning is strongly recommended.

### SPECIFICATIONS

It can be delivered according to EN 1.4362 from EN 10088-2 and EN 10028-7, and also S32304 from ASTM A-240 standard requirements.