| DUPLEX STAINLESS STEEL<br>ACX 930 | |
|---|---|
| EN DESIGNATION | ASTM DESIGNATION |
| 1.4162 | 2101 |
| X2CrMnNiN21-5-1 | S32101 |

## DESCRIPTION

ACX 930 is a low alloyed stainless steel (lean duplex) with a microestructure of ferrite and austenite in a proportion of 50:50 approximately. It presents high mechanical resistance and good corrosion resistance.

## CHEMICAL COMPOSITION

| C | Si | Mn | P | S | Cr | Ni | Mo | N | Cu |
|---|---|---|---|---|---|---|---|---|---|
| ≤0,04 | ≤1,00 | 4,00-6,00 | ≤0,040 | ≤0,015 | 21,00-22,00 | 1,35-1,70 | 0,10-0,80 | 0,20-0,25 | 0,10 - 0,80 |

## APLICATIONS

- Storage tanks and tube piping
- Structural applications
- Paper and pulp industry
- Oil&Gas industry
- Transport
- Domestic heaters

## MECHANICAL PROPERTIES IN ANNEALED STATE

| | C | H | P |
|---|---|---|---|
| $Rp_{0,2}$ | > 530 N/mm² | > 480 N/mm² | > 450 N/mm² |
| Rm | 700 - 900 N/mm² | 600 - 900 N/mm² | 650 - 850 N/mm² |
| Elongation | > 20% | > 30% | > 30 % |

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

## PHYSICAL PROPERTIES EN 10088-1

At 20ºC it has a density of 7,7 kg/dm³ and a specific heat of 500 J/kg·K

| | 20ºC | 100ºC | 200ºC | 300ºC |
|---|---|---|---|---|
| Modulus of elasticity (GPa) | 205 | 200 | 190 | 180 |
| Mean coefficient of linear expansion betweeen 20ºC ($10^{-6}$ x $K^{-1}$) y | - | 13 | 14 | 14,5 |
| Thermal conductivity (W/m·K) | 15 | - | - | - |
| Electrical resistivity (Ω·mm²/m) | 0,75 | - | - | - |

## WELDING

ACX 930 can be welded using most of the conventional welding methods, as MMA/SMAW, TIG, MIG, SAW, FCAW, laser, etc. It is not sensitive solidification cracking, grain growth, or martensitic transformation due to its austenoferritic structure.

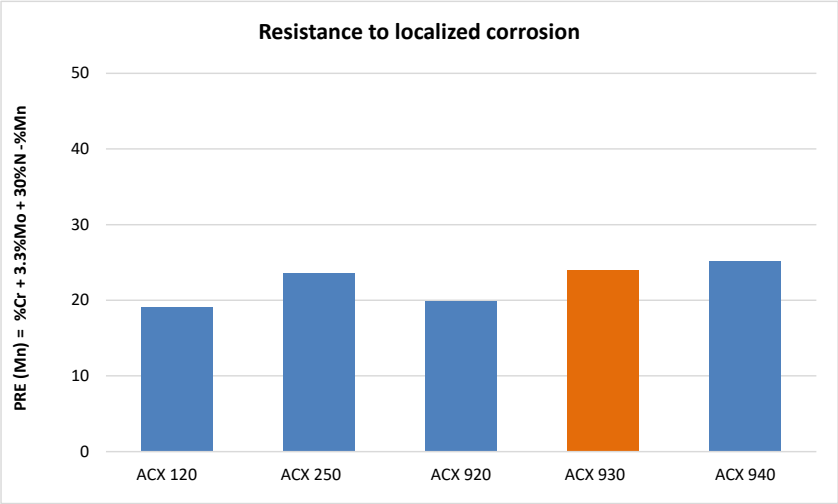
To ACX 930 welding, welding conditions should be adjusted to obtain the type of microstructure that guarantees the optimum final properties level. In general, it is recommended to use superalloyed filler material, considering nitrogen addition in shielding gas and using thermal inputs lower than 2kJ/mm.

Same as other duplex, preheating or after welding thermal treatments are not required in ACX 930.

## CORROSION RESISTANCE

ACX 930 exhibits an excellent corrosion resistance due to its high chromium content.

ACX 930 shows good resistance to localized corrosion.




ACX 930 duplex stainless steel is less susceptible to suffer stress corrosion cracking than austenitic stainless steel.

## SURFACE CLEANING

It is essential to have an accurate and periodic cleaning protocol to preserve the surfaces and obtain the best stainless steel performance.

To guarantee the correct cleaning, it is recommended to 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. Products containing chlorides should be avoided. Just in case its use is essential, the contact should be minimum and must be followed by rinse with generous amount of water.

## SPECIFICATIONS

It can be delivered according to EN 1.4162 from EN 10088-2 and EN 10028-7, and also S32101 from ASTM A-240 standard requirements.