



| AUSTENITIC STAINLESS STEEL ACX 120 | |
|---------------------------------------|------------------|
| EN DESIGNATION | ASTM DESIGNATION |
| 1.4301 | 304 |
| X5CrNi18-10 | S30400 |

DESCRIPTION This is the basic austenitic stainless steel 18/8, the most widely used. It exhibits good properties regarding corrosion resistance, forming and weldability.

CHEMICAL COMPOSITION

| C | Si | Mn | P | S | Cr | Ni |
|--------|-------|-------|--------|--------|-------------|------------|
| ≤0.070 | ≤0.75 | ≤2.00 | ≤0.040 | ≤0.015 | 17.50-19.00 | 8.00-10.00 |

APPLICATIONS

- Tableware
- Household appliances
- Industry
- Construction, decoration

MECHANICAL PROPERTIES AFTER COLD ROLLING AND FINAL ANNEALING

| | |
|-------------------------|-----------------------------|
| R_{p0.2} | > 230 N/mm ² |
| R_m | 540 - 750 N/mm ² |
| Elongation | > 45% |
| Hardness | < 200 HB |

PHYSICAL PROPERTIES

At 20°C has a density of 7.9 kg/dm³ and a specific heat of 500 J/kg·K

| | 20°C | 100°C | 200°C | 300°C | 400°C | 500°C |
|---|------|-------|-------|-------|-------|-------|
| Modulus of elasticity (GPa) | 200 | 194 | 186 | 179 | 172 | 165 |
| Mean coefficient of linear expansion between 20°C (10⁻⁶ x K⁻¹) and | - | 16 | 16.5 | 17 | 17.5 | 18 |
| Thermal conductivity (W/m·K) | 15 | 17 | 18 | 19 | 20.5 | 22 |
| Electrical resistivity (Ω·mm²/m) | 0.73 | 0.80 | 1.00 | 1.15 | 1.22 | 1.25 |

WELDING

ACX 120 is suitable for all conventional welding techniques. The recommended consumable electrodes are:

| Shielded electrodes | Wires and rods | Hollow electrodes |
|---------------------|--|-------------------|
| E 19 9 | G 19 9 L (GMAW) W 19 9 L (GTAW) P 19 9 L (PAW) | T 19 9 L |
| 308L | S 19 9 L (SAW) 308L | 308L |

This grade does not require thermal treatment after welding. In welding processes with sensitization risk and exposition to severe corrosive media, it is more likely to suffer intergranular corrosion. In these cases ACX 150 or ACX 315 are recommended.

PITTING CORROSION

ACX 120 is successfully used in media where chloride concentration does not exceed 200 ppm.



CORROSION RESISTANCE ACX 120 shows good corrosion resistance in a wide range of applications. As an example, ACX 120 exhibits corrosion rates lower than 0.10 mm/year in the following media:

- 20% acetic acid at 80°C.
- 90% formic acid at 20°C.
- 20% phosphoric acid at 60°C.
- 20% nitric acid at 50°C.
- 90% sulphuric acid at 20°C.
- Toluene.
- Milk.
- Beer.
- Juice.
- Wine.

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 ACX 120 can be delivered according to EN, ASTM, ASME, AMS, QQS and MILS standard requirements.

ACX 120 is approved in compliance with:

- PED (Pressure Equipment Directive), DGRL 97/23/EG according to EN 10028-7 and AD2000 Merkblatt W2 and W10.
- Lloyd's Register of Shipping.

It complies with the European Directives:

- Food industry, RE 1935/2004.
- Hexavalent chromium, ROHS.
- Electrical instruments, ROHS.