



REFRACTORY AUSTENITIC STAINLESS STEEL ACX 350	
EN DESIGNATION	ASTM DESIGNATION
1.4845	310S
X8CrNi25-21	S31008

**DESCRIPTION** Refractory austenitic stainless steel ACX 350 has high mechanical resistance, toughness and excellent high-temperature oxidation resistance, as a result of its high chromium and nickel content. The low carbon level reduces carbide precipitation during welding or high temperature applications. It is more resistant to high-temperature oxidation than ACX 340.

**CHEMICAL COMPOSITION**

C	Si	Mn	P	S	Cr	Ni
≤0.080	≤0.75	≤2.00	≤0.035	≤0.015	24.00-26.00	19.00-21.00

**APPLICATIONS**

- Electric resistances
- Furnaces
- High-temperature applications
- Air heaters

**MECHANICAL PROPERTIES AFTER COLD ROLLING AND FINAL ANNEALING**

<b>R<sub>p0.2</sub></b>	> 240 N/mm <sup>2</sup>
<b>R<sub>m</sub></b>	540 - 700 N/mm <sup>2</sup>
<b>Elongation</b>	> 40%
<b>Hardness</b>	< 200 HB

**PHYSICAL PROPERTIES**

At 20°C it has a density of 7.9 kg/dm<sup>3</sup> and a specific heat of 500 J/kg·K

	20°C	200°C	400°C	600°C	800°C	1000°C
<b>Modulus of elasticity (GPa)</b>	200	186	173	157	130	-
<b>Mean coefficient of linear expansion between 20°C (10<sup>-6</sup> x K<sup>-1</sup>) and</b>	-	15,5	17	17.5	18.5	19
<b>Thermal conductivity (W/m·K)</b>	15	16	18	21	24	27
<b>Electrical resistivity (Ω·mm<sup>2</sup>/m)</b>	0.85	0.90	1.06	1.19	1.25	1.38

**WELDING**

The recommended consumable electrodes are:

Shielded electrodes	Wires and rods	Hollow electrodes
E 25 20	G 25 20 (GMAW) W 25 20 (GTAW)	T 25 20
ER 310	P 25 20 (PAW) S 25 20 (SAW)	ER 310
ER Ni Cr 3	ER 310 ER Ni Cr 3	ER Ni Cr 3

**CORROSION RESISTANCE**

These steels are optimized at high temperature. When used in other media, these steels are equivalent to any other general-purpose austenitic stainless steel.

**PITTING CORROSION**

As any Cr-Ni steel, ACX 350 can be successfully used in chloride media with a concentration not higher than 100 ppm.



### HIGH-TEMPERATURE OXIDATION RESISTANCE

As a result of their high chromium and nickel contents, these steels have high corrosion resistance at high temperature.

Maximum operating temperatures for ACX 350 in continuous working in different media are:

- (a) Oxidizing media 1100°C
- (b) Oxidizing media with sulphur 1000°C
- Carburizing reducing media 1000°C
- Sulphidizing reducing media 750°C

When the environment is not continuously oxidizing, the thermal death points are smaller than the ones above (a, b) and they depend on the cycling frequency. In any case they should not exceed 950°C.

It is recommended in case of thermal crash risk and it is better in carburizing media than ACX 340. It can also be used in fused salt baths.

### 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 350 austenitic stainless steel is included in the main international standards.

This grade can be supplied according to EN, ASTM, ASME, AMS, QQS and MILS standard requirements.

ACX 350 is approved in compliance with:

- PED (Pressure Equipment Directive) according to EN-10.095 and AD 2000 Merkblatt W2 and W10.
- Lloyd's Register of Shipping.

ACX 350 complies with the European Directives:

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