AUSTENITIC STAINLESS STEEL ACX 300	
EN DESIGNATION	ASTM DESIGNATION
1.4435	316L
X2CrNiMo18-14-3	S31603

DESCRIPTION

Cr-Ni-Mo austenitic stainless steels contain Mo to increase their resistance to localized corrosion. Low carbon contain allows their inclination to carbide precipitation when welding or in high temperature applications.

CHEMICAL COMPOSITION

C	Si	Mn	P	S	Cr	Ni	Mo	N
≤0.30	≤1.00	≤2.00	≤0.045	≤0.015	17.00 -18.00	12.50 -14.00	2.50-3.00	≤0.10

APPLICATIONS

Among others:
- Chemical and petrochemical industries
- Food, pharmaceutical and textile industries
- Tubing and boilermaking
- Vehicle tanks

MECHANICAL PROPERTIES IN ANNEALING STATUS EN 10088-2

	C	H	P
$Rp_{0.2}$	>240 N/mm²	>220 N/mm²	>220 N/mm²
Rm	550 - 700 N/mm²	550 - 700 N/mm²	520 - 670 N/mm²
Elongation	> 40%	> 40%	> 45%

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

PHYSICAL PROPERTIES

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AT 20ºC, it has a density of 8 kg/dm³ and specific heat of 500 J/kg·K

	20ºC	100ºC	200ºC	300ºC	400ºC	500ºC
Modulus of elasticity (GPa)	200	194	186	179	172	165
Mean coefficient of linear expansion between 20ºC (10^{-6} x K^{-1}) and	-	16	16.5	17	17.5	18
Thermal conductivity (W/m·K)	15	-	-	-	-	-
Electrical resistivity (Ω·mm²/m)	0.75	-	-	-	-	-

WELDING

ACX 300 shows good weldability, it can be welded using most of the usual methods such as SMAW, GTAW, GMAW, FCAW, SAW, LASER, ETC. Filling material should be of the same composition or higher alloys (AISI 316L).

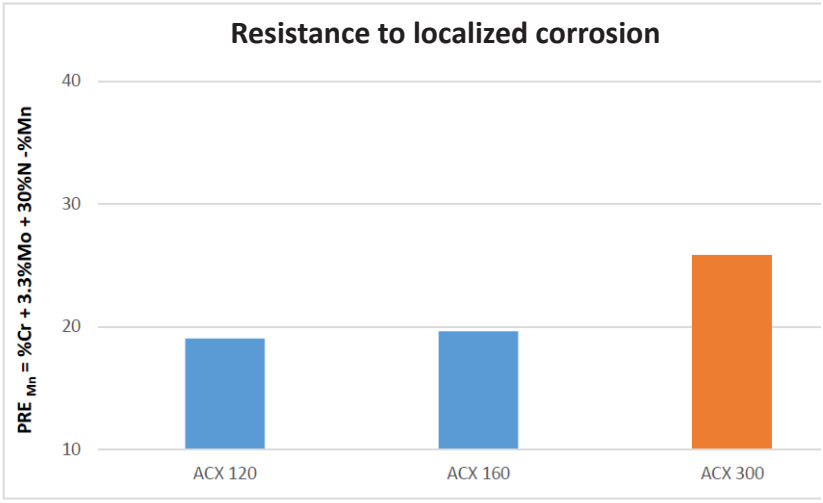
No thermal treatment is usually needed neither before nor after welding.

It is recommended to adjust the welding conditions in order to obtain fast enough cooling speeds to avoid any critical temperature ranges, therefore not to favour sensitization of the material.

The right chemical elements balance when welding is an advantage. Managing the correct selection of the filling material and the welding procedure, will result in fluid metal with some delta ferrite up to 10%.

CORROSION RESISTANCE

In general, Cr-Ni-Mo stainless steels perform better than Cr-Ni ones to localized corrosion.



SURFACE CLEANING

It is essential to follow some right cleaning practices regularly, in order to preserve the surface indefinitely and obtain the best performance of stainless steel.

For the correct cleaning, it is recommended the use of water and neutral soaps. These should be applied using a soft cloth or brush that do not cause any scratch on the surface. Then, always rinse with water to remove the cleaning agent completely. Finally, it might be dried to preserve a good superficial condition.

If the event of the application of chloride products, it must be followed by deep rinse with plenty of water.

SPECIFICATIONS

Cr-Ni-Mo austenitic stainless steels are included in the main international standards. They can be supplied according to ASME, AMS, QQS, MILS standard requirements.