AUSTENITIC STAINLESS STEEL ACX 305	
EN DESIGNATION	ASTM DESIGNATION
EN 1.4539	AISI 904L
X1NiCrMoCu25-20-5	-

DESCRIPTION

This is an austenitic stainless steel with low carbon and high nickel and molybdenum content. It presents high corrosion resistance, good weldability and excellent formability. It contains high chromium and nickel levels with molybdenum and copper in order to provide higher resistance in some environments. ACX 305 is produced with low carbon levels to use it in welded containers and other complex manufactures. It is useful in numerous industrial applications on account of its corrosion resistance, its durability and its high resistance.

CHEMICAL COMPOSITION

C	Si	Mn	P	S	Cr	Ni	Cu	N	Mo
≤0.020	0.35-0.55	≤2.00	≤0.025	≤0.003	19.00-20.00	24.30-24.80	1.30-1.60	≤0.30	4.15-4.35

APLICATIONS

- Chemical and petrochemical industry
- Paper and paper pulp industry
- Pipe systems
- Heat exchangers
- Components for treatment gas plants
- Components for desalination plants
- Food, pharmaceutical, and textile industry

MECHANICAL PROPERTIES IN ANNEALING STATE

EN 10088-2

	C	H	P
$R_{P0.2}$	> 240 N/mm²	> 220 N/mm²	> 220 N/mm²
Rm	530 - 730 N/mm²	530 - 730 N/mm²	520 - 720 N/mm²
Elongation	> 35%	> 35%	> 35%

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

PHYSICAL PROPERTIES

EN 10088-1

It has a density of 8.0/dm³ and specific heat of 450 J/kg·K, at 20ºC

	20ºC	100ºC	200ºC	300ºC	400ºC	500ºC
Modulus of elasticity (GPa)	195	190	182	174	166	158
Mean coefficient of linear expansion between 20ºC (10 x K)	-	15.8	16.1	16.5	16.9	17.3
Thermal conductivity (W/m·K)	12	-	-	-	-	
Electrical resistivity (Ω·mm²/m)	1.00	-	-	-	-	

WELDING

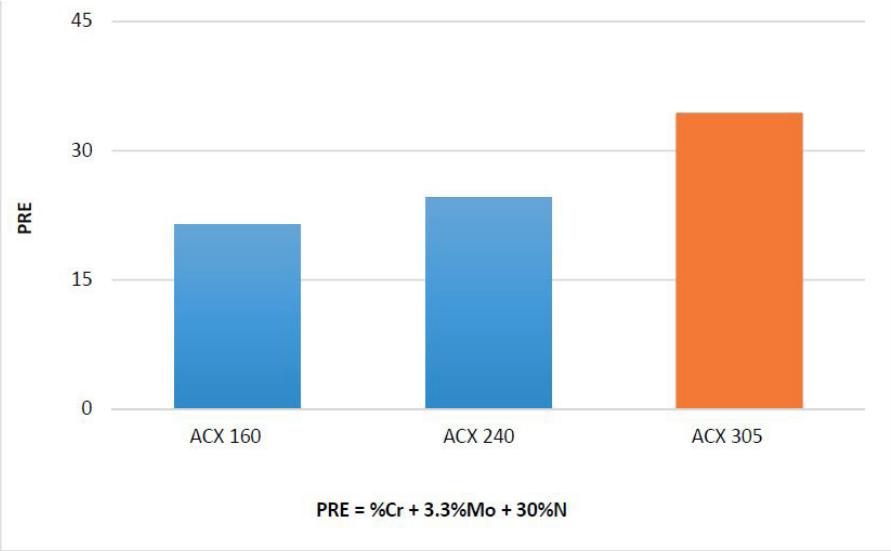
Austenitic high alloy steels are suitable for welding and conventional austenitic steels welding techniques can be also applied to ACX 305. Low heat contribution is highly recommended.

Recommended welding material for ACX 305 is ER 385 L (EN 20 25 5 Cu L).

CORROSION RESISTANCE

Due to high chromium, nickel and molybdenum content, ACX 305 stainless steel offers an excellent corrosion resistance. Cr-Ni-Mo austenitic stainless steel shows better generalized, located and atmospheric corrosion resistance than Cr-Ni stainless steel.

Compared with usual austenitic steels, its high molybdenum content confers superior resistance to located chlorides attack.



Its high nickel content provides good interstitial corrosion resistance.

High stress corrosion resistance.

Particularly, its copper addition confers good behaviour in contact to sulphuric acid.

SURFACE CLEANING

Adequate cleaning practices are essential to preserve surfaces indefinitely and obtain the best stainless steel performance.

For proper cleaning, it is recommended the use of water and neutral soap applied with a cloth or a brush without scratching the stainless steel. This process must end rinsing with water to obtain the complete cleaning product disposal. Abusive contact with chloride products is not advisable, even when this stainless steel is more chloride and halide resistant. If chlorine products are used, must be rinsed with plenty of water.

SPECIFICATIONS

Cr-Ni-Mo austenitic stainless steels are included in main international standards.

May be supplied according to standard requirements EN, ASTM, ASME, AMS, QQS, MILS.