



AUSTENITIC STAINLESS STEEL ACX 090 ACX 090	
DESIGNATION EN	ASTM DESIGNATION
1.4318	301LN
X2CrNiN18-7	S30153

DESCRIPTION ACX 090 is an austenitic stainless steel primarily intended for structural use. Its high mechanical properties in the annealed condition can be significantly increased through cold working. In both structural conditions (2B and 2H) they are superior to austenitic 18/8 grades, with which they share equivalent corrosion properties and weldability.

CHEMICAL COMPOSITION	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	N
	≤0,03	≤1,00	≤2,00	≤0,045	≤0,015	16,50-18,50	6,00-8,00	-	-	0,10-0,20

APPLICATIONS

- Structural components
- Construction industry
- Automotive parts
- Railway and trailer bodies

MECHANICAL PROPERTIES IN ANNEALED EN 10088-2	Value
Rp_{0,2}	≥ 350 N/mm ²
Rp_{1,0}	≥ 380 N/mm ²
Rm	650-850 N/mm ²
Elongation	≥ 35%
Max. Hardness	máx 200 HB

PHYSICAL PROPERTIES EN 10088-1 At 20°C it has 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
Módulo de elasticidad (GPa)	200	194	186	179	172	165
Coefficiente medio dilatación térmica entre 20°C (10⁻⁶ x K⁻¹) y	-	16	16,5	17	17,5	18
Conductividad térmica (W/m·K)	15	-	-	-	-	-
Resistividad eléctrica (Ω·mm²/m)	0,73	-	-	-	-	-

WELDABILITY ACX 090 has good weldability and can be welded using nearly all standard welding methods such as SMAW, GTAW, GMAW, FCAW, SAW, and laser welding. The risk of sensitization in the heat-affected zone is very low due to its low carbon content. The high level of hardening acquired by cold deformation can be significantly lost in the weld zone due to the effect of the heat applied to the weld. The welds do not require subsequent heat treatment, although they do require descaling and re-passivation.

It is recommended to use fillers of similar chemical composition or higher alloy, to ensure the Cr and Ni content of the deposited material (type AISI 308L). Pre-cleaning and preparation are important to ensure the correct weld finish.

It is also recommended to adjust the welding conditions to control the cooling rate. Abrupt cooling that may cause cracks and distortion should be avoided.

CORROSION RESISTANCE Its low carbon content ensures strong resistance to intergranular corrosion.

ACX 090 offers good corrosion resistance and is suitable for use in rural and urban environments when corrosion conditions are not severe (UNE-EN ISO 1993-1-4).

SURFACE MAINTENANCE Proper and periodic cleaning is essential to preserve stainless steel surfaces indefinitely and ensure optimal performance.

Recommended cleaning involves using water and neutral soaps applied with a cloth or brush that won't scratch the surface. Always finish by rinsing thoroughly with water to completely remove any cleaning product residues.

If chlorine-based products are used, they must be followed by abundant rinsing with water.



HIGH-TEMPERATURE OXIDATION RESISTANCE	<p>Por lo que respectan a la resistencia a la oxidación en aire, el comportamiento del ACX 090 es equivalente al del tipo AISI 304 debido a su bajo contenido en carbono, por lo que es posible su uso continuo hasta 900°C.</p> <p>No obstante, hay que tener en cuenta que los altos niveles de endurecimiento de los acabados 2H alcanzados por deformación en frío, se perderán por exposición a partir de los 400°C.</p>
SPECIFICATIONS	<p>Can be supplied in accordance with the requirements of EN, ASTM, and ASME standards.</p> <p>Complies with European directives:</p> <ul style="list-style-type: none">- Food Contact Materials, RE 1935/2004- Hexavalent Chromium, ROHS- Electrical and Electronic Equipment, ROHS

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