



Austenitic Stainless Steel NAS 101	
ASTM Designation	EN Designation
301	1.431
S30100	X10CrNi18-8

**DESCRIPTION**

NAS 101 austenitic stainless steel exhibits high toughness, corrosive atmosphere resistance and surface brightness. These make it an excellent choice for structural and decorative applications. Moreover, NAS 101 has good weldability properties and can be obtained annealed or with different hardness grades.

**CHEMICAL  
COMPOSITION**

C	Si	Mn	P	S	Cr	Ni
≤ 0.150	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	16.00-18.00	6.00 - 8.00

**APPLICATIONS**

- Architectural and automotive decorative elements
- Food industry
- Tableware, household
- Aeronautical components
- Railway cars and trucks superstructures
- Springs

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

UTS	75 ksi min
0.2% YS	30 ksi min
Elongation	40% min
Hardness	max 95 HRB

**PHYSICAL  
PROPERTIES**

At 68 °F, it has a density of 0.285 lb/in<sup>3</sup> and a specific heat of 0.12 Btu/lb/°F

Modulus of Elasticity (x10 <sup>6</sup> psi)	28
Coefficient of Thermal Expansion, 68-212°F, /°F	9.2 x10 <sup>-6</sup>
Thermal conductivity (Btu/hr•ft•°F)☐	9.4
Electrical resistivity (Micro ohm-in)	27.4

**WELDING**

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
308	S 19 9 L (SAW) 308 308L	308

**CORROSION  
RESISTENCE**

The corrosion resistance of NAS 101 is slightly lower than NAS 120. It is more likely to suffer intergranular corrosion. In case of carbide precipitation during welding processes NAS 150 is recommended. It is suitable for urban environments and food handling applications.

**HIGH  
TEMPERATURE  
OXIDATION  
RESISTANCE**

This stainless steel is not recommended at temperatures above 1600°F. The oxidation rate is highly affected by the atmosphere to which the material is exposed, warming and cooling cycles and structural design, therefore no general data is provided.

**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**

It can be delivered according to ASTM, ASME, EN standards requirements.