

Austenitic Stainless Steel NAS 601	
ASTM Designation	EN Designation
201	1.4372
S20100	X12CrMnNN17-7-5

**DESCRIPTION**

NAS 601 is a Cr-Ni-Mn austenitic stainless steel. It is an alternative to austenitic steels such as NAS 120 but with less nickel content, to be used in moderate corrosive applications. Its austenitic structure is ensured by the addition of nitrogen and manganese.

**CHEMICAL  
COMPOSITION**

C	Si	Mn	P	S	Cr	Ni	N
≤ 0.150	≤ 1.00	5.50-7.50	≤ 0.060	≤ 0.030	16.00-18.00	3.50 - 5.50	≤ 0.25

**APPLICATIONS**

- Kitchenware
- Catering industry

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

UTS	75 ksi min
0.2% YS	38 ksi min
Elongation	40% min
Hardness	max 95 HRB

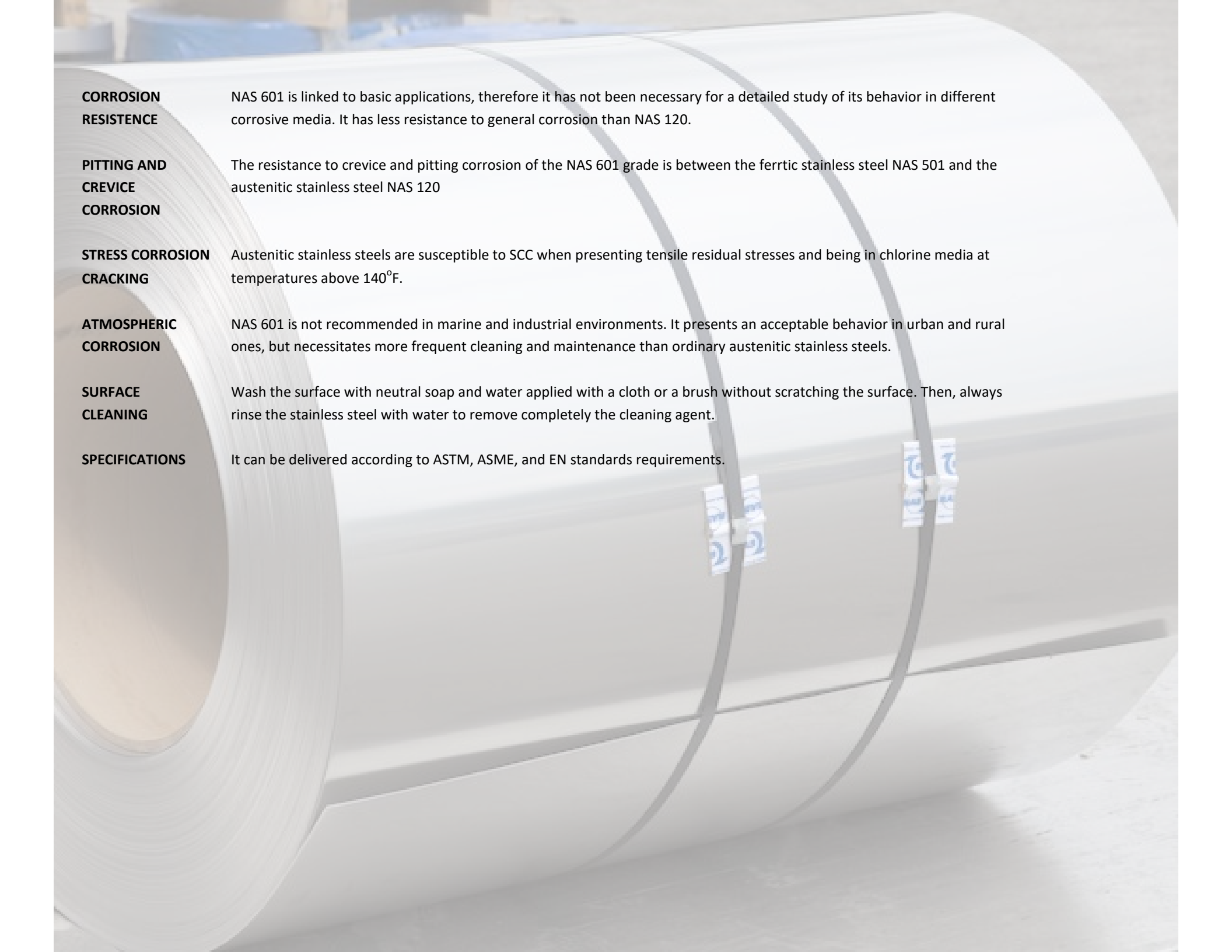
**PHYSICAL  
PROPERTIES**

At 68 °F, it has a density of 0.283 lb/in<sup>3</sup> and a specific heat of 0.12 Btu/lb/°F

Modulus of Elasticity (x10 <sup>6</sup> psi)	28.6
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**

Slightly lower weldability than NAS 120. It can be used with any welding method. AISI 308L as filler material can be used if necessary. Nitrogen content gases are recommended as protection. The heat-affected zone (HAZ) can be susceptible to intergranular corrosion.



**CORROSION  
RESISTENCE**

NAS 601 is linked to basic applications, therefore it has not been necessary for a detailed study of its behavior in different corrosive media. It has less resistance to general corrosion than NAS 120.

**PITTING AND  
CREVICE  
CORROSION**

The resistance to crevice and pitting corrosion of the NAS 601 grade is between the ferritic stainless steel NAS 501 and the austenitic stainless steel NAS 120

**STRESS CORROSION  
CRACKING**

Austenitic stainless steels are susceptible to SCC when presenting tensile residual stresses and being in chlorine media at temperatures above 140°F.

**ATMOSPHERIC  
CORROSION**

NAS 601 is not recommended in marine and industrial environments. It presents an acceptable behavior in urban and rural ones, but necessitates more frequent cleaning and maintenance than ordinary austenitic stainless steels.

**SURFACE  
CLEANING**

Wash the surface with neutral soap and water applied with a cloth or a brush without scratching the surface. Then, always rinse the stainless steel with water to remove completely the cleaning agent.

**SPECIFICATIONS**

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