Duplex Stainless Steel NAS 910	
ASTM Designation	EN Designation
2304	1.4362
S32304	X2CrNiN23-4

DESCRIPTION

NAS 910 is a low alloyed duplex (lean duplex) stainless steel having a microstructure with a phase balance of approximately 50% ferrite and 50% austenite that provides a yield strength and tensile strength higher than NAS 115 and NAS 273. As all duplex stainless steels, this grade is suitable for cold forming operations and has good corrosion resistance.

CHEMICAL COMPOSITION

C	Si	Mn	P	S	Cr	Ni	Mo	N
≤ 0.30	≤ 1.00	≤ 2.50	≤ 0.040	≤ 0.030	21.5-24.5	3.0 - 5.5	0.05 - 0.60	0.05 - 0.20

APPLICATIONS

- Paper industry
- Chemical Industry
- Food industry
- Mining industry
- Waste water treatment plants
- Structures
- Storage tanks

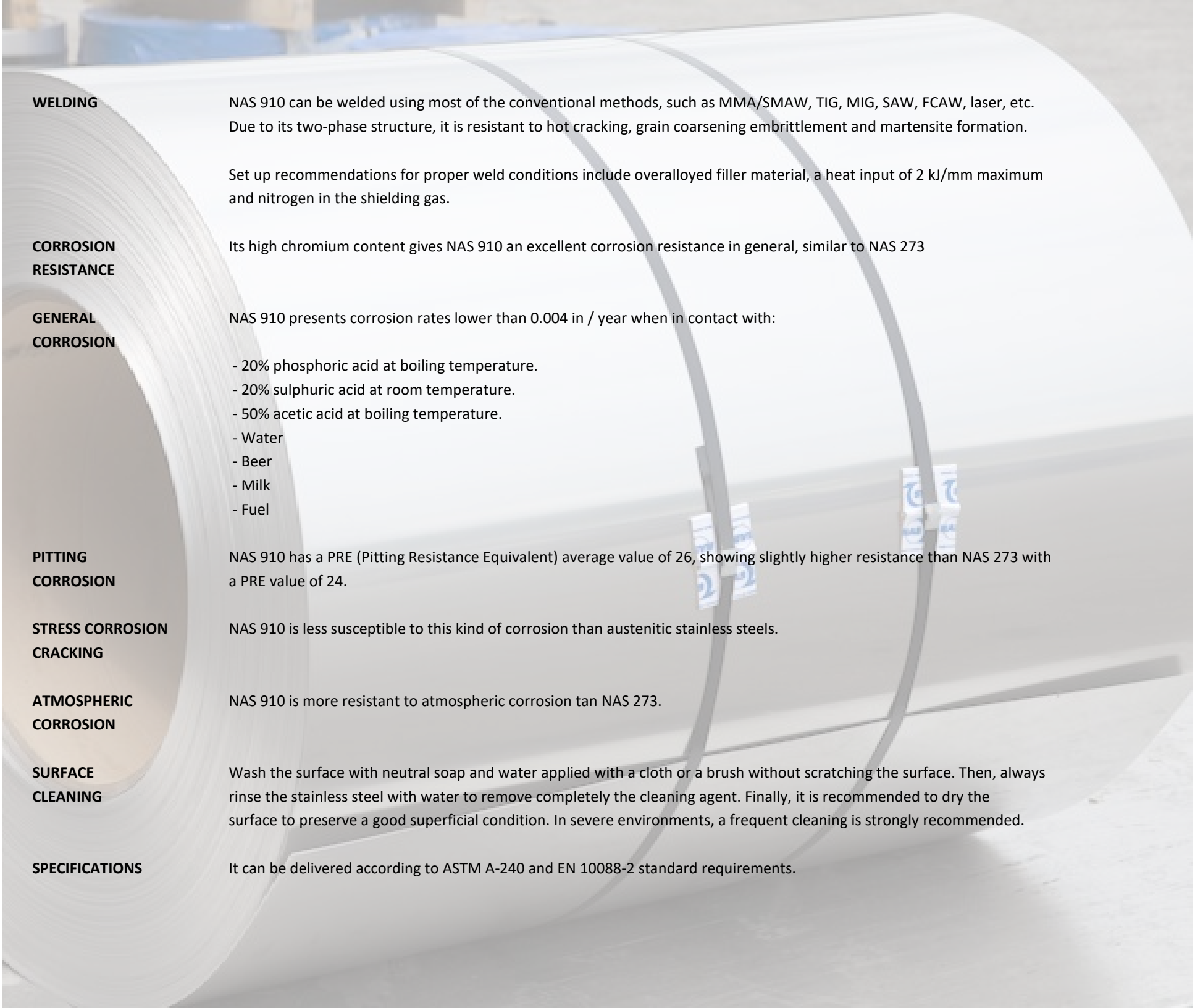
MECHANICAL PROERTIES AFTER COLD ROLLING AND FINAL ANNEALING

UTS	87 ksi min
0.2% YS	58 ksi min
Elongation	25% min
Hardness	max 32 HRC

PHYSICAL PROPERTIES

At 68 °F, it has a density of 0.280 lb/in^3 and a specific heat of 0.11 Btu/lb/°F

Modulus of Elasticity (x10^6 psi)	29.0
Coefficient of Thermal Expansion, 68-212˚F, /˚F	7.0 x 10^{-6}
Thermal conductivity (Btu/hr•ft•°F)	9.0
Electrical resistivity (Micro ohm-in)	33.5



WELDING	NAS 910 can be welded using most of the conventional methods, such as MMA/SMAW, TIG, MIG, SAW, FCAW, laser, etc. Due to its two-phase structure, it is resistant to hot cracking, grain coarsening embrittlement and martensite formation. Set up recommendations for proper weld conditions include overalloyed filler material, a heat input of 2 kJ/mm maximum and nitrogen in the shielding gas.
CORROSION RESISTANCE	Its high chromium content gives NAS 910 an excellent corrosion resistance in general, similar to NAS 273
GENERAL CORROSION	NAS 910 presents corrosion rates lower than 0.004 in / year when in contact with: - 20% phosphoric acid at boiling temperature. - 20% sulphuric acid at room temperature. - 50% acetic acid at boiling temperature. - Water - Beer - Milk - Fuel
PITTING CORROSION	NAS 910 has a PRE (Pitting Resistance Equivalent) average value of 26, showing slightly higher resistance than NAS 273 with a PRE value of 24.
STRESS CORROSION CRACKING	NAS 910 is less susceptible to this kind of corrosion than austenitic stainless steels.
ATMOSPHERIC CORROSION	NAS 910 is more resistant to atmospheric corrosion tan NAS 273.
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. 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 A-240 and EN 10088-2 standard requirements.