

Austenitic stainless steel grades AISI 310

General

AISI	EU code EN 10088	ASTM A 167/240
304H	X6CrNi18-10 / 1.4948	UNS30409
309(Si)	X15CrNi20-12 / 1.4828	UNS30900
309S	X12CrNi23-13 / 1.4833	UNS30908
309H	X12CrNi23-13	UNS30909
310(Si)	X15CrNiSi25-20 / 1.4841	UNS31000
310S	X12Cr-Ni25-20 / 1.4842	UNS31008
310H	X12Cr-Ni25-20	UNS31009
321H	X8CrNiTi18-10 / 1.4878	UNS32109

Characteristics

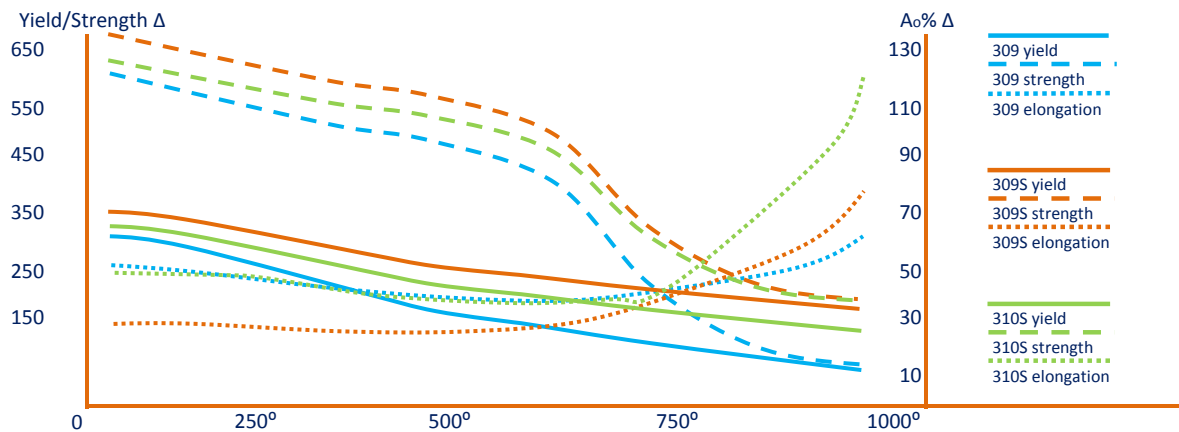
- Comply to max. temps of 1000°C (309 types) in air
- Comply to max. temps of 1100°C (310 types) in air
- Good resistance to carburizing
- Very high resistance to corrosion and oxidation
- Good weldability and formability
- Best mechanical properties rg. creep deformation
- AISI 310 grades comply to:
 - European Directive 2000/53/EC end-of-life vehicles
 - EU Material Safety Data Sheet n°1/2001/58/EC

Chemical

Elements %	C	N	S	Si	Mn	Cr	Ni	@ 100°C	R _m	R _e /R _p	A%	
309	1.4828	0.20	--	0.030	0.75	2.00	24.00	15.00	1.4828	600 (MPa)	275 (MPa)	48
309S	1.4833	0.08	--	0.030	0.75	2.00	24.00	15.00	1.4833	650 (MPa)	330 (MPa)	44
309Si	1.4828	0.20	0.11	0.015	2.50	2.00	21.00	13.00	1.4828	600 (MPa)	275 (MPa)	48
310	1.4841	0.25	--	0.030	1.50	2.00	26.00	22.00	1.4841	615 (MPa)	290 (MPa)	45
310S	1.4842	0.08	--	0.030	1.50	2.00	26.00	22.00	1.4842	615 (MPa)	300 (MPa)	42
310Si	1.4841	0.20	0.11	0.015	1.50	2.00	26.00	22.00	1.4841	615 (MPa)	290 (MPa)	45

Mechanical

Mechanical values @ elevated °C



Dimensions

Delivery range / forms of sheets, coils, blanks and strips

Cold rolled (CR finish 2B/2D)

Width (mm)	Thickness (mm)
1000	0.75, 1.0, 2.5, 5.0, 7.5
1250	0.75, 1.0, 2.5, 5.0, 7.5
1500	0.75, 1.0, 2.5, 5.0, 7.5
2000	0.75, 1.0, 2.5, 5.0, 7.5

Hot rolled (HR finish 1D/2E)

Width (mm)	Thickness (mm)
1000	3.0, 4.0, 5.0, 8.0, 12.0
1250	3.0, 4.0, 5.0, 8.0, 12.0
1500	3.0, 4.0, 5.0, 8.0, 12.0
2000	3.0, 4.0, 5.0, 8.0, 12.0

Applications

- Industrial and chemical engineering structures
- Road transport, f.e. tanks, bodies and trailers
- Heating, boilers, tanks and piping systems, for:
 - Naval industry and engineering
 - Chemical and pharmaceutical industry
 - Water-, oil- and gas industry and engineering

Metal working

- Good bending up to 180°; bending radii for $t < 0.8$
For $t > 0.8$ a bending radius of $\frac{1}{2} \times t$ is recommended
- Acceptable Limiting Drawing Ratios grade 310-series
- For welding, no preheat, nor postheating required
- Annealing @ 1050°C ± 25°C restores microstructures (recrystallisation) and eliminates internal stresses