

# Austenitic stainless steel

## grades

### AISI 316

#### General

NEN-EN approved types of austenitic stainless steel 316

AISI	EU code acc. EN 10088	UNS ASTM A 240
316	X5CrNiMo17-12-2 / 1.4401 X5CrNiMo17-13-2 / 1.4436	S31600
316L	X2CrNiMo17-12-2 / 1.4404 X2CrNiMo17-12-3 / 1.4432 X2CrNiMo18-14-3 / 1.4435	S31603
316LN	X2CrNiMoN17-12-2 / 1.4406	S31653
316Ti	X2CrNiMoTi17-12-2 / 1.4571	S31635
316H	X6CrNiMoB17-12-2 / 1.4919	S31661
317	X2CrNiMoN18-15-4 / 1.4449	S31700
317LN	X2CrNiMoN18-12-4 / 1.4434	S31753
317LMN	X2CrNiMoN17-13-5 / 1.4439	S31726
321	X6CrNiTi18-10 / 1.4541	S32100
347	X6CrNiNb18-10 / 1.4550	S34700

#### Chemical

Elements	%:	C	Si	Mn	Cr	Ni	Mo
316		0.080	0.75	2.00	16.80	10.10	2.10
316L		0.025	0.40	1.20	16.80	10.10	2.10
316Ti		0.035	0.40	1.20	16.80	10.70	2.10
317		0.080	1.00	2.00	18.20	11.15	--
321		0.045	0.40	1.10	17.15	9.10	--
347		0.080	0.75	2.00	18.20	11.15	--

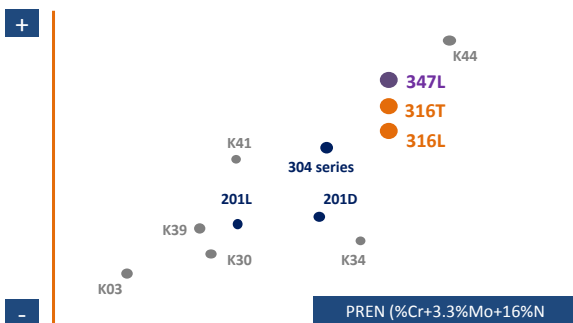
#### Mechanical

In annealed or tempered condition acc. ISO 6892-1, part 1

AISI	Grade	R <sub>m</sub>	R <sub>e</sub> /R <sub>p</sub>	A%
316	1.4401	550 (MPa)	250 (MPa)	45
316L	1.4404	620 (MPa)	300 (MPa)	52
316Ti	1.4571	600 (MPa)	300 (MPa)	50
317	1.4449	515 (MPa)	205 (MPa)	35
321	1.4541	600 (MPa)	270 (MPa)	50
347	1.4550	640 (MPa)	325 (MPa)	51

#### Corrosion

Our grades 316-series generally exhibit a good resistance to corrosion and recommended when there is a risk of intergranular corrosion. They meet the requirements of the standard tests defined by EN ISO 3651-2. Further-more they show excellent behavior in urban and rural atmospheres.



#### Characteristics

The principal characteristics stainless steel grades 316

- Comply to general metalworking and welding
- Good ductility, drawability and polish ability
- Very good resistance to:
  - pitting and crevice corrosion
  - intergranular corrosion after welding
  - corrosion due to acid- and chloride subs
- Stainless steel grades 316 comply to:
  - European Directive 2000/53/EC on end-of-life vehicles
  - Stainless EU Material Safety Data Sheet 1/2001/58/EC
  - Pressure Equipment Directory EN 10028-7/AD2000W2
  - NFA 36 711 standard Stainless steel c. wi. Foodstuffs
  - NSF/ANSI 51-2009 "Food Equipm. Mat." (F.D.A. appr.)
  - French Decree No.92-631 + Reg. No. 1935/2004 of EC
  - French Regulator jan-1976 / Italian Decree mar-1973

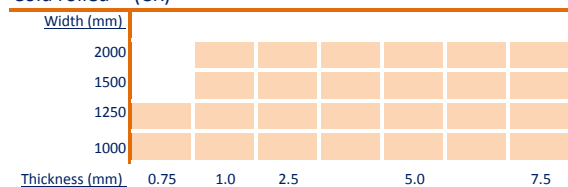
#### Applications

- Naval industry and engineering structures
- Cryogenic tanks, food storage- and dairy equipment
- Road transport, f.e. tanks, bodies and trailers
- Building structures, f.e. roofing, facade, profiles
- Water-, oil- and gas industry
- Farmaceutical- and chemical industry
- Paper industry

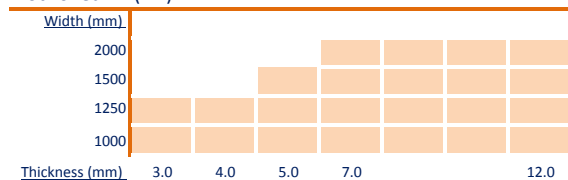
#### Dimensions

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

##### Cold rolled (CR)



##### Hot rolled (HR)



#### Surface

- CR finish 2B or 2D
- HR finish 1D or 2E

#### Forming

- Good bending up to 180°; av. radii for  $t < 0.8$  mm. for  $t > 0.8$  a bending radius of  $\frac{1}{2} \times t$  is recommended
- Stretching Ratio Index (EI) about  $\sim 11$  at  $t = 1$  mm.
- Acceptable Limiting Drawing Ratios grade 316-series