



MATERIAL No.: 1.4550

DESCRIPTION

EN symbol (short)	X6CrNiNb18-10	Density kg/dm³	7,9
AISI	AISI 347	Hardness HB	<=215
UNS	S 34700 Grade Tp347	Rockwell Hardness Number max.	B 90 (TP347-ASTM A 249)
AFNOR	X6CrNiNb18-10 NF EN 100088-1 (06/2005) (FR)	Composition	chromium nickel steel
BS	X6CrNiNb18-10 / B.S.EN 10088-1 (06-2005) (GB)	Category	Stainless steels steel, resistant to rust and acids
		Structure	austenitic
		Corrosion	good resistance to intercrystalline corrosion to ca750°F non-corroding
		Additional characteristics	chemically resistant

CHEMICAL COMPOSITION

		C	Mn	P	S	Cr	Si	Ni	Nb
1.4550	Min %					17,00		9,00	Nb (10 x C<=1,00)
	Max %	0,08	2,00	0,045	0,015	19,00	1,00	12,00	

(Key to steel 2010)

AISI 347	Min %					17,00		9,00	
S 34700	Max %	0,08	2,00	0,045	0,030	20,00	1,00	13,00	

ASTM A 312 (S 34700)-(AISI 347)

PHYSICAL PROPERTIES

Property	Value
Density: kg/dm³	7,9
Hardness: HB	<=215
Rockwell Hardness Number max.	B 90 (TP347-ASTM A 249)

temperature	1,0% Yield strength in high temperatures	0,2% Yield strength in high temperatures
°C / °F	Rp 1,0	Rp 0,2
	N/mm ² /ksi	N/mm ² /ksi
100 / 212	229 / 33,21	177 / 25,67
200 / 392	186 / 26,98	157 / 22,77
300 / 572	167 / 24,22	136 /19,72
400 / 752	156 / 22,62	125 / 18,13
500 / 932	149 / 21,60	118 / 17,11

ksi value calculated

MECHANICAL PROPERTIES (20°C / 68°F)

1 % Yield strength Rp1,0 (Mpa /ksi)	<=240 / 34,8		
Yield strength ksi (Mpa)	30 /205	solution annealed	TP 347 (ASTM A249)
0,2%Yield strength Rp 0,2 (Mpa /ksi)	<=205/ 29,7		
Tensile strength Rm (Mpa / ksi)	500-700 / 72,5- 101,5		
Tensile strength ksi (MPa)	75 /515	solution annealed	TP 347 (ASTM A249)
Elongationmin.(%)	35	lengthwise	
Elongation min.%	35		TP 347 (ASTM A249)
impact work ISO-V (J)	100/60		(lengthwise/ transverse)
ksi value calculated			

TEMPERATURE INFORMATION

Application area		
Operation temperature	-454 °F to 1652 °F	minimum operation temperature -454°F only in strain situation III
Solution heat treatment		
Working temperature	1868 °F to 2012 °F	
Explanation report	cool down: air / water	
Solution heat treatment		
Working temperature	2102 °F to 1292 °F	
Explanation report	cool down:air	

STANDARDS / INFORMATION

Standards	Description
ASTM A 182	Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges,Forged

	Fittings and Valves and Parts for High-Temperature Service
ASTM A 213	Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
ASTM A 249	Standard Specification for Welded austenitic steel boiler, Superheaters, heat-exchangers, and condenser Tubes
ASTM A 276	Rods and cross-sections made of stainless and heat-resistant steel
ASTM A 312	Standard Specification for Seamless and welded austenitic stainless steel pipes
ASTM A 403	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
DIN EN 10028-1 (09/2005)	flat products made from steel for pressure tanks Part 1 General requirements
DIN EN 10028-7 (02/2008)	flat products made from steel for pressure tanks Part 7: Stainless steel
DIN EN 10088-2 (09/2005)	stainless steel; sheet metal and ribbons out of corrosion resistant steel for general purposes
DIN EN 10216-5 (11/2004+B1)	Seamless steel tubes under compression load Stainless steel tubes
DIN EN 10217-7 (05/2005)	Welded steel tubes under compression load. Stainless steel tubes
DIN EN 10296-2 (02/2006)	welded circular steel pipes for machine construction and general technical applications, stainless steel
DIN EN 10297-2 (02/2006)	seamless circular steel pipes for machine construction and general technical applications, stainless steel

PROCESS INFORMATION

Welding

- Material classification acc. CEN ISO/TR 15608	8.1
- Type	well weldable WIG MAG solid wire manual arc welding (E)
- Add. material	1.4551;1.4316;1.4551
- Hints	special post heat treating not required

MAIN FIELDS OF APPLICATION

Details of application	certified for delivery acceptance obligating pressure containers in reference to AD data sheet W2
Certifications	
food processing industry	grounds for creamery
Chemical Industry	for processing nitric acid the production of acetic acid

crude oil	various plant parts
------------------	---------------------

RANGE OF PRODUCTS

Product type	Product
Plates / Sheets	plates/sheets plate/sheet cuts
Fittings	seamless elbows seamless reductions seamless T-pieces
Pipes / Tubes	seamless pipes/tubes
Bar steel	round bar steel

[Pipe/Tube/Fitting/Flange/Valve/Plate](#)

Stainless Steel/Nickel Alloy/Duplex

