

**High alloy steels**     **Austenitic / Ferritic steels**

Stooss specification	DIN material no.	Short specification according to DIN	EN specification	GB	USA		F	J	Chemical analysis in weight per cent    Upper and lower range													
					Type	UNS			C	Si	Mn	P	S	Cr	Ni	Mo	V	Al	Nb	Other		

**Austenitic chrome-nickel steels**

<b>4301</b>	1.4301	X 5 CrNi 18 10	X 5 CrNi 18 10	304S15	AISI 304	S30400	Z 6 CN 18 09	SUS 304	min.						18.00	8.50											N max. 0.100
	DIN 17440 / EN 10088-1 / Rustproof steel																										
<b>4306</b>	1.4306	X 2 CrNi 19 11	X 2 CrNi 19 11	304S11	AISI 304L	S30403	Z 2 CN 18 10	SUS 304L	min.						18.00	10.00											Cu max. 0.50 Ti max. 0.10 N max. 0.100 B max. 0.005
	DIN 17440 / EN 10088-1 / Rustproof steel																										
<b>4306 ESU</b>	1.4306	X 2 CrNi 19-11			AISI 304L	S30403	Z 2 CN 18 10		min.						18.00	10.00											N max. 0.100
	DIN 17440 / EN 10088-1 / Rustproof steel																										
<b>4541</b>	1.4541	X 6 CrNiTi 18 10	X 6 CrNiTi 18 18	321S31	AISI 321	S32100	Z 6 CNT 18 10	SUS 321	min.						17.00	9.00											N max. 0.100 Ti min. 5(C+N) max. 0.60
	DIN 17440 / EN 10088-1 / Rustproof steel / Parts for the foodstuff industry																										
<b>4435</b>	1.4435	X 2 CrNiMo 18 14 3	X 2 CrNiMo 18 14 3	316S13	AISI 316L	S31603	Z 3 CND 17 12 03	SUS 316L	min.						17.00	12.50	2.50										N max. 0.100 Ti max. 0.05 Co max. 0.20
	DIN 17440 / EN 10088-1 / Rustproof and acidproof steel / Parts for the textile industry / Fe content max. 0.5% (Basler Norm)																										
<b>4435 ESU</b>	1.4435	X 2 CrNiMo 18-14-3			AISI 316L	S31603	Z 3 CND 17 12 03		min.						17.00	12.50	2.50										N max. 0.100 Ti max. 0.05
	DIN 17440 / EN 10088-1 / Rustproof and acidproof steel / Parts for the textile industry																										
<b>4401</b>	1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12 2	316S31	AISI 316	S31600	Z 7 CND 17 11 02	SUS 316	min.	0.04					16.50	10.50	2.00										N max. 0.100 Ti max. 0.05 Co max. 0.20
	DIN 17440 / EN 10088-1 / Rustproof and acidproof steel / Parts and equipment for the chemical industry																										
<b>4571</b>	1.4571	X 6 CrNiMoTi 17 12 2	X 6 CrNiMoTi 17 12 2	320S31	AISI 316Ti	S31635	Z 6 CNDT 17 12	SUS 316 Ti	min.						16.50	11.00	2.00										Ti min. 5(C) max. 0.60
	DIN 17440 / EN 10088-1 / Rustproof and acidproof steel / Parts and equipment for the chemical and textile industries																										
<b>4429 ESU</b>	1.4429	X 2 CrNiMoN 17 13 3	X 2 CrNiMoN 17 13 3	316S63	AISI 316LN	S31653	Z 3 CND 17 12 Az	SUS 316 LN	min.						16.50	11.50	2.50										N 0.14-0.16
	DIN 17440 / EN 10088-1 / Rustproof steel / Parts for pressure vessel manufacture																										
<b>4563</b>	1.4563	X 1 NiCrMoCu 31 27 4	X 1 NiCrMoCu 31 27 4	X 1 NiCrMoCu 31 27 4	ASTM B668	N08028	Z 2 NCDU 31 27		min.						26.00	30.00	3.00										Cu 0.80-1.40
	DIN 17440 / EN 10088-1 / Rustproof steel / Parts for heat exchangers / Resistant to sulphuric and phosphoric acids containing Cl and S / Good resistance to localised and crevice corrosion.																										
<b>4539</b>	1.4539	X 1 NiCrMoCuN25 20 5	X 1 NiCrMoCuN25 20 5	904S13	ASTM A240	N08904	Z 2 NCDU 25 20		min.		0.30	0.50			19.00	24.00	4.00										Cu 1.00-2.00 N 0.050-0.150
	DIN 17440 / EN 10088-1 / Rustproof steel / Parts for heat exchangers / Resistant to sulphuric and phosphoric acids containing Cl and S / Good resistance to localised and stress corrosion.																										
<b>A182F44</b>	1.4547	X 1 CrNiMoCuN 20 18 7	X 1 CrNiMoCuN 20 18 7	X 1 CrNiMoCuN 20 18 7	A182 F44	S31254	X 1 CrNiMoCuN 20 18 7		min.						19.50	17.50	6.00										Cu 0.50-1.00 N 0.18-0.22
	ASTM A182 / Rustproof steel / Parts for valves. / (254SMO)																										
<b>A316L</b>	1.4404	X 2 CrNiMo 17 12 2	X 2 CrNiMo 17 12 2	316S11	A182 F 316L	S31603	Z 3 CND 17 11 02	SUS F316L	min.						16.50	11.00	2.00										Co max. 0.20 Ti max. 0.05 N max. 0.100
	ASTM A182 / DIN 17440 / Rustproof steel / Parts for valves, pressure vessels, heat exchangers																										
<b>F316LN M1</b>	(1.4406)	X 2 CrNiMoN 17 11 2	X 2 CrNiMoN 17 11 2	316S61	A182 F316LN		Z 3 CND 17 11 Az	SUS F316LN	min.						16.00	10.00	2.00										N 0.05 Co max. 0.20 Ti max. 0.01
	ASTM A182 / Modified analysis for valve parts																										
<b>4988</b>	1.4988	X 8 CrNiMoVNb 16 13							min.	0.04	0.30	1.10			16.00	13.00	1.20	0.60			0.40						N max. 0.100 Cu max. 0.30 Al max. 0.01
	DIN 17460 / EN 10088-1																										

**Other chrome-nickel steels**

<b>4313</b>	1.4313	X 5 CrNi 13 4	X 3CrNi 13 4	425C11	ASTM 182 F6NM	S41500	Z 6 CN 13 04	SCS 5	min.	0.025	0.20	0.50			12.50	4.00	0.50		0.010							Co max. 0.20 Cu max. 0.20 N 0.020-0.040 Ti max. 0.050
	DIN 17440 / EN 10088 / SEW 400 / Rustproof steel / Good for welding / Power station and reactor manufacture / Turbine rotor disks, compressor and pump wheels																									
<b>4313 M1</b>	1.4313	Modified analysis		425C11	CA6NM	S41500	Z 6 CN 13 04		min.	0.015	0.30	0.50			12.50	3.75	0.50		0.010							Co max. 0.10 Cu max. 0.20 N 0.010-0.035 Ti max. 0.050 C+N max. 0.055
	Vd TÜV Bl. 395 / ASTM 182 F6NM / NACE MR-01-75 / Hardness HRC max. 23 / HB max. 255																									
<b>4418</b>	1.4418	X 4 CrNiMo 16 5 1	X 4 CrNiMo 16 5 1	X 4 CrNiMo 16 5 1		S45000	Z 6 CND 16 5 1		min.	0.020	0.15	0.50			15.00	5.00	0.80									N 0.040-0.080
	SEW 400 / EN 10088 / Rustproof and acidproof steel / Centrifuge and pump manufacture / Resistant to H2O corrosion																									
<b>4462 M1</b>	1.4462	X 2 CrNiMoN 22 5 3			ASTM A182 F51	S31803	Z 3 CND 22 05 Az	SUS 329J3L	min.						21.00	4.50	2.50									N 0.150-0.200 Ti max. 0.010
	Vd TÜV sheet 418 / Duplex steel / PRE min. 35																									
<b>4462 M2</b>	1.4462	Modified analysis							min.						23.50	5.00	3.20	0.08								N 0.190-0.250
	Vd TÜV sheet 418 / Duplex steel / PRE min. 37.5																									
<b>A564T630</b>	(1.4542)	X 5 CrNiMoCuNb 16 4	X 5 CrNiMoCuNb 16 4	X 5 CrNiMoCuNb 16 4	A564T630	S17400	X5CrNiMoCuNb 16 4	SUS 630	min.	0.020		0.50			15.00	3.00				0.20						Cu 3.00-5.00 Nb+Ta 0.20-0.45 Ti max. 0.020 N 0.020-0.040 Co max. 0.10 C+N max. 0.080
	ASTM A564 / EN 10088 / Rustproof steel / 17-4 PH																									
<b>S 32750</b>	(1.4410)	X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4	ASTM A182 F53	S32750	Z 5CND20.10M	SCS 14A	min.		0.30	0.60			25.30	6.70	3.50									Cu max. 0.50 N 0.240-0.300 Ti max. 0.010
	ASTM A182 / SABS 1874 / API 6a / SAF 2507 / Super duplex steel / PRE min. 42																									
<b>S 32760</b>	(1.4501)	X2CrNiMoCuWN2574	X2CrNiMoCuWN2574	X2CrNiMoCuWN2574	ASTM A182 F55	S32760	X2CrNiMoCuWN2574		min.						24.00	6.00	3.00									Cu 0.50-1.00 W 0.50-1.00 N 0.200-0.300
	ASTM A182 / SABS M1788/89 / API 6a / NACE MR-01-75 / ZERON 100 / Super duplex steel / PRE min. 41																									