

MALZEME KARŞILAŞTIRMA DIN / EN / ASME

Borular				Flanşlar				Kaynak Ağızlı Fittingler			
Malzeme No		EN	ASTM	Malzeme No		EN	ASTM	Malzeme No		EN	ASTM
Alaşımsız				Alaşımsız				Alaşımsız			
1.0254	St 37.0	P235TR1	A 53 Grade A	1.0038	RSt 37-2	S235JR	–	1.0254	St 37.0	S235	–
1.0570	St 52-3	S355J2H (1.0576)	–	1.0570	St 52-3	S355J2 (1.0577)	–	–	–	–	–
1.0305	St 35.8/I	P235GH TC1 (1.0345)	A 106 Grade A	1.0460	C 22.8	P250GH	–	1.0305	St 35.8/I	P235GH (1.0345)	A 234 Grade WPA
1.0305	St 35.8/III	P235GH TC2 (1.0345)	–	1.0432	C 21	–	A 105	1.0305	St 35.8/III	P235GH (1.0345)	–
1.0405	St 45.8/I	P265GH TC1 (1.0425)	A 106 Grade B	1.0352	–	P245GH	–	1.0405	St 45.8/I	P265GH (1.0425)	A 234 Grade WPB
1.0405	St 45.8/III	P265GH TC2 (1.0425)	–	–	–	–	–	1.0405	St 45.8/III	P265GH (1.0425)	–
Alaşımli – Sıcığa dayanıklı				Alaşımli – Sıcığa dayanıklı				Alaşımli – Sıcığa dayanıklı			
1.5415	15 Mo 3	16Mo3	A 335 Grade P1	1.5415	15 Mo 3	16Mo3	A 182 Grade F 1	1.5415	15 Mo 3	16Mo3	A 234 Grade WP1
1.7335	13 CrMo 4 4	13CrMo4–5	A 335 Grade P11, P12	1.7335	13 CrMo 4 4	13CrMo4-5	A 182 Grade F11, F12	1.7335	13 CrMo 4 4	13CrMo4-5	A 234 Grade WP11, WP12
1.7380	10 CrMo 9 10	10CrMo9–10	A 335 Grade P22	1.7380	10 CrMo 9 10	11CrMo9-10 (1.7383)	A 182 Grade F22	1.7380	10 CrMo 9 10	10CrMo9-10	A 234 Grade WP22
1.7362	12 CrMo 19 5	X11CrMo5	A 335 Grade P5	1.7362	12 CrMo 19 5	–	A 182 Grade F5	1.7362	12 CrMo 19 5	X11CrMo5	A 234 Grade WP5
–	–	–	A 335 Grade P9	–	–	–	A 182 Grade F9	–	–	–	A 234 Grade WP9
1.4903	–	X10CrMoVNb9–1	A 335 Grade P91	1.4903	–	X10CrMoVNb9-1	A 182 Grade F91	1.4903	–	X10CrMoVNb9-1	A 234 Grade WP91
Soğuk Çekme — Düşük sıcaklık				Soğuk Çekme — Düşük sıcaklık				Soğuk Çekme — Düşük sıcaklık			
1.5637	10 Ni 14	X12Ni14	A 333 Grade 3	1.5637	10 Ni 14	12Ni14	A 350 Grade LF3	1.5637	10 Ni 14	12Ni14	A 420 Grade WPL3
1.0356	TTSt 35 N	P215NL (1.0451)	A 333 Grade 1	1.0566	TSSt 355	P355QH1 (1.0571)	A 350 Grade LF2	1.0356	TTSt 35 N	P215NL (1.0451)	–
1.0356	TTSt 35 V	P255QL (1.0452)	–	–	–	–	–	1.0356	TTSt 35 V	–	–
–	–	P265NL (1.0453)	A 333 Grade 6	–	–	–	–	–	–	P265NL (1.0453)	A 420 Grade WPL6
İnce Taneli Yapı Çeliği				İnce Taneli Yapı Çeliği				İnce Taneli Yapı Çeliği			
1.0486	StE 285	–	API 5L Grade X42	1.0486	StE 285	–	A 694 Grade F42	1.0486	StE 285	–	A 860 Grade WPHY42
1.0562	StE 355	P355N	API 5L Grade X52	1.0562	StE 355	P355N	A 694 Grade F52	1.0562	StE 355	P355N	A 860 Grade WPHY52
1.8902	StE 420	P420N	API 5L Grade X60	1.8902	StE 420	P420N	A 694 Grade F60	1.8902	StE 420	–	A 860 Grade WPHY60
1.8905	StE 460	P460N	API 5L Grade X70	1.8905	StE 460	P460N	A 694 Grade F70	1.8905	StE 460	–	A 860 Grade WPHY70
Çelik Hat Boruları				Çelik Hat Boruları				Çelik Hat Boruları			
1.0457	StE 240.7	L245NB	API 5L Grade B	–	–	–	–	1.0457	StE 240.7	–	–
1.0484	StE 290.7	L290NB	API 5L Grade X42	–	–	–	–	1.0484	StE 290.7	L290NB	A 860 Grade WPHY42
1.0582	StE 360.7	L360NB	API 5L Grade X52	–	–	–	–	1.0582	StE 360.7	L360NB	A 860 Grade WPHY52
1.8972	StE 415.7	L415NB	API 5L Grade X60	–	–	–	–	1.8972	StE 415.7	L415NB	A 860 Grade WPHY60
Paslanmaz Çelik				Paslanmaz Çelik				Paslanmaz Çelik			
1.4307	–	X2CrNi18-9	A 312 Grade TP304L	1.4307	–	X2CrNi18-9	A 182 Grade F304L	1.4307	–	X2CrNi18-9	A 403 Grade WP304L
1.4306	X 2 CrNi 19 11	X2CrNi19-11	A 312 Grade TP304L	1.4306	–	–	–	1.4306	X 2 CrNi 19 11	X2CrNi19-11	A 403 Grade WP304L
1.4301	X 5 CrNi 18 10	X5CrNi18-10	A 312 Grade TP304	1.4301	X 5 CrNi 18 10	X5CrNi18-10	A 182 Grade F304	1.4301	X 5 CrNi 18 10	X5CrNi18-10	A 403 Grade WP304
1.4541	X 6 CrNiTi 18 10	X6CrNiTi18-10	A 312 Grade TP321	1.4541	X 6 CrNiTi 18 10	X6CrNiTi18-10	A 182 Grade F321	1.4541	X 6 CrNiTi 18 10	X6CrNiTi18-10	A 403 Grade WP321
1.4550	X 6 CrNiNb 18-10	X6CrNiNb18-10	A 312 Grade TP347	1.4550	X 6 CrNiNb 18-10	X6CrNiNb18-10	A 182 Grade F347	1.4550	X 6 CrNiNb 18-10	X6CrNiNb18-10	A 403 Grade WP347
1.4404	X 2 CrNiMo 17 13 2	X2CrNiMo17-12-2	A 312 Grade TP316L	1.4404	X 2 CrNiMo 17 13 2	X2CrNiMo17-12-2	A 182 Grade F316L	1.4404	X 2 CrNiMo 17 13 2	X2CrNiMo17-12-2	A 403 Grade WP316L
1.4401	X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2	A 312 Grade TP316	1.4401	X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2	A 182 Grade F316	1.4401	X 5 CrNiMo 17 12 2	X5CrNiMo17-12-2	A 403 Grade WP316
1.4571	X 6 CrNiMoTi 17 12 2	X6CrNiMoTi17-12-2	A 312 Grade S 31635	1.4571	X 6 CrNiMoTi 17-12-2	X6CrNiMoTi17-12-2	A 182 Grade F316Ti	1.4571	X 6 CrNiMoTi 17 12 2	X6CrNiTi18-10	–
1.4429	X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3	A 312 Grade TP316LN	1.4429	X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3	A 182 Grade F316LN	1.4429	X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3	A 403 Grade WP316LN
1.4436	X 5 CrNiMo 17 13 3	X3CrNiMo17-13-3	A 312 Grade TP316	1.4436	X 5 CrNiMo 17 13 3	X3CrNiMo17-13-3	A 182 Grade F316	1.4436	X 5 CrNiMo 17 13 3	X3CrNiMo17-13-3	A 403 Grade WP316
1.4435	X 2 CrNiMo 18 14 3	X2CrNiMo18-14-3	A 312 Grade TP316L	1.4435	X 2 CrNiMo 18 14 3	X2CrNiMo18-14-3	A 182 Grade F316L	1.4435	X 2 CrNiMo 18 14 3	X2CrNiMo18-14-3	A 403 Grade WP316LN
1.4439	X 2 CrNiMoN 17 13 5	X2CrNiMoN17-13-5	UNS S 31726	1.4439	X 2 CrNiMoN 17 13 5	X2CrNiMoN17-13-5	A 182 Grade F48	1.4439	X 2 CrNiMoN 17 13 5	X2CrNiMoN17-13-5	UNS S 31726
1.4539	X 1 NiCrMoCuN 25 20 5	X1NiCrMoCu25-20-5	UNS N 08904 (904L)	1.4539	X 1 NiCrMoCuN 25 20 5	X1NiCrMoCu25-20-5	A 182 Grade F904L	1.4539	X 1 NiCrMoCuN 25 20 5	X1NiCrMoCu25-20-5	UNS N 08904 (904L)
1.4547	–	X1CrNiMoCuN20-18-7	UNS S 31254	1.4547	–	X1CrNiMoCuN20-18-7	UNS S 31254	1.4547	–	X1CrNiMoCuN20-18-7	UNS S 31254
1.4529	X 1 NiCrMoCuN 25 20 6	X1NiCrMoCuN25-20-7	UNS N 08926	1.4529	X 1 NiCrMoCuN 25 20 6	X1NiCrMoCuN25-20-7	UNS N 08926	1.4529	X 1 NiCrMoCuN 25 20 6	X1NiCrMoCuN25-20-7	UNS N 08926
1.4462	X 2 CrNiMoN 22 5 3	X2CrNiMoN22-5-3	UNS S 31803 (Duplex)	1.4462	X 2 CrNiMoN 22 5 3	X2CrNiMoN22-5-3	A 182 Grade F51 (Duplex)	1.4462	X 2 CrNiMoN 22 5 3	X2CrNiMoN22-5-3	UNS S 31803 (Duplex)
1.4410	–	X2CrNiMoN25-7-4	UNS S 32750 (Superduplex)	1.4410	–	X2CrNiMoN25-7-4	A 182 Grade F53 (Superduplex)	1.4410	–	X2CrNiMoN25-7-4	UNS S 32750 (Superduplex)

ET KALINLIĞI TABLOSU DIN / ISO / EN / ASME

NPS		Dış Çap inç ve mm				DIN / ISO Et Kalınlığı					DIN EN 10253-2'ye göre Et Kalınlığı Serisi								ASME B 36.10'a göre Et Kalınlığı Paslanmaz Et Kalınlığı Serisi 5S,10S, 40S, 80S																	
DN	INCH	DIN	ISO	EN	ASME	1	2	3	4	5	1	2	3	4	5	6	7	8	5 S	5	10 S	10	20	30	40 S	STD	40	60	80S	XS	80	100	120	140	160	XXS
15	½"	20.0	21.3	21.3	21.3	1.6	-	2.0	3.2	4.0	-	2.0	2.6	3.2	4.0	-	5.0	7.1	1.65	1.65	2.11	2.11	-	2.41	2.77	2.77	2.77	-	3.73	3.73	3.73	-	-	-	4.78	7.47
20	¾"	25.0	26.9	26.9	26.7	1.6	-	2.3	3.2	4.0	-	2.3	2.6	3.2	4.0	4.5	5.6	8.0	1.65	1.65	2.11	2.11	-	2.41	2.87	2.87	2.87	-	3.91	3.91	3.91	-	-	-	5.56	7.82
25	1"	30.0	33.7	33.7	33.4	2.0	-	2.6	3.2	4.0	-	2.6	3.2	4.0	4.5	5.6	6.3	8.8	1.65	1.65	2.77	2.77	-	2.90	3.38	3.38	3.38	-	4.55	4.55	4.55	-	-	-	6.35	9.09
32	1¼"	38.0	42.4	42.4	42.2	2.0	-	2.6	3.6	4.0	-	2.6	3.6	4.0	5.0	6.3	8.0	10.0	1.65	1.65	2.77	2.77	-	2.97	3.56	3.56	3.56	-	4.85	4.85	4.85	-	-	-	6.35	9.70
40	1½"	44.5	48.3	48.3	48.3	2.0	-	2.6	4.0	5.0	-	2.6	3.6	4.0	5.0	6.3	8.0	10.0	1.65	1.65	2.77	2.77	-	3.18	3.68	3.68	3.68	-	5.08	5.08	5.08	-	-	-	7.14	10.15
50	2"	57.0	60.3	60.3	60.3	2.0	-	2.9	4.5	5.6	-	2.9	3.6	4.0	5.6	7.1	8.8	11.0	1.65	1.65	2.77	2.77	-	3.18	3.91	3.91	3.91	-	5.54	5.54	5.54	-	-	-	8.74	11.07
-	2½"	-	-	-	73.0	-	-	-	-	-	-	2.9	3.6	4.5	7.1	-	-	14.2	2.11	2.11	3.05	3.05	-	4.78	5.16	5.16	5.16	-	7.01	7.01	7.01	-	-	-	9.53	14.02
65	-	76.1	76.1	76.1	-	2.3	-	2.9	5.0	7.1	-	2.9	3.6	5.6	7.1	8.0	10.0	14.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
80	3"	88.9	88.9	88.9	88.9	2.3	-	3.2	5.6	8.0	-	3.2	4.0	5.6	8.0	8.8	11.0	16.0	2.11	2.11	3.05	3.05	-	4.78	5.49	5.49	5.49	-	7.62	7.62	7.62	-	-	-	11.13	15.24
-	3½"	-	-	101.6	101.6	-	-	-	-	-	-	3.6	4.0	5.6	8.0	-	-	-	2.11	2.11	3.05	3.05	-	4.78	5.74	5.74	5.74	-	8.08	8.08	8.08	-	-	-	-	-
100	4"	108.0	114.3	114.3	114.3	2.6	-	3.6	6.3	8.8	-	3.6	4.5	6.3	8.8	11.0	14.2	17.5	2.11	2.11	3.05	3.05	-	4.78	6.02	6.02	6.02	-	8.56	8.56	8.56	-	11.13	-	13.49	17.12
125	-	133.0	139.7	139.7	-	2.6	-	4.0	6.3	10.0	-	4.0	5.0	6.3	10.0	12.5	16.0	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	5"	-	-	-	141.3	-	-	-	-	-	-	4.0	5.4	6.3	10.0	-	16.0	20.0	2.77	2.77	3.40	3.40	-	-	6.55	6.55	6.55	-	9.53	9.53	9.53	-	12.70	-	15.88	19.05
150	6"	159.0	168.3	168.3	168.3	2.6	4.0	4.5	7.1	11.0	4.0	4.5	5.6	7.1	11.0	14.2	17.5	22.2	2.77	2.77	3.40	3.40	-	-	7.11	7.11	7.11	-	10.97	10.97	10.97	-	14.27	-	18.26	21.95
200	8"	216.0	219.1	219.1	219.1	2.9	4.5	6.3	8.0	12.5	4.5	6.3	7.1	8.0	12.5	16.0	17.5	22.2	2.77	2.77	3.76	3.76	6.35	7.04	8.18	8.18	8.18	10.31	12.70	12.70	12.70	15.09	18.26	20.62	23.01	22.23
250	10"	267.0	273.0	273.0	273.0	2.9	5.0	6.3	8.8	14.2	5.0	6.3	8.8	10.0	12.5	16.0	22.2	30.0	3.40	3.40	4.19	4.19	6.35	7.80	9.27	9.27	9.27	12.70	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40
300	12"	318.0	323.9	323.9	323.8	2.9	5.6	7.1	10.0	16.0	5.6	7.1	8.8	10.0	12.5	17.5	25.0	32.0	3.96	3.96	4.57	4.57	6.35	8.38	9.53	9.53	10.31	14.27	12.70	12.70	17.48	21.44	25.40	28.58	33.32	25.40
350	14"	368.0	355.6	355.6	355.6	3.2	5.6	8.0	11.0	17.5	5.6	8.0	10.0	12.5	16.0	20.0	28.0	36.0	3.96	3.96	4.78	6.35	7.92	9.53	9.53	9.53	11.13	15.09	12.70	12.70	19.05	23.83	27.79	31.75	35.71	-
400	16"	419.0	406.4	406.4	406.4	3.2	6.3	8.8	12.5	20.0	6.3	8.8	10.0	12.5	17.5	22.2	30.0	40.0	4.19	4.19	4.78	6.35	7.92	9.53	9.53	9.53	12.70	16.66	12.70	12.70	21.44	26.19	30.96	36.53	40.49	-
450	18"	470.0	457.0	457.0	457.0	4.0	6.3	10.0	14.2	22.2	6.3	10.0	11.0	12.5	17.5	22.2	32.0	45.0	4.19	4.19	4.78	6.35	7.92	11.13	9.53	9.53	14.27	19.05	12.70	12.70	23.83	29.36	34.93	39.67	45.24	-
500	20"	521.0	508.0	508.0	508.0	4.0	6.3	11.0	16.0	25.0	6.3	10.0	11.0	12.5	17.5	25.0	36.0	50.0	4.78	4.78	5.54	6.35	9.53	12.70	9.53	9.53	15.09	20.62	12.70	12.70	26.19	32.54	38.10	44.45	50.01	-
600	24"	622.0	610.0	610.0	610.0	5.0	6.3	12.5	17.5	30.0	6.3	10.0	12.5	17.5	25.0	30.0	45.0	60.0	5.54	5.54	6.35	6.35	9.53	14.27	9.53	9.53	17.48	24.61	12.70	12.70	30.96	38.89	46.02	52.37	59.54	-
700	28"	720.0	711.0	711.0	711.0	5.0	7.1	12.5	-	-	7.1	10.0	12.5	25.0	-	-	-	-	-	-	-	-	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-
750	30"	-	-	762.0	762.0	-	-	-	-	-	-	10.0	12.5	25.0	-	-	-	-	6.35	6.35	7.92	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-	
800	32"	820.0	813.0	813.0	813.0	5.6	8.0	12.5	-	-	8.0	10.0	12.5	25.0	-	-	-	-	-	-	-	7.92	12.70	15.88	-	9.53	17.48	-	-	12.70	-	-	-	-	-	
900	36"	920.0	914.0	914.0	914.0	6.3	10.0	12.5	-	-	10.0	12.5	20.0	25.0	-	-	-	-	-	-	-	7.92	12.70	15.88	-	9.53	19.05	-	-	12.70	-	-	-	-	-	
1000	40"	1020.0	1016.0	1016.0	1016.0	6.3	10.0	12.5	-	-	10.0	12.5	20.0	25.0	-	-	-	-	-	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	
1200	48"	-	1220.0	1219.0	1219.0	6.3	12.5	-	-	-	10.0	12.5	20.0	25.0	-	-	-	-	-	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	

- EN Seri 1 = DN 1000 DIN/ISO Seri 2'ye uygun standart kaynak ağızlı dikişli karbon çelikler.
- EN Seri 2 = DN 450 DIN/ISO Seri 3'e uygun standart kaynak ağızlı dikişsiz karbon çelikler.
- EN Seri 3 = Yeni et kalınlığı serisi DIN 2448, DIN/ISO Seri 4 altında, DN 500-DN 800 DIN/ISO Seri 3 dahilinde.
- EN Seri 4 = DIN/ISO Seri 4 ile benzer.
- EN Seri 5 = DIN/ISO Seri 5 ile benzer.
- EN Serileri = Yeni et kalınlığı serisi, oldukça kalın etli, bazı bölgelerde ASME ile benzerlik göstermekte.
- DIN EN 10253-4'e (paslanmaz) göre kaynak ağızlı fittingsler, et kalınlıkları DIN EN ISO 1127 (paslanmaz çelik borular) ile uyumlu = eski DIN/ISO Seri 1

EN serileri 3 ve 4 dikişli ve dikişsiz fittingler için tasarlanmıştır.

EN serileri 5-8 sadece dikişsiz ve DN 600'a kadar olan parçalar içindir.

Et Kalınlığı:

Kalın basılmış rakamlarla gösterilen et kalınlıkları DIN/ISO'ya göre farklılaşmıştır.