

MATERIAL SPECIFICATION AND COMPATIBILITY CHART *													
TYPE	BASE	TRADE	SAE	ASTM						AWS / ASME Class			
	MAIN MATERIAL	TRADE NAME	UNS NUMBER	PIPE	PLATE	FORGINGS (Flanges, Valves)	BUTT WELD CONNECTORS	CASTINGS (Cast Valves)	TUBING	Stick Electrode (SMAW)	TIG Rod (GTAW)	"P" WELD Number	
Carbon Steels	CARBON STEELS Iron + Carbon	Carbon Steel	K02801	A-53	A-285	A-181	A-234 WPB	A-216 WCB	A-161	E-6010	ER-70S-5	1	
			K01800	A-106 B	A-515	A-105			A-178	E-6010	ER-70S-2		
			K02100		A-516				A-179	E-6010	ER-70S-5		
			K03005	API-5L	A-283	A-192, A-210			E-7018	ER-70S-5			
	Low Temp Steel	K03008	A-333 Gr 1-6	A-516	A-350 LF2	A-420 WPL 1/6	A-352 LCB	A-214	E-7018	ER-70S-2			
CHROME ALLOYS	Chrome-Molybdenum	1/2" Cr	1/2" Cr P1	K11522	A-335 P1	A-204	A-182 F1	A-234 WP1	A-217 WC1	A-213-T1	E-7018 A1	ER-70S A1	3
		1/2 Cr - 1/2 Mo	Cr-Moly P2	K11547	A-335 P2	A-387-A	A-182 F2			A-213-T2	E-8018 B1	ER-110S-1	
		1 Cr - 1/2 Mo	12 Chrome	K11562	A-335 P12	A-387-Gr 12	A-182 F-12	A-234 WP12	A-217 WC6	A-214 T-12	E-8018 B2	ER-80S B2	4
		1 1/4 Cr - 1/2 Mo	11 Chrome	K11597	A-335 P11	A-387-Gr 11	A-182 F-11	A-234 WP11		A-213 T-11	E-8018 B2	ER-80S B2	
		2 1/4 Cr - 1 Mo	22 Chrome	K21590	A-335 P22	A-387-Gr 22	A-182 F-22	A-234 WP22	A-217 C9	A-213 T-22	E-9018 B3	ER-90S B3	5A
		3 Cr - 1 Mo	21 Chrome	K31545	A-335 P21	A-387 Gr 21	A-182 F-21	A-234 WP21		A-213 T-21	E-9018 B3	ER-90S B3	
		5 Cr - 1/2 Mo	5 Chrome	K41545	A-335 P5	A-3587 Gr 5	A-182 F-5	A-234-WP5	A-217 C5	A-213 T-5	E-9018 B6	ER-80S B6	5B
		9 Cr - 1 Mo	9 Chrome	K90941	A-335 P9	A-387 Gr 9	A-182 F-9	A-234 WP9	A-217 C12	A-213-T9	E-8018 B8	ER-80S B8	
		9 Cr - 1 Mo	91 Chrome	K90901	A-335 P91	A-387 Gr 91	A-182 F91	A-234 WP91	A-217 C12A	A-213-T91	E-9018 B9	ER-80S B9	
SS	Mart	10 Cr - 1 Mo	SS 410	S41000	A-268 Tp-410	A-240 Gr 410	A-182 F-6	A-815 WP410	A-217 CA 15	A-268 TP-410	E-410-16	ER-410	6
	Ferr	11 Cr - 1 Mo	SS 430	S43000	A-268 Tp-430	A-240 Gr 430	A-182 F430	A-815 WP430	-	A-268 TP-430	E-430-16	ER-430	7
		12 Cr - 1 Mo	SS 405	S40500	A-268 Tp-405	A-240 Gr 405	A-182 F429	A-815 WP405	A-352 CA6NM	A-268-TP-405	E-405-16	ER-405	
STAINLESS STEEL AUSTENIC		13 Cr - 1 Mo	SS 304	S30400	A-312 Tp-304	A-240 Gr 304	A-182 F304	A-403 WP-304	A-351 CF8	A-213-TP-304	E-308-16	ER-308 L	8
		14 Cr - 1 Mo	SS 304L	S30403	A-312 Tp-304L	A-240 Gr 304 L	A-182 F304L	A-403 WP-304L	A-351 CF3	A-213-TP-304L	E-308 L-16	ER-308	
		15 Cr - 1 Mo	SS 309	S30900	A-312 Tp-309	A-240 Gr 309	A-182 F304H	A-304 WP-309	A-351 CH20	A-213 TP-309S	E-309-16	ER-309	
		16 Cr - 1 Mo	SS 310	S31000	A-312 Tp-310	A-240 Gr 310	A-182 F310	A-403 WP-310	A-351 CK20	A-213-TP-310	E-310-16	ER-310	
		17 Cr - 1 Mo	SS 316	S31600	A-312 Tp-316	A-240 Gr 316	A-182 F316	A-403 WP-316	A-351 CF8M	A-213-TP-316	E-316-16	ER-316	
		18 Cr - 1 Mo	SS 316L	S31603	A-312 Tp-316L	A-240 Gr 316 L	A-182 F-316L	A-403 WP-316L	A-351 CF3M	A-213-TP-316L	E-316L-16	ER-316L	
		19 Cr - 1 Mo	SS 317	S31700	A-312 Tp-317	A-240 Gr 317	A-182 F-317	A-403 WP-317	A-351 CG8M	A-213 TP-317	E-317-16	ER-317	
		20 Cr - 1 Mo	SS 321	S32100	A-312 Tp-321	A-240 Gr 321	A-182 F321	A-403 WP-321	-	A-213-TP-321	E-347-16	ER-321	
		21 Cr - 1 Mo	SS 347	S34700	A-312 Tp-347	A-240 Gr 347	A-182 F347	A-403 WP-347	A-351 CF8C	A-213-TP-341	E-347-16	ER-347	
		22 Cr - 5 Ni - 3 Mo	DUPLEX 2205	S32205	A-790 Tp-2205	A-240 Gr 2205	A-182 F51	A-850	A-890 CD3MN	A-789 S32205	E-2209	ER-2209	
NICKEL ALLOYS		35 Ni - 20 Cr - 2 Mo	ALLOY 20	N08020	B-464, B-729	B-463 N08020	B-462 F20	B-366 WP20CB	A-351 CN7M	B-729, B-626	E-320LR	ER-320LR	45
		99 Ni	NICKEL® 200	N02200	B-161, B-725	B-162 N02200	B-564 N02200	B-366 WPN	A-494 CZ100	B-622, B730	E-Ni-1	ERNi-CI	41
		67 Ni - 31 Cu	MONEL® 400	N04400	B-165, B-725	B-127 N04400	B-564 N04400	B-366 WPNC	A-494 M35-1	B-163, B-165	E-NiCu-7	ER-NiCu-7	42
		72 Ni - 15 Cr - 8 Fe	INCONEL® 600	N06600	B-167, B-517	B-168 N06600	B-564 N06600	B-366 WPNCI	A-494 CY40	B-163, B-516	E-NiCrFe-3	ER-NiCr-1	43
		33 Ni - 20 Cr-45 Fe	INCOLOY® 800	N08800	B-407, B-514	B-409 N08800	B-564-N08800	B-366 WPNIC	A-351 CTI5C	B-163,	E-NiCr-3	ER-NiCr-3	45
	58 Ni -16 Cr-16 Mo	HASTELLOY® C276	N10276	B-622, B-619	B-575 N10276	B-564 N10276	B-366 WPHC276	A494 CW-12MW	B-622 N10276	E-NiCrMo-3	ER-NiCrMo-3	44	
TI		99 Ti Unalloyed	TITANIUM Gr 2	R50250	B-861, B-862	B-265 Gr 2	B-381 F2	B-363 WPT2	B-367 Gr. C2	B-388 Gr 2	E-Ti-2	ER-Ti-2	51
		99 Ti + .25 Pd	TITANIUM Gr 7	R52400	B-861, B-862	B-265 Gr 7	B-381 F7	B-363 WPT7	B-367 Gr. C7	B-388 Gr 7	E-Ti-7	ER-Ti-7	51
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	BASE	TRADE	SAE	ASTM						AWS / ASME Class			

* For reference only.