MAG WELDING CONSUMABLES

Classification	Brand name	Dia. (mm)	Equivalent specification	Welding position	Shielding gas	Type of current	Typical chemical composition of all-weld-metal (%)					
							C	Si	Mn	Cr	Ni	Mo
For mild steel	K-61T	1.2~1.6	AWS E61T-G JIS YFW-A430R KS YFW-A430R	F, V, OH, H, VD	80%Ar+20%CO_2	DC(+)	0.03	0.12	0.80	–	–	–
For high tensile strength steel (490MPa)	K-71T	1.2~2.4	AWS E71T-1 JIS YFW-C50DR KS YFW-C50DR	F, V, OH, H, VD	CO_2	DC(+)	0.04	0.45	1.30	–	–	–
	K-71TLF	1.2~2.4	AWS E71T-1 JIS YFW-C502R KS YFW-C502R	F, V, OH, H, VD	CO_2	DC(+)	0.03	0.38	1.35	–	–	–
	K-71TM	1.2~2.4	AWS E71T-1M JIS YFW-A50DR KS YFW-A50DR	F, V, OH, H	80%Ar+20%CO_2	DC(+)	0.03	0.59	1.44	–	–	–
	K-70TB	1.2~2.4	AWS E70T-5M JIS YFW-A502B KS YFW-A502B	F, H-Fil	80%Ar+20%CO_2	DC(+)	0.04	0.34	1.30	–	–	–
	K-71TB	1.2~2.4	AWS E71T-5/-5M JIS YFW-C502B KS YFW-C502B	F, V, OH, H	CO_2	DC(+)	0.02	0.60	1.60	–	–	–
	K-70T	1.2~1.6	AWS E70T-1/-1M JIS YFW-C50DM KS YFW-C50DM	F, H-Fil	CO_2	DC(+)	0.03	0.50	1.45	–	–	–
	K-70ST	1.2~1.6	AWS E70T-1 JIS YFW-C502R KS YFW-C502R	F, H-Fil	CO_2	DC(+)	0.04	0.49	1.36	–	–	–
	KX-100	1.2~1.6	AWS E70C-3C JIS YFW-C50DM KS YFW-C50DM	F, H-Fil	CO_2	DC(+)	0.04	0.54	1.55	–	–	–
	KX-200	1.2~2.4	AWS E70T-1 JIS YFW-C50DM KS YFW-C50DM	F, H-Fil	CO_2	DC(+)	0.04	0.41	1.25	–	–	–
	KX-200H	1.2~1.6	AWS E70T-1 JIS YFW-C502M KS YFW-C502M	F, H-Fil	CO_2	DC(+)	0.04	0.56	1.61	–	–	–
	KX-70CM	1.2~1.6	AWS E70C-3M JIS YFW-A50DM KS YFW-A50DM	F, H-Fil	CO_2	DC(+)	0.03	0.40	1.60	–	–	–
	KX-706M	1.2~1.6	AWS E70C-6M JIS YFW-A502M KS YFW-A502M	F, H-Fil	CO_2	DC(+)	0.04	0.60	1.50	–	–	–
	K-NGS4	1.6~3.2	AWS E70T-4 JIS YFW-S50GB KS YFW-S50GB	F, H-Fil	–	DC(+)	0.17	0.22	1.80	AI : 1.32		
	K-NGS10	1.2~2.0	AWS E71T-10 JIS YFW-S50GB KS YFW-S50GB	F, H-Fil, V	–	DC(—)	0.10	0.11	0.53	AI : 1.10		
	K-NGS11	1.2~2.0	AWS E71T-11 JIS YFW-S50GB KS YFW-S50GB	F, H-Fil, V	–	DC(—)	0.10	0.10	0.55	AI : 1.20		
	K-NGS	1.2~2.0	AWS E71T-GS JIS YFW-S50GB KS YFW-S50GB	F, H-Fil, V	–	DC(±)	0.16	0.31	0.82	AI : 1.30		
For high tensile strength steel (550~900MPa)	K-81T	1.2~1.6	AWS E81T1-Ni1 JIS YFW-C602R KS YFW-C602R	F, V , H H-Fil	CO_2	DC(+)	0.04	0.35	1.17	–	1.00	–
	K-82T	1.2~1.6	AWS E81T1-Ni2	F, H-Fil, V	CO_2	DC(+)	0.03	0.48	1.26	–	2.00	–
	KX-300	1.2~1.6	AWS E80T1-Ni1 JIS YFW-C602M KS YFW-C602M	F, H-Fil	CO_2	DC(+)	0.02	0.47	1.34	–	0.97	–
	K-91T	1.2~1.6	AWS E91T1-Ni1 JIS YFW-C602R KS YFW-C602R	F, V, OH H, VD	CO_2	DC(+)	0.03	0.42	1.37	–	0.93	–
	K-110TK3	1.2~1.6	AWS E110T1-K3	F, H-Fil,VD	CO_2	DC(+)	0.04	0.51	1.72	–	2.04	0.42
For atmospheric corrosion resisting steel	K-71TW	1.2~1.6	AWS E81T1-W2 JIS YFA-50W KS YFA-50W	F, H-Fil,VD	CO_2	DC(+)	0.05	0.54	1.10	0.55	0.45	Cu 0.42

Typical mechanical properties of all-weld-metal			Application	Approvals
T.S N/mm² [kgf/mm²]	El. (%)	I.V J [kgf · m]		
487 {49}	31	20 {2} (-20℃)	All position welding of POS-AG steel and low silicon steel for single and multi-pass applications.	–
580 {59}	29	50 {5} (-20℃)	MAG Welding of storage vessels, shipbuilding, and other structural fabrications.	ABS, BV, CCS, CWB, DNV,GL, KR, LR, NK, RINA, JIS, KS
570 {58}	28	60 {6} (-20℃)	MAG Welding of storage vessels, shipbuilding, heavy industry and other structural fabrications.	ABS, BV, CCS, DNV, GL, KR, LR, NK, RINA, TUV, JIS, KS
570 {59}	29	60 {6} (-20℃)	All position welding of machinery, shipbuildings, bridges and vehicles.	ABS, BV, DNV, LR, RINA,TÜV, JIS, KS
550 {56}	29	50 {5} (-30℃)	MAG Welding of storage vessels, shipbuilding and other structural fabrications.The toughness and crack resistance of the weld metal have been improved by a lime-fluoride base slag.	–
610 {32}	30	50 {5} (-30℃)	Butt and fillet welding of carbon steel for machinery, cars, shipbuilding, birdges, ets.	–
570 {58}	25	65 {7} (-20℃)	Flat and H-fillet welding of medium and heavy thick plate with higher deposition rate.	CWB, JIS, KS
584 {59}	28	50 {5} (-20℃)	For fillet welding of inorganic zinc-rich primer coated steels,often used in the machinery, steel fabrications and bridge construction industries	ABS, BV, DNV, GL, KR, LR, NK, JIS, KS
550 {60}	29	60 {6} (-20℃)	Butt and fillet welding of steel structures such as industrial machinery.	ABS, BV, DNV, GL, KR,LR, NK, JIS, KS
550 {56}	27	60 {6} (-20℃)	Flat and H-fillet welding of medium and heavy thick plate with higher deposition rate.	ABS, BV, CCS, DNV, GL, KR,LR, NK, TÜV, JIS, KS
540 {55}	29	55 {6} (-20℃)	For fillet welding of inorganic zinc-rich primer coated steels, often used in the machinery, steel fabrications and bridge construction industries. Welding speed is very high(Twin-Tandem 1000mm/min)	ABS, DNV, GL, KR, LR, JIS, KS
540 {55}	29	55 {6} (-20℃)	Butt and fillet welding of steel structures such as shipbuilding and construction machines, etc.	ABS, BV, DNV, GL, LR, RINA, JIS, KS
610 {62}	27	55 {6} (-30℃)	Butt and fillet welding of steel structures such as shipbuilding and construction machines, etc.	ABS, BV, CWB, DNV, GL, LR, RINA , JIS
545 {55}	23	–	The welding of heavy machinery, large constuction components where appropriate in barge building. The wire is intended for single- and multiple-pass welding in the flat and horizontal positions.	–
530 {54}	22	–	Lap and fillet welding for single pass applications.	–
530 {54}	23	–	For single and multi-pass of groove welds and fillet welds.	–
570 {53}	22	–	For single-pass of groove welds in the flat welding position and fillet welds on sheet metal.	–
630 {64}	28	45 {5} (-30℃)	All position MAG welding of 590MPa class high tensile strength steel of construction structure, machinery, bridges and storage tanks.	–
673 {68}	24	45 {5} (-40℃)	MAG welding of 590MPa class Al-killed steel for low-temperature service. The weld metal contains about 2.0% Ni and good impact value at low temperature down to -40℃	–
640 {65}	25	47 {5} (-30℃)	For flat or horizontal fillet (tandem) MAG welding of mild and 590MPa high tensile steel. Recommended for petro-chemical applications, machinery steels, bridge construction industries.	–
725 {74}	22	87 {9} (-30℃)	For gas-shielded metal arc welding of 600 MPa high tensile steel for low temperature service. For all-position work with many high-strength low alloy steels such as ASTM A302, A572, A575, A734	–
834 {85}	21	50 {5} (-20℃)	For high strength steel application as HY 80 Grade and ASTM A514, A517,A710, All position gas shielded 1.8%Mn-2%Ni-0.55%Mo alloyed Flux cored arc welding wire..	ABS, CWB
590 {60}	28	40 {4} (-30℃)	Butt and fillet welding of carbon steel and 490MPa class high tensile strength weather proof steel.	–

MAG WELDING CONSUMABLES

Classification	Brand name	Dia. (mm)	Equivalent specification	Welding position	Shielding gas	Type of current	Typical chemical composition of all-weld-metal (%)						Typical mechanical properties of all-weld-metal			Application	Approvals
							C	Si	Mn	Cr	Ni	Mo	T.S N/mm² [kgf/mm²]	El. (%)	I.V J [kgf · m]		
For atmospheric corrosion resisting steel	K-81TW	1.2~1.6	AWS E81T1-W2 JIS YFA-58A KS YFA-58A	F, H-Fil,VD	CO_2	DC(+)	0.05	0.54	1.20	0.55	0.55	Cu 0.45	630 {64}	28	60 {6} (-30℃)	Butt and fillet welding of high tensile strength weather-proof steel, for example ASTM A-242 or A-588, which is used normally without painting, for shipbuildings. and bridges, etc.	–
For low temperature service steel	K-71UT	1.2~1.6	AWS E71T1-1/-9J JIS YFL-C504R KS YFL-C504R	F, V ,OH H, VD	CO_2	DC(+)	0.04	0.30	1.35	–	0.39	–	600 {61}	26	55 {5} (-40℃)	All position gas shielded 0.4%Ni alloyed Flux cored arc welding wire. Typical applications are railcar, automotive, heavy equipment and general structual steel fabrications.	ABS, BV, DNV, GL, KR, NK, LR, JIS, KS
	K-71TSR	1.2~1.6	AWS E71T-12JH4 JIS YFL-C504R KS YFL-C504R	F, V, H, H-Fill	CO_2	DC(+)	0.02	0.45	1.41	–	0.41	–	621 {63}	25	119 {12} (-40℃)	All position gas shielded 0.4%Ni alloyed Flux cored arc welding wire. Applications are railcar, automotive, machinery, shipbuilding and heavy equipment etc .(NACE.API steel)	ABS, BV, DNV, GL, KR, LR, NK
	K-80TK2	1.2~1.6	AWS E80T1-K2 JIS YFL-C506M KS YFL-C506M	F, H-Fil	CO_2	DC(+)	0.03	0.45	1.50	–	1.50	–	640 {65}	25	50 {5} (-60℃)	MAG welding of Al-killed steel which are used for low temperature service steel at down to -60℃ for offshore structures of LPG carriers.	ABS, BV, DNV, GL, KR, LR, NK, JIS, KS
	K-81TK2	1.2~1.6	AWS E81T1-K2 JIS YFL-C506R KS YFL-C506R	F, V, OH, H, VD	CO_2	DC(+)	0.03	0.46	1.45	–	1.50	–	650 {66}	25	60 {6} (-60℃)	Butt and fillet welding of 1.5% Ni steel and Al-killed steel. For low temperature service steel at down to -60℃for offshore structures of LPG carriers.	ABS, BV, DNV, GL, KR, LR, NK, JIS, KS
	K-81TSR	1.2~1.6	AWS E81T1-K2 JIS YFL-C506R KS YFL-C506R	F, V, H, H-Fill	CO_2	DC(+)	0.02	0.31	1.21	–	1.47	–	640 {65}	25	97 {10} (-60℃)	For gas shielded metal arc welding of 600MPa high tensile steel for low temperature service. LNG and LPG carriers and storage tank etc. (Acceptable for CTOD characteristics.)	–
For heat-resisting steel	K-81TA1	1.2~1.6	AWS E81T1-A1 JIS YFM-C KS YFM-C	F, V, OH H, VD	CO_2	DC(+)	0.02	0.55	1.21	–	–	0.53	637 {65}	25	PWHT : 620℃ X 1hr. S · R	Single-and Multi-pass welding in all positions using 100%CO_2 shielding gas for steam pipes of boilers, oil refining industries, casting and pressure vessels for high temperature service.	–
	K-81TB2	1.2~1.6	AWS E81T-B2 JIS YF1CM-C KS YF1CM-C	F, V, H H-Fill,	CO_2	DC(+)	0.04	0.44	1.08	1.25	–	0.53	600 {61}	25	PWHT : 690℃ X 1hr. S · R	For welding of 1.25%Cr-0.5%Mo steel for main steam pipes of boilers for electric power and equipment oil fefining industries and high temperature synthetic industries.	–
	K-91TB3	1.2~1.6	AWS E91T1-B3 JIS YF2CM-C KS YF2CM-C	F, V, H H-Fill	CO_2	DC(+)	0.05	0.51	1.18	2.25	–	1.00	680 {69}	24	PWHT : 690℃ X 1hr. S · R	For welding of 2.25%Cr-1%Mo steel used for steam pipes of boilers, oil refining industry casting and pressure vessels for high temperature service.	–
	K-91TB9	1.2~1.6	–	F, V, H H-Fill	80%Ar+20%CO_2	DC(+)	0.12	0.25	0.72	10.3	0.70	1.00	810 {82}	15	PWHT : 760℃ X 1hr. S · R	Butt and fillet welding of 9%Cr-1% Mo-Ni-Nb-V steel used for high pressure boilers. Applications are ASTM A189-F91, A199-T91, A231-T91, A369-FP91, A387-Gr91	–

Classification	Brand name	Dia. (mm)	Equivalent specification	Welding position	Shielding gas	Type of current	Typical chemical composition of all-weld-metal (%)						Hardness of all-weld-metal			Application	Approvals
							C	Si	Mn	Cr	Ni	Mo	Hv	HRC	Hs		
For hardfacing	K-250HT	1.2~1.6	JIS YF2A-C-250 KS YF2A-C-250	F, H-Fil	CO_2	DC(+)	0.07	0.50	1.59	1.30	–	–	260	24	37	MAG welding for metal-to-metal wearing and underlayer welding of hardsurfacing Low spatter level, easy salg removal and reduced grinding time after work handening.	–
	K-300HT	1.2~1.6	JIS YF2A-C-300 KS YF2A-C-300	F, H-Fil	CO_2	DC(+)	0.09	0.68	1.54	1.10	–	–	300	30	42	MAG welding for hardfacing and repairing rollers, shafts and wheels etc. It can be possible to get abrasion resistance with proper preheat and interpass temperature.	–
	K-350HT	1.2~1.6	JIS YF2A-C-350 KS YF2A-C-350	F, H-Fil	CO_2	DC(+)	0.12	0.45	1.37	1.30	–	0.20	360	37	50	MAG welding wire with higher hardness for metal-to-metal wear and mild abrasion. Used on transfer rollers and idlers, crane wheels and shafts etc.	–
	K-450HT	1.2~1.6	JIS YF2A-C-450 KS YF2A-C-450	F, H-Fil	CO_2	DC(+)	0.24	0.51	1.20	2.00	–	0.60	450	45	61	MAG welding wire for metal-to-metal wearing or abrasion. The weld metal is of mertensite structure and has stable hardness because it contains carbide forming elements.	–
	K-500HT	1.2~1.6	JIS YF3B-C-500 KS YF3B-C-500	F, H-Fil	CO_2	DC(+)	0.19	2.06	0.35	5.26	–	0.59	510	50	66	K-500HT can be used on carbon, medium carbon, low alloy, manganese steel. It is especially suitable for overlaying thin gauge materials, bulding up edges, crusher rolls etc.	–
	K-600HT	1.2~1.6	JIS YF3B-C-600 KS YF3B-C-600	F, H-Fil	CO_2	DC(+)	0.25	2.18	0.36	6.5	–	0.50	590	55	73	MAG welding wire produces a deposit which resists metal-to-metal wear and mild abrasion It can be used for crane wheels, blower blades, bucket lips, dredge parts etc.	–
	K-700HT	1.2~1.6	JIS YF3B-C-700 KS YF3B-C-700	F, H-Fil	CO_2	DC(+)	0.30	2.40	0.50	7.0	W:0.70		690	60	80	MAG welding wire for heavy abrasion resistance with martensitic stucture. It can be used for crusher hammers, ore chuter, dozer blades, ripper teeth, bucket lips etc.	–
	K-800HT	1.2~1.6	JIS YF3B-C-800 KS YF3B-C-800	F, H-Fil	CO_2	DC(+)	0.44	1.5	0.55	8.6	W:0.50		780	63	87	MAG welding for heavy abrasion resistance with martensitic stucture. It can be used for Augers, bucket lips, conveyor screws, blower blades, dozer blades etc.	–
	K-CXA-40HT	1.2~1.6	JIS YF4B-C-350 KS YF4B-C-350	F, H-Fil	98%Ar+2%O_2	DC(+)	0.05	0.25	0.30	12.0	4.20	–	370	38	51	MAG welding wire for metal-to-metal wearing and underlayer welding of hardsurfacing It can be used for tractor rollers, trunnions, crane wheels, track rails, idlers, etc.	–
	K-CXA-41HT	1.2~1.6	JIS YF4B-C-350 KS YF4B-C-350	F, H-Fil	98%Ar+2%O_2	DC(+)	0.05	0.39	0.49	12.1	3.90	1.10	370	38	51	MAG welding wire for metal-to-metal wearing, abrasion and corrosion. It can be used for tractor rollers, shafts, rollrs, valves, track rails, idlders, etc.	–

MAG WELDING CONSUMABLES

Classification	Brand name	Dia. (mm)	Equivalent specification	Welding position	Shielding gas	Type of current	Typical chemical composition of all-weld-metal (%)					
							C	Si	Mn	Cr	Ni	Mo
For stainless steel	K-308T	1.2~1.6	AWS E308T0-1/-4 JIS YF308C KS YF308C	F, H-Fil	CO_2 / Ar+CO_2	DC(+)	0.05	0.60	1.55	19.5	10.5	–
	K-308LT	1.2~1.6	AWS E308LT1-1/-4 JIS YF308LC KS YF308LC	F, V, OH H, VD	CO_2 / Ar+CO_2	DC(+)	0.03	0.62	1.56	19.5	10.5	–
	K-308LF	1.2~1.6	AWS E308LT0-1/-4 JIS YF308LC KS YF308LC	F, H-Fill	CO_2 / Ar+CO_2	DC(+)	0.03	0.52	1.70	20.3	10.4	–
	K-309T	1.2~1.6	AWS E309T0-1/-4 JIS YF309C KS YF309C	H-Fil	CO_2 / Ar+CO_2	DC(+)	0.05	0.58	1.45	23.5	13.0	–
	K-309LT	1.2~1.6	AWS E309LT1-1/-4 JIS YF309LC KS YF309LC	F, V, OH, H, VD	CO_2 / Ar+CO_2	DC(+)	0.03	0.60	1.40	23.6	13.1	–
	K-309LF	1.2~1.6	AWS E309LT1-1/-4 JIS YF309LC KS YF309LC	F, H-Fil	CO_2 / Ar+CO_2	DC(+)	0.03	0.65	1.55	24	13.2	–
	K-309LMT	1.2~1.6	AWS E309L JIS YF309LG KS YF309LG	F, H-Fil	98%Ar+2%O_2	DC(+)	0.03	0.48	1.57	23.9	12.4	–
	K-309MoLT	1.2~1.6	AWS E309LMoT1-1 JIS YF309MoLC KS YF309MoLC	F, V, OH, H, VD	CO_2	DC(+)	0.03	0.54	1.30	23.7	13	2.70
	K-312T	1.2~1.6	AWS E312T1-1	F, V, OH, H, VD	CO_2	DC(+)	0.04	0.83	1.00	30.2	9.5	0.22
	K-316T	1.2~1.6	AWS E316T0-1/-4 JIS YF316C KS YF316C	F, H-Fil	CO_2 / Ar+CO_2	DC(+)	0.05	0.60	1.47	18.4	12	2.50
	K-316LT	1.2~1.6	AWS E316LT1-1/-4 JIS YF316LC KS YF316LC	F, V, OH, H, VD	CO_2 / Ar+CO_2	DC(+)	0.03	0.65	1.20	18.3	12.2	2.80
	K-316LF	1.2~1.6	AWS E316LT0-1/-4 JIS YF316LC KS YF316LC	F, H-Fil	CO_2 / Ar+CO_2	DC(+)	0.03	0.65	1.58	19.4	12.4	2.42
	K-317LT	1.2~1.6	AWS E317LT1-1 JIS YF317LC KS YF317LC	F, V, OH, H, VD	CO_2	DC(+)	0.03	0.65	1.25	18.8	13.7	3.50
	K-329T	1.2~1.6	AWS E2209T1-1/4	F, V, OH, H, VD	CO_2 / Ar+CO_2	DC(+)	0.03	0.49	1.67	23.1	9.66	2.84
	K-347T	1.2~1.6	AWS E347T1-1 JIS YF347C KS YF347C	F, V, OH, H, VD	CO_2	DC(+)	0.05	0.63	1.75	19.5	10.5	Nb: 0.50
	K-409TiT	1.2~1.6	AWS EC409	F, H-Fil	98%Ar+2%O_2	DC(+)	0.05	0.50	0.45	12.1	Ti : 0.70	
	K-409TiC	1.2~1.6	AWS EC409	F, H-Fil	98%Ar+2%O_2	DC(+)	0.03	0.55	0.60	11.4	Ti : 1.00	
	K-410T	1.2~1.6	AWS E410T0-1/-4 JIS YF410C KS YF410C	F, H-Fil	CO_2 / Ar+CO_2	DC(+)	0.07	0.20	0.47	13	–	–
	K-410NiMoT	1.2~1.6	AWS E410NiMoT0-4	F, H-Fil	Ar+20%CO_2	DC(+)	0.04	0.23	0.36	12.2	4.1	0.7
	K-430T	1.2~1.6	AWS E430T0-G JIS YF430 KS YF430	F, H-Fil	98%Ar+2%O_2	DC(+)	0.02	0.61	0.49	16.2	Ti : 1.00	
	K-436T	1.2~1.6	–	F, H-Fil	98%Ar+2%O_2	DC(+)	0.03	0.35	0.63	17.5	Ti: 0.50	1.06
	K-439T	1.2~1.6	–	F, H-Fil	98%Ar+2%O_2	DC(+)	0.03	0.33	0.64	17.8	Ti: 0.30	–

Typical mechanical properties of all-weld-metal			Application	Approvals
T.S N/mm² [kgf/mm²]	El. (%)	I.V J [kgf · m]		
580 {59}	38	–	MAG weding of 18%Cr-8%Ni stainless steel (STS 301, 302, 304, and 308) corrosion resistibility and mechanical properties of the weld metals are superior in as-welded condition.	ABS, BV, DNV, KR, NK,JIS
570 {58}	42	–	MAG weding of low carbon 18%Cr-8%Ni stainless steel (STS 301, 302, 304L, and 308L) As a rutile flux- cored wire, specially designed to operate in the vertical and overhead positions.	ABS, BV, CWB, KR, JIS TÜV, NK
620 {63}	38	–	An austenite stainless steel flat-position gas shielded flux-cored wire with low carbon used for joining common austenite stainless steel such as type of STS 301, 302, 304L, and 304L	JIS
590 {60}	36	–	MAG weding of 22%Cr-12%Ni stainless steel. Corrosion resistibility and mechanical properties of the weld metal are superior in as-welded condition.	ABS, BV, DNV, KR, LR, NK, JIS
550 {56}	41	–	MAG welding of a dissimilar joint consisiting of a stainless steel and a carbon steel or a low alloy steel. The principal application is the vertical and overhead joining of disimilar and difficult to weld steels.	ABS, BV, CWB, DNV, KR, LR, NK, PINA, TÜV, JIS
630 {64}	40	–	An austenite stainless steel flat-position gas shieldied flux-cored wire with low carborn containing 22%Cr-12%Ni used for the welding of dissimilar metals such as stainless steel to mild or alloy steel.	JIS
560 {57}	40	–	Butt and fillet welding of automobile muffler (STS 304L, 409) or low carbon 22%Cr-12%Ni stainless steels. Welding of dissimilar metal such as carbon steel to stainless steels.	JIS
670 {68}	32	–	Welding of dissimilar metals such as molybdenum-contained austenitic stainless steels to carbon steel,the first pass in 316(L) clad steel.	KR, JIS
760 {77}	25	–	MAG welding of 30%Cr-9%Ni stainless steel (STS 304, 308, 312) The principal application is the vertical and overhead joining of dissimilar and difficult to weld steels.	JIS
580 {59}	38	–	MAG welding of 18%Cr-12%Ni-2%Mo stainless steel (STS 316). Heat resistibility and mechanical properties of the weld metals are superior in as-welded condition.	ABS, KR, JIS
550 {56}	40	–	MAG welding of low carbon 18%Cr-12%Ni-2%Mo stainless steel (STS 316L, 316Ti, 316Cb). As a rutile flux-cored wire, specially designed to operate in the vertical and overhed positions.	ABS, BV, CWB, DNV KR, NK, RINA, TÜV, JIS
600 {61}	39	–	An austenite stainless steel flat-position gas shielded flux-cored wire with low carbon used for joining common austenite stainless steel such as types of STS 316L,316Ti,316Cb.	JIS
610 {62}	33	–	MAG welding wire applicable to low carbon 18%Cr-12%Ni-2%Mo-N stainless steel (STS 316LN) and low carbon 19%Cr-13%Ni-3%Mo stainless steel (STS 317L)	ABS, JIS
816 {83}	27	–	All positional, flux-cored wire for the welding of duplex stainless steel. The structure of the all-weld metal is austenitic-ferrite (FN 35 ~ 50). The pitting corrosion resistance factor PRE(N) is higer than 35.	ABS
680 {69}	34	–	MAG welding wire appplicable to 18%Cr-8%Ni-Nb stainless steel (STS 347) and 18%Cr-8%Ni-Ti stainless steel (STS 321). It is used in the chemical and process plant industries.	–
560 {57}	17	–	A titanium-stabilised, 12%Cr-Ti metal-cored wire for welding ferritic (STS 409)stainless steel. It is suited for use on robots within the automotice industry for vehicle exhaust systems.	ABS
–	–	–	A titanium-stabilised, 12%Cr-Ti metal-cored wire for welding ferritic (STS 409) stainless steel. It is developed to meet the needs of the auto-motive exhaust fabricators that desired a metal-cored wire.	–
530 {54}	24	PWHT : 750℃ X 1hr. S · R	MAG welding wire applicable to 13%Cr stainless steel (STS 403, 410)	–
870 {89}	25	PWHT : 600℃ X 1hr. S · R	MAG welding wire applicable to 13%Cr-4%Ni-Mo stainless steel (STS 403, 405, 410, 420) and surfacing to resist corrosion, erosion or abrasion.	–
535 {54}	25	PWHT : 760℃ X 1hr. S · R	A titanium-stabilised, 16%Cr-Ti metal-cored wire for welding ferritic (STS 430) stainless steel. It is suited for use on robots within the automotive industry for vehicle exhaust systems.	–
477 {49}	23	–	A titanium-stabilised, 17%Cr-1%Mo-Ti metal-cored wire for welding ferritic (STS 436) stainless steel. It is suited for use on robots within the automotive industry for vehicle exhaust systems.	–
501 {51}	22	–	A titanium-stabilised, 18%Cr-Ti metal-cored wire for welding ferritic (STS 439) stainless steel. It is suited for use on robots within the automotive industry for vehicle exhaust systems.	–

Solid wires

MAG WELDING CONSUMABLES

Classification	Brand name	Dia. (mm)	Equivalent specification	Welding position	Shielding gas	Type of current	Typical chemical composition of all-weld-metal (%)					
							C	Si	Mn	P	S	Mo
For high tensile strength steel (490 Mpa)	KC-25	0.8~1.6	AWS ER70S-3 JIS YGW14 KS YGW14	F, V, OH, H	CO_2	DC(+)	0.10	0.45	0.90	0.015	0.009	–
	KC-25M	0.8~1.6	AWS ER70S-3 JIS YGW16 KS YGW16	F, V, OH, H	Ar+20%CO_2	DC(+)	0.10	0.50	1.02	0.015	0.009	–
	KC-26	0.8~1.6	AWS ER70S-G JIS YGW11 KS YGW11	F, V, OH, H	CO_2	DC(+)	0.11	0.55	1.31	0.014	0.011	–
	KC-27	0.8~1.6	AWS ER70S-G JIS YGW15 KS YGW15	F, V, OH, H	Ar+20%CO_2	DC(+)	0.08	0.44	0.98	0.014	0.010	–
	KC-28	0.8~1.6	AWS ER70S-6 JIS YGW12 KS YGW12	F, V, OH, H	CO_2	DC(+)	0.08	0.50	1.05	0.014	0.010	–
	KC-70S2	0.8~1.6	AWS ER70S-2	F, V, OH, H	CO_2	DC(+)	0.05	0.29	0.66	0.012	0.007	–
	ZO-25	0.8~1.6	AWS ER70S-3 JIS YGW14 KS YGW14	F, V, OH, H	CO_2	DC(+)	0.10	0.45	0.90	–	–	–
	ZO-26	0.8~1.6	AWS ER70S-G JIS YGW11 KS YGW11	F, V, OH, H	CO_2	DC(+)	0.11	0.55	1.31	–	–	–
	ZO-27	0.8~1.6	AWS ER70S-G JIS YGW15 KS YGW15	F, V, OH, H	Ar+20%CO_2	DC(+)	0.08	0.44	0.98	–	–	–
	ZO-28	0.8~1.6	AWS ER70S-6 JIS YGW12 KS YGW12	F, V, OH, H	CO_2	DC(+)	0.08	0.50	1.05	–	–	–
For high tensile strength steel (550~690 Mpa)	ZO-60	0.8~1.6	AWS ER80S-G JIS YGW21 KS YGW21	F, V, OH, H	CO_2	DC(+)	0.07	0.59	1.47	–	–	0.28
	ZO-55	1.2~1.6	AWS ER70S-G JIS YGW18 KS YGW18	F, V, OH, H	CO_2	DC(+)	0.07	0.78	1.55	0.014	0.009	–
For heat-resisting steel	KC-80D2	0.8~1.6	AWS ER80S-D2 JIS YGM-C KS YGM-C	F, V, OH, H	CO_2	DC(+)	0.11	0.32	1.24	–	0.48	–
	KC-80SB2	1.2~1.6	AWS ER80S-B2 JIS YG1CM-G KS YG1CM-G	F, V, OH, H	Ar+2%CO_2	DC(+)	0.10	0.4	0.41	0.011	0.015	–
	KC-90SB3	1.2~1.6	AWS ER90S-B3 JIS YG2CM-G KS YG2CM-G	F, V, OH, H	Ar+2%CO_2	DC(+)	0.10	0.38	0.40	0.011	0.015	–

Typical mechanical properties of all-weld-metal				Application	Approvals
Y.P N/mm² [kgf/mm²]	T.S N/mm² [kgf/mm²]	El. (%)	I.V J [kgf · m]		
430 {43}	520 {53}	33	90 {9} (-18℃)	Welding of cars, sheet metals and general fabrications.	ABS, CWB, KR, LR, NK, DNV, JIS, KS
440 {45}	540 {55}	30	100 {10} (-18℃)	Welding of structural steel, ships, bridges and industrial machinery.	–
490 {50}	560 {57}	29	110 {11} (-18℃)	Welding of structural steel, ships, bridges, boilers and pressure vessels.	ABS, BV, DNV, KR, LR, NK, GL, JIS, KS
490 {50}	560 {57}	31	160 {16} (-18℃)	Welding of automobiles, bridges, structural steels, machinery and ships.	ABS, DNV, NK, JIS
450 {46}	550 {56}	30	90 {9} (-29℃)	Welding of general shop fabrications, construction works, and electric products.	ABS, BV, DNV, GL, KR, LR, NK, CCS, CWB, JIS, KS, TÜV
490 {50}	550 {56}	29	80 {8} (-29℃)	Welding of automobiles, structure steel, machinery and ships.	–
430 {44}	520 {53}	33	90 {9} (-18℃)	Welding of cars, sheet metals and general fabrications.	–
490 {50}	560 {57}	29	110 {11} (-18℃)	Welding of structural steel, ships, bridges, boilers and pressure vessels.	ABS, KR, LR, NK, JIS, KS
490 {50}	560 {57}	31	160 {16} (-18℃)	Welding of automobiles, bridges, structural steels, machinery and ships.	ABS, DNV, LR, NK, JIS
450 {46}	550 {56}	30	90 {9} (-29℃)	Welding of general shop fabrications, construction works and electric products.	ABS, LR, NK, JIS, KS
550 {56}	640 {65}	27	110 {11} (-18℃)	Welding of 590N/mm² class high tensile strength steel.	NK, JIS
580 {59}	640 {65}	27	170 {17} (-29℃)	Butt and fillt welding of mild steel & 540N/mm² class high tensile strength steel. Construction Equipment, Bridges and Building	–
590 {60}	660 {67}	22	50 {5} (-29℃)	Welding of 0.5% Mo steel.	–
500 {51}	580 {59}	25	80 {8} (-29℃)	Welding of 1.25%Cr-0.5 Mo Heat Resistant steels.	–
570 {58}	660 {67}	24	80 {8} (-29℃)	Welding of 2.25%Cr-1% Mo Heat Resistant steels	–