SUBMERGED ARC WELDING CONSUMABLES

Types of fluxes	Brand name	Size (mm)	Equivalent specification	Typical chemical composition of all-weld-metal (%)					
				C	Si	Mn	P	S	Mo
Bonded type	EF-100× KD-50	2.4~6.4	AWS F7A(P)0 – EH14 JIS S502-H KS FS-BN1xYS-S6	0.09	0.45	1.30	0.014	0.012	–
	EF-100H× KD-50	2.4~6.4	AWS F7A(P)2 – EH14 JIS S502-H KS FS-BN1xYS-S6	0.08	0.34	1.34	0.013	0.011	–
	EF-100H× KD-60	2.4~6.4	AWS F8A(P)4 – EA3-G JIS S584-H KS FS-BN1xYS-M5	0.08	0.28	1.27	0.012	0.011	0.48
	EF-200× KD-40	2.4~6.4	AWS F7A(P)4 – EL8 JIS S502-H KS FS-BN1xYS-S1	0.09	0.53	1.25	0.015	0.012	–
	EF-200K× KD-42	2.4~6.4	AWS F7A(P)6 – EM12K JIS S502-H KS FS-BN1xYS-S3	0.09	0.45	1.30	0.014	0.012	–
	EF-200H× KD-60	2.4~6.4	AWS A.23 F8P0-EA3-A3 JIS S572-M	0.08	0.15	1.62	0.013	0.013	0.49
	EF-200H× KD-B2	2.4~6.4	AWS F8P0-EB2-B2 JIS S572-1CM	0.07	0.21	1.75	0.011	0.010	0.44
	EF-100S× KD-42	2.4~6.4	AWS E7A(P)2-EM12K JIS S502-H KS FS-BN1/YS-S3	0.05	0.52	1.63	0.021	0.012	–
	EF-260× KD-60	2.4~6.4	AWS E8A(P)6-EA3-G JIS S584-H KS FS-BN1/YS-M5	0.05	0.13	1.41	0.014	0.012	0.48
Fused type	G-50 × KD-50	2.4~6.4	AWS F7A2-EH14 JIS S502-H KS FS-FG2xYS-S6	0.07	0.33	1.78	0.012	0.011	–
	G-60 × KD-50	2.4~6.4	AWS F7A2-EH14 JIS S502-H KS FS-FG2xYS-S6	0.08	0.41	1.85	0.012	0.011	–

Typical mechanical propertiesm of all-weld-metal				Application	Approvals
Y.P N/mm² [kgf/mm²]	T.S N/mm² [kgf/mm²]	El. (%)	I.V J [kgf · m]		
460 {47}	530 {53}	27	70 {7} (-18℃)	Butt and fillet welding of vessels, LPG tanks and pipes, especially high speed welding of with low current.	ABS, BV, DNV, KR, LR, NK
450 {45}	540 {54}	27	75 {7} (-30℃)	Butt and fillet welding of 490N/mm² class high tensile strength steel.	–
560 {57}	640 {65}	29	50 {5} (-40℃)	Butt and fillet welding of 540N/mm² class high tensile strength steel.	–
450 {45}	550 {55}	27	55 {5} (-40℃)	Butt and fillet welding of general structures such as ships, structual steels and general fabrications. Suitable for single or multi-layer welding of one side or both side of steel plates.	–
460 {46}	560 {56}	28	80 {8} (-50℃)	Butt and fillet welding of vessels, steel structures and general fabrication, espeilly high speed welding with low current.	–
580 {59}	630 {64}	31	70 {7} (-20℃)	Single and multi-layer welding of 590N/mm² class high tensile steel such as steel structures, pipes and machinery	–
550 {56}	620 {63}	27	50 {5} (-20℃)	Single or multi-pass submerged arc welding of 1.25%Cr-1% Mo steel usedfor oil refininig equipment, fossil power equipment, etc.	–
551 {56}	591 {60}	30	70 {7} (-30℃)	welding of vessels, steel stucture and general fabrications.	–
640 {65}	685 {70}	27	80 {8} (-50℃)	single and multi-layer welding of 590N/mm² class high tensile steel such as steel structures, pipes and machinery.	–
420 {43}	540 {53}	27	65 {6} (-30℃)	Butt and fillet welding of general structures such as ships, bridges, machines and other steel structures.	ABS, BV, DNV, KR, LR, NK
430 {43}	530 {53}	27	65 {6} (-30℃)	Butt and fillet welding of general structures such as ships, machines and general fabrication.	ABS, BV, DNV, KR, LR, NK