



CHUUA ELECTRODE

☐ COVERED ARC WELDING ELECTRODES

For mild steel

Type of covering	Brand name	Size (mm)	Equivalent specification	Welding position	Type of current	Typical chemical composition of all-weld-metal(%)					Typical mechanical properties of all-weld-metal				Main use
						C	Si	Mn	P	S	Y.P N/ mm <sup>2</sup> {kgf/ mm <sup>2</sup> }	P.S N/ mm <sup>2</sup> {kgf/ mm <sup>2</sup> }	EL. (%)	I.V J {kgf . m}	
Ilmenite type	B-10a	2.6-6.0	JIS D4301	F,V,OH,H	AC or DC(±)	0.08	0.08	0.45	0.014	0.008	374 {38}	452 {46}	30	84 {9} (0°C)	Welding of ship hulls, high pressure vessels, bridges, heavy duty structures and other structural fabrication.
	B-14a	2.6-6.0	JIS D4301	F,V,OH,H	AC or DC(±)	0.08	0.08	0.45	0.014	0.008	374 {38}	452 {46}	30	84 {9} (0°C)	Welding of ship hulls, high pressure vessels, bridges, heavy duty structures and other structural fabrication.
	B-17a	2.6-6.0	JIS D4301	F,V,OH,H	AC or DC(±)	0.08	0.08	0.45	0.014	0.008	375 {38}	453 {46}	31	103 {11} (0°C)	Highly efficient welding in all position of heavy duty structures.
Lime titania type	A-03	2.6-6.0	JIS D4303	F,V,OH,H	AC or DC(±)	0.08	0.15	0.48	0.012	0.009	390 {40}	460 {47}	31	98 {10} (0°C)	Welding of vehicles, ship hulls, bridges, agricultural machinery and light structural steels.
High cellulose type	A-610	2.6-5.0	AWS E6012	F,V,OH,H	DC(+)	0.10	0.30	0.50	0.013	0.012	421 {43}	500 {51}	27	86 {8.8} (0°C)	Welding of pipeline and storage tank construction. Suitable for root and filler layers in pipeline applications.
	A-311	2.6-6.0	AWS E6012 JIS D4312	F,V,OH,H	AC or DC(±)	0.08	0.18	0.45	0.014	0.008	431 {44}	500 {51}	26	105 {10.7}(0°C)	Welding of shipbuilding, structures such as buildings and bridges, storage tanks, pipes and pressure vessel fittings.
High titania type	A-612	2.6-6.0	AWS E6012 DIN E4332R3	F,V,OH,H	AC or DC(-)	0.09	0.26	0.46	0.015	0.012	420 {43}	480 {49}	26	90 {9} (0°C)	Welding of shells of railway vehicles, cars and other steel sheet structures and general light structural steels.
	A-313	2.6-6.0	AWS E6013 JIS D4313	F,V,OH,H	AC or DC(±)	0.08	0.18	0.45	0.012	0.009	412 {42}	467 {48}	28	84 {8} (0°C)	Welding of steel sheet structures, light structural steels, automobile bodies, machinery guards.
	A-13V	2.6-6.0	AWS E6013 JIS D4314	F,VD	AC or DC(±)	0.08	0.26	0.45	0.014	0.011	430 {44}	480 {49}	28	50 {5} (0°C)	Vertical-down welding of steel sheet structures, light structural steels, railway vehicles, cars.
Low hydrogen type	LS-16	2.6-6.0	AWS E7016 JIS D4316	F,V,OH,H	AC or DC(+)	0.08	0.48	0.98	0.014	0.010	470 {48}	540 {55}	33	150 {15}(-29°C)	Welding of strength members of ship hulls, general heavy structural steels, free cutting steels and medium carbon steels.
	LS-16V	2.6-6.0	AWS E7016 JIS D4316	F,V,OH,H	AC or DC(+)	0.08	0.46	0.97	0.012	0.009	460 {47}	540 {55}	34	140 {14}(-29°C)	Welding of strength members of ship hulls, general heavy structural steels, free cutting steels and medium carbon steels.
	LS-16VF	2.6-5.5	AWS E7048 JIS D4316	F,VD	AC or DC(+)	0.08	0.45	0.85	0.014	0.011	460 {47}	540 {55}	33	100 {10}(-29°C)	Vertical-down welding of strength members of ship hulls, general heavy structural steels and pressure vessels.
Iron powder, titania type	A-714	2.6-6.0	AWS E7014	F,V,OH,H	AC or DC(±)	0.08	0.35	0.60	0.015	0.012	470 {48}	540 {55}	30	80 {8} (0°C)	Welding of ship structures, bridges, sheet metal, structural steels for buildings.
	A-724	3.2-6.4	AWS E7024 JIS D4324	F,H-Fil	AC or DC(±)	0.09	0.35	0.78	0.016	0.012	480 {49}	570 {58}	28	70 {7} (0°C)	Flat and horizontal fillet welding of ship structures, bridges, general structural steels.
Hight iron oxide, iron powder type	A-27	4.0-7.0	AWS E6027 JIS D4327	F,H-Fil	AC or DC(±)	0.07	0.32	0.67	0.017	0.014	426 {44}	469 {48}	30	85 {8.6} (0°C)	Flat and horizontal fillet welding of ship hulls, bridges, structural steels for buildings and general structures.
	A-27L	4.0-7.0	AWS E6027 JIS D4327	F,H-Fil	AC or DC(±)	0.07	0.32	0.67	0.017	0.014	426 {44}	469 {48}	30	85 {8.7} (0°C)	Flat and horizontal fillet welding of ship hulls, bridges, structural steels for buildings and general structures.
Special purpose	CUT-1	3.2-5.0	—	—	AC or DC(-)	—	—	—	—	—	—	—	—	For cutting and piercing all metals, and removing rivets and bolts.	
	TG-1	3.2-5.0	—	—	AC or DC(-)	—	—	—	—	—	—	—	—	For gouging, beveling out of excess metal in ferrous and nonferrous materials.	