

Covered Arc Welding Electrodes for Mild Steel and 490~550MPa High Tensile Strength steel

Brand Name	Identification Color		Specification		Dia. mm	Application and Characteristics
	End	Secondary	JIS	AWS		
S-03	Scarlet	Yellow	Z 3211 E4303	☆ A5.1 E6013	3.2 4.0 5.0 6.0	Lime-titania type electrode showing excellent weldability in vertical and overhead positions. A smooth and beautiful bead without undercuts and excessive reinforcement is obtained due to good slag fluidity and coverage.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G
NS-03Hi	Blue	—	Z 3211 E4303-U	☆ A5.1 E6013	2.0 2.6 3.2 4.0 5.0 6.0	Lime-titania type electrode assuring high efficiency in welding complicated structure of thin and medium thick plates. It produces a small amount of fumes and is highly resistant to moisture absorption. Arc is sharp, concentrated and easy to restrike. Slag is easy to remove. It can deposit a smooth and long bead even in inclined position.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G
S-03Z	Blue	Scarlet	Z 3211 E4303-U	☆ A5.1 E6013	2.0 2.6 3.2 4.0 5.0	Lime-titania type electrode for steel frames, bridges and sheet metals. Arc is soft, spatters are few, and arc restriking and slag removal are excellent in horizontal fillet welding. It can deposit a smooth and long bead.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G
A-17	Green	Scarlet	Z 3211 E4319-U	☆ A5.1 E6019	2.6 3.2 4.0 4.5 5.0 6.0 7.0	Ilmenite type electrode with excellent mechanical properties, crack resistance and X-ray quality. Operation is easy in all positions due to its soft arc and stable slag fluidity. It is extensively used throughout industry for all types of work.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G
A-10	Purple	Light green	Z 3211 E4319	☆ A5.1 E6019	2.0 2.6 3.2 4.0 4.5 5.0 6.0	Ilmenite type electrode with excellent operational characteristics and weldability. Sharp arc and excellent slag coverage assure beautiful bead appearance with fine ripples and without undercuts. Operational characteristics in vertical and overhead positions excel other ilmenite electrodes.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G
A-14	Scarlet	Red	Z 3211 E4319-U	☆ A5.1 E6019	2.6 3.2 4.0 4.5 5.0 6.0 7.0	Ilmenite type electrode with excellent weldability especially in vertical upward position. Beautiful bead appearance free from defects such as incomplete penetration and undercuts is obtained since manipulation is easy due to smooth flow of slag round to the front of weld and even solidification of molten metal. Weld metal shows good impact properties and ductility.
	Welding Position		[AWS/ASME]	F/1G	HF/2F	H/2G OH/4G VU/3G

Note : Figure of illustration relating to the symbol of welding position in the table mentioned above.



Typical Chemical Composition of Weld Metal (%)					Typical Mechanical Properties of Weld Metal			
C	Si	Mn	P	S	Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch at 0°C, J
0.08	0.12	0.42	0.018	0.012	410	470	28	110
0.07	0.17	0.39	0.015	0.009	435	490	28	100
0.07	0.19	0.41	0.018	0.014	430	460	30	110
0.07	0.08	0.46	0.015	0.012	390	450	29	-20°C 72
0.08	0.12	0.40	0.019	0.011	410	460	28	-20°C 73
0.08	0.13	0.53	0.018	0.010	400	460	30	-20°C 94