

## Covered Arc Welding Electrodes for Boiler Tube/Pipe

Brand Name	Identification Color		Specification		Dia. mm	Application and Characteristics		
	End	Secondary	JIS	AWS				
N-0S	Green	Light yellow	—	☆ A5.5 E7016-A1	2.6 3.2 4.0 5.0 6.0	N-0S is a extra low hydrogen type electrode with a 0.5% Mo steel core wire and is suitable for welding C-Mo steel to be used at high temperatures up to 500°C.		
	Welding Position		<u>AWS/ASME</u>	F/1G	HF/2F	H/2G	OH/4G	VU/3G
N-1S	White	Light yellow	—	☆ A5.5 E8016-B2	2.6 3.2 4.0 5.0 6.0	N-1S is a extra low hydrogen type electrode with a 1.25%Cr-0.5% Mo steel core wire and is suitable for welding 1~1.50%Cr-0.5%Mo steel to be used at high temperatures up to 550°C.		
	Welding Position		<u>AWS/ASME</u>	F/1G	HF/2F	H/2G	OH/4G	VU/3G
N-2S	Red	Light yellow	—	☆ A5.5 E9016-B3	2.6 3.2 4.0 5.0 6.0	N-2S is an extra low hydrogen type electrode with a 2.25%Cr-1%Mo steel core wire and is suitable for welding 2.25%Cr-1%Mo steel to be used at high temperatures up to 600°C. Weld Metal shows extremely high creep-rupture strength at 550-600°C.		
	Welding Position		<u>AWS/ASME</u>	F/1G	HF/2F	H/2G	OH/4G	VU/3G
N-HCM2S	Red	—	—	—	2.6 3.2 4.0	Low hydrogen type electrode suitable for HCM2S™ (2.25%Cr-1.6%W-Mo-Nb-V) steel such as ASTM T23/P23.		
	Welding Position		<u>AWS/ASME</u>	F/1G	HF/2F	H/2G	OH/4G	VU/3G
N-HCM12A	Cream	—	—	—	2.6 3.2 4.0 5.0	Low hydrogen type electrode suitable for HCM12A steel (11%Cr-2%W-0.4%Mo-Cu-Nb-V) such as ASTM T122/P122.		
	Welding Position		<u>AWS/ASME</u>	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				PWHT
C	Si	Mn	P	S	Others	Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch at 0°C, J	
0.06	0.51	0.60	0.012	0.006	Mo : 0.52	480	560	32	—	620°C×1h
0.06	0.45	0.60	0.013	0.006	Cr : 1.26 Mo : 0.51	570	660	27	—	690°C×1h
0.06	0.57	0.58	0.010	0.006	Cr : 2.29 Mo : 1.00	590	690	24	—	690°C×1h
0.06	0.41	0.80	0.004	0.002	Cr : 2.25 Mo : 0.10 Ni : 0.99 W : 1.6 Nb : 0.04 V : 0.3	875	980	21	28	As welded
						625	755	20	120	715°C×1h
0.08	0.25	0.84	0.004	0.001	Cr : 10.5 Mo : 0.20 Ni : 0.80 W : 1.4 Nb : 0.03 V : 0.18 Cu : 1.4	665	810	23	54	740°C×5h

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