

## For 3.5%Ni Low Temperature Service Steel

### DESCRIPTION

Welding of 3.5%Ni steel such as ASTM A203 Gr. D, E and JIS SL3N for pressure vessels and storage tanks.

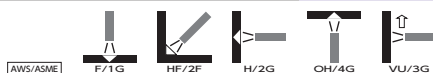
### APPLICATION

N-13NM is a low hydrogen type electrode for all positions. Weld metal shows excellent low temperature toughness under postweld heat treatment (PWHT)

### PROCEDURE

1. Electrodes should be redried at 350~400°C for 60 minutes before use.
2. Preheating at 60~100°C is necessary depending on plate thickness. When stress-relief annealing is required, keep temperature below 610°C and increase cooling speed as much as possible.
3. Backstep method should be applied to prevent blowholes and pits at arc starting and arc length should be kept as short as possible during welding.
4. All water, rust and oil in groove should be completely removed to prevent cracks and blowholes.
5. Keep the proper heat in put to present from the deterioration of mechanical properties.

### WELDING POSITION



### ■ TYPICAL CHEMICAL COMPOSITION OF WELD METAL ( % )

C	Si	Mn	P	S	Ni	Mo
0.03	0.24	0.82	0.010	0.008	3.44	0.10

### ■ TYPICAL MECHANICAL PROPERTIES OF WELD METAL

Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch, J		PWHT
			-105°C	-80°C	
430	530	30	98	130	610°C×2h

### ■ SIZE & RECOMMENDED CURRENT RANGE<AC or DC ( + )>

Diameter (mm)		3.2	4.0	5.0
Length (mm)		350	400	400
Amp.	F, H-Fil	90~130	130~180	180~240
	V-up, OH	80~120	110~170	—

Identification color: End-Light green, secondary-Red