

SR-08

SHIELDED METAL ARC WELDING CONSUMABLES
FOR WELDING OF 9% Ni STEELS

2019.11

HYUNDAI WELDING CO., LTD.



❖ Specification

AWS / ASME SFA 5.11

ENiMo-8

❖ Applications

Welding of 9%Ni steel for cryogenic storage tanks for LNG, Liquified nitrogen, etc.

❖ Characteristics on Usage

SR-08 is an Ni-alloy electrode. Weld metal shows excellent strength and toughness at cryogenic

❖ Note on Usage

AC

❖ Packing

	Size mm(in)	3.2(1/8)	4.0(5/32)	5.0(3/16)
	Length mm(in)	350(14)	350(14)	350(14)
Amp.	F	80~120	100~150	140~190
	V-up & OH	65~110	90~140	

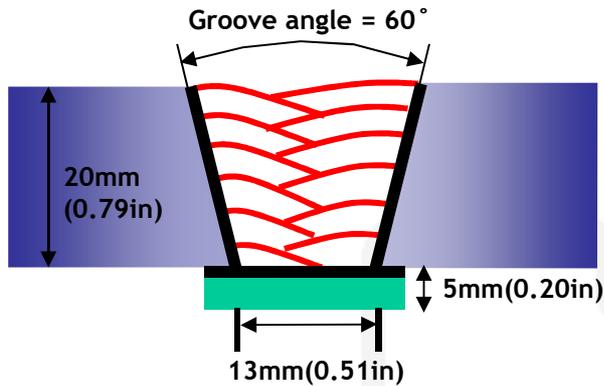
❖ Approval



Mechanical Properties & Chemical Composition of All Weld Metal (AWS Rules)

❖ Welding Conditions

Method by AWS Rules



Diameter	: 4.0mm(5/32in)
Amp./ Volt.	: 150/25
Pre-Heat	: R.T .
Interpass Temp.	: 150±15°C(302±59°F)
Position	: Flat
Polarity	: AC

[Joint Preparation & Layer Details]

❖ Mechanical Properties of the weld metal

Consumables	Tensile Test Results			CVN Impact Test Joule(ft·lbs)
	YS MPa (lbs/in ²)	TS MPa (lbs/in ²)	EI(%)	-196°C(-320°F)
SR-08	500(72,500)	745(108,000)	37.0	70 (52)
AWS A5.11 ENiMo-08	-	≥650(94,000)	≥ 25	Not Specified

❖ Chemical Analysis of the weld metal(wt%)

Consumable	Chemical Composition (%)									
	C	Si	Mn	P	S	Ni	Cr	Mo	W	Fe
SR-08	0.043	0.28	0.37	0.001	0.001	68.6	2.67	18.1	3.17	6.42
AWS A5.11 ENiMo-8	≤0.10	≤0.75	≤1.5	≤0.02	≤0.015	≥60.0	0.5~ 3.5	17.0~ 20.0	2.0~ 4.0	≤10.0

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



CTOD Test (9%Ni Steel)

❖ Test plate

Item	CTOD Test
Base Metal Groove	ASTM A553 Type 1` 15.5t x 400W x 600L X-Groove (Top : 60°, Bottom : 90°)

❖ Welding Condition

Item	Position	Polarity	Current	Voltage	Preheat Temp. °C(°F)	Interpas Temp. °C(°F)
CTOD Test	V-up	AC	135	-	23(73.4)	35(95) - 120(248)

❖ Test Result

Item	PWHT	Test Temp. °C(°F)	CTOD Vale Mm(in)
Result	AW	-196(-321)	0.40(0.016)

Specimen Type : BS7448 : Part 1 & Part 2
Location of machined notch : at the center of deposited metal
AW = As Welded



Bending test

❖ **Bending Test (Bending Radius: 180°)**



Face Bending



Root Bending



Side Bending

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Bead Appearance

❖ Bead Appearance



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