

Rev. 08



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

2020.12

HYUNDAI WELDING CO., LTD.

				SR-	134
Specification	AWS A5.11 JIS Z 3225	ENiCrFe-4 D9Ni-1			
Applications	Welding of 9%Ni stee Liquified nitrogen, etc	el for cryogenic c.	storage tanks	for LNG,	
 Characteristics on Usage 	SR-134 is an Ni-all strength and toughne specifications of API permits easy operatic	oy electrode. ess at cryogenic and NV for the on free from arc	Weld metal she c temperatures welding of 9% c blow.	ows excellent s and meets the 6Ni steel. With A	.C, it
Note on Usage	AC				
* Packing	Size mm(in)	3.2(1/8)	4.0(5/32)	5.0(3/16)	

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

*Approval

SR-134

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

Welding Conditions



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

Method by AWS Rules

[Joint Preparation & Layer Details]

* Mechanical Properties of the weld metal

Consumables		Tensile Test Results		CVN Impact Test Joule(ft·lbs)
Consumables	YS MPa (Ibs/in²)	TS MPa (Ibs/in²)	EI(%)	-196℃(-320°F)
SR-134	440(63,800)	700(101,500)	40.5	56(41)
AWS A5.11 ENiCrFe-4	_	≥650(94,000)	≥ 20	Not Specified

Chemical Analysis of the weld metal(wt%)

Consumables	Chemical Composition (%)									
Consumables	С	Si	Mn	Ρ	S	Ni	Cr	Мо	Nb	Fe
SR-134	0.10	0.5	3.0	0.005	0.005	65.7	155	2.4	2.0	10.3
AWS A5.11 ENiCrFe-4	≤0.20	≤1.0	1.0~ 3.5	≤0.03	≤0.02	≥60.0	13.0~ 17.0	1.0~ 3.5	1.0~ 3.5	≤12.0

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**

ltem	CTOD Test	
Base	ASTM A553 Type 1`	
Metal	17.5t x 400W x 600L	
Groove	X-Groove (Top : 60°, Bottom : 90°)	

Welding Condition

ltem	Position	Polarity	Current	Voltage	Preheat Temp.℃(°F)	Interpas Temp.℃(°F)
CTOD Test	V-up	AC	140	_	23(73.4)	40(104) - 135(275)

***Test Result**

ltem	PWHT	Test Temp ℃(°F)	CTOD Vale mm(in)			
Result	AW	-170(-274)	0.30(0.012)			
Spec.	AW	-170(-274)	Min 0.17(0.007)			
Specimen Type : BS7448 : Part 1 & Part 2 Location of machined notch : at the center of deposited metal AW = As Welded						

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Hardness Test (9%Ni Steel)

Vickers Hardness Test (Hv10)



Base Metal 9%Ni Steel (17.4T)

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Bending test (9%Ni Steel)

* Bending Test (Bending Radius: 180°)



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Bead Appearance

Sead Appearance



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