

SW-82H

FLUX CORED ARC WELDING CONSUMABLES
FOR WELDING OF 9% Ni STEELS

2021.10



❖ Specification

AWS A5.34

ENiGT1-1/-4 (61Ni, 18Cr, 11Mo, 2Nb)

❖ Applications

Cryogenic applications(9% Ni steels)

❖ Characteristics on Usage

Good impact value at cryogenic temperature

Good Tensile strength

❖ Note on Usage

Use Ar+20~25%CO2 gas , 100% CO2 Gas

❖ Packing

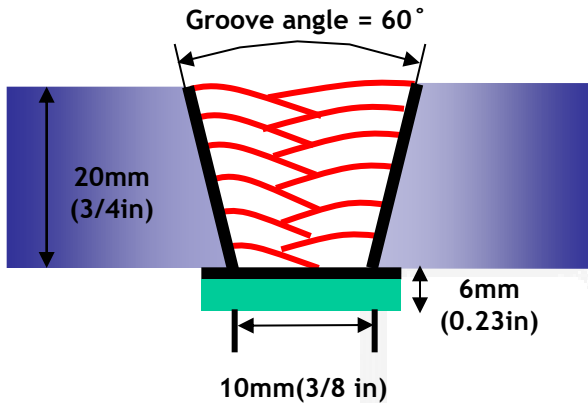
Dia.	1.2mm (0.045in)	
Spool(Kg)	12.5kg (27.6lbs)	15kg (33lbs)



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm
Shielding Gas	: 100% CO2
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 200 / 30
Stick-Out(mm)	: 20
Pre-Heat(°C)	: R.T .
Polarity	: DC(+)

❖ Mechanical Properties of the All weld metal

Consumables	Tensile Test			CVN Impact Test	
	YS(MPa)	TS(MPa)	EL(%)	Temp.(°C)	Absorbed Energy (Joule)
SW-82H	445	725	45.6	-196	74
Manufacturer's Spec.	-	≥ 690	≥ 25	-	≥ 27

❖ Chemical Analysis of the All weld metal(wt%)

Consumables	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Nb	Fe
SW-82H	0.01	0.45	3.21	0.002	0.003	61.6	18.1	10.8	0.1	1.9	3.77
Manufacturer's Spec.	≤0.1	≤1.0	2.0~3.5	≤0.030	≤0.030	≥61	15.0~19.0	10.0~12.0	≤1.0	1.5~2.5	≤5.0

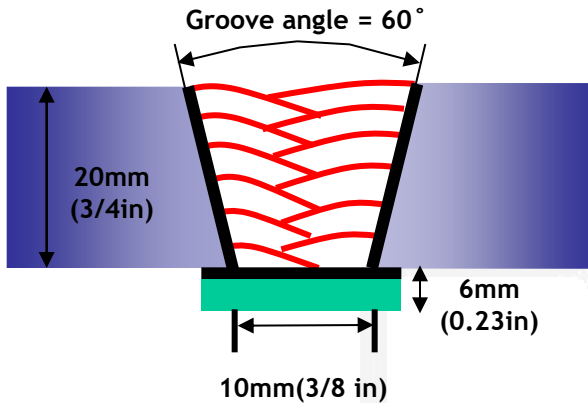
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING 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.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm
Shielding Gas	: Ar+20% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 200 / 29
Stick-Out(mm)	: 20
Pre-Heat(°C)	: R.T .
Polarity	: DC(+)

❖ Mechanical Properties of the All weld metal

Consumables	Tensile Test			CVN Impact Test	
	YS(MPa)	TS(MPa)	EL(%)	Temp.(°C)	Absorbed Energy (Joule)
SW-82H	450	750	40.8	-196	71
Manufacturer's Spec.	-	≥ 690	≥ 25	-	≥ 27

❖ Chemical Analysis of the All weld metal(wt%)

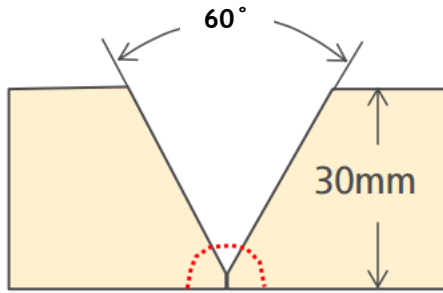
Consumables	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Nb	Fe
SW-82H	0.01	0.46	3.35	0.002	0.003	61.8	18.6	10.9	0.1	2.0	2.75
Manufacturer's Spec.	≤0.1	≤1.0	2.0~3.5	≤0.030	≤0.030	≥61	15.0~19.0	10.0~12.0	≤1.0	1.5~2.5	≤5.0

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Mechanical Properties & Chemical Composition of Weld Metal

❖ Welding Conditions



[Joint Preparation & Layer Details]

Parent Metal	: 9% Ni STEEL
Diameter(mm)	: 1.2mm
Shielding Gas	: 100% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 1G 150~200 / 26~31 2G 140~160 / 25~27 3G 140~160 / 25~27
Stick-Out(mm)	: 20
Pre-Heat(°C)	: R.T .
Polarity	: DC(+)

❖ Mechanical Properties of the weld metal

Consumables	Welding Position	Tensile Test		CVN Impact Test	
		TS(MPa)	Temp.(°C)	Absorbed Energy (Joule)	
SW-82H	1G	741	-196	80	
	2G	737		82	
	3G	730		79	
DNV		≥ 640	-	≥ 27	

❖ Chemical Analysis of the weld metal(wt%)

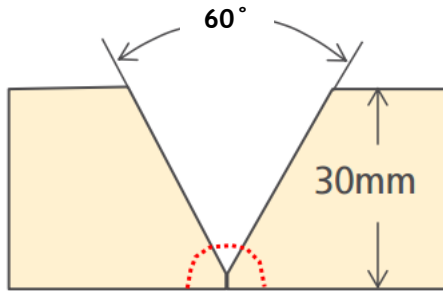
Consumables	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Nb	Fe
SW-82H	0.01	0.20	1.94	0.003	0.003	Bal.	18.8	10.6	0.20	1.97	1.9

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Mechanical Properties & Chemical Composition of Weld Metal

❖ Welding Conditions



[Joint Preparation & Layer Details]

Parent Metal	: 9% Ni STEEL
Diameter(mm)	: 1.2mm
Shielding Gas	: Ar + 20% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 1G 150~200 / 25~30 2G 140~160 / 24~26 3G 140~160 / 24~26
Stick-Out(mm)	: 20
Pre-Heat(℃)	: R.T .
Polarity	: DC(+)

❖ Mechanical Properties of the weld metal

Consumables	Welding Position	Tensile Test	CVN Impact Test	
			Temp.(℃)	Absorbed Energy (Joule)
SW-82H	1G	737	-196	90
	2G	734		95
	3G	738		96
DNV		≥ 640	-	≥ 27

❖ Chemical Analysis of the weld metal(wt%)

Consumables	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Nb	Fe
SW-82H	0.01	0.20	2.05	0.003	0.003	Bal.	18.7	10.7	0.18	2.09	1.4

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Approvals

Consumables	Shielding gas	DNV	LR	NK	RS	ABS	BV	KR
SW-82H	100% CO2 (C1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Ar+15~25% CO2 (M21)	<input type="radio"/>	<input type="radio"/>					

