

SW-316L Cored

FLUX CORED ARC WELDING CONSUMABLE
FOR WELDING OF 18% Cr-12% Ni 2% Mo STAINLESS STEEL



SW-316L Cored

❖ Specification

AWS A5.22	E316LT1-1/-4
JIS Z3323	TS316L-FB1
EN ISO 17633-A	T19 12 3 LP M21/C1 2

❖ Applications

SW-316L Cored is designed for welding of 18%Cr-12%Ni 2%Mo stainless steels.

❖ Characteristics on Usage

1. SW-316L Cored is suitable for all position welding makes easier re-arc-ing, beautiful bead appearance and better slag removability. Due to ferrite contents in the weld metals austenite structure, it has excellent crack resistance

❖ Note on Usage

Use 100% CO₂ gas or Ar+20~25% CO₂ gas

❖ Packing

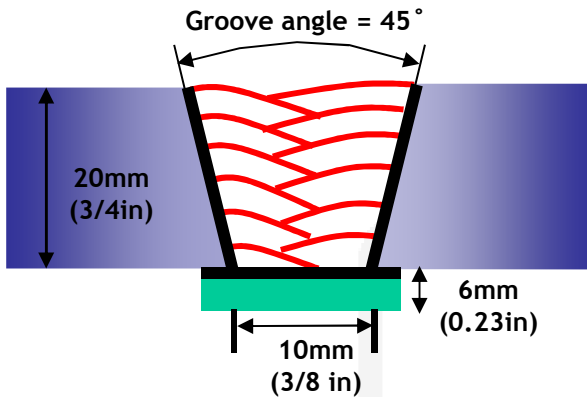
Diameter	1.2mm (0.045in)	1.4 (0.052in)	1.6 (1/16in)	
Spool *including ball pac	5kg (11lbs)	12.5kg (28lbs)	15kg (33lbs)	20kg (44lbs)



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm(0.045in)
Shielding Gas	: 100% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 210/30
Stick-Out(mm)	: 20(3/4 in)
Pre-Heat(°C)	: R.T . °C(°F)
Interpass Temp.(°C)	: ≤150°C(302°F)
Polarity	: DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS (Mpa/ksi)	EL (%)	-20°C (-4°F)	-60°C (-76°F)
SW-316L Cored	550(80)	45.6	55(40.5)	45(33.2)
AWS A5.22 E316LTX-X	≥ 485	≥ 30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)

Consumable	Shielding Gas	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SW-316L Cored	100%CO ₂	0.025	0.90	1.25	0.013	0.008	11.80	17.54	2.63	0.032
AWS A5.22 E316LTX-X		≤0.04	≤1.0	0.5~ 2.5	≤0.03	≤0.025	10.0~ 13.0	17.0~ 20.0	2.0~3.0	≤0.3

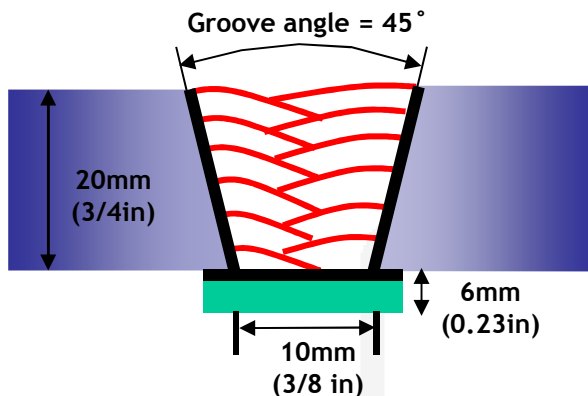
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING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



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm(0.045in)
Shielding Gas	: Ar+200% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 210/29
Stick-Out(mm)	: 20(3/4 in)
Pre-Heat(°C)	: R.T. . °C(°F)
Interpass Temp.(°C)	: ≤150°C(302°F)
Polarity	: DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS (Mpa/ksi)	EL (%)	-20°C (-4°F)	-60°C (-76°F)
SW-316L Cored	555(80)	42.4	55(40.6)	45(33.2)
AWS A5.22 E316LTX-X	≥ 485	≥ 30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)





Consumable	Shielding Gas	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SW-316L Cored	Ar+ 20% CO ₂	0.025	0.92	1.38	0.013	0.008	11.73	17.54	2.63	0.032
AWS A5.22 E316LTX-X		≤0.04	≤1.0	0.5~ 2.5	≤0.03	≤0.025	10.0~ 13.0	17.0~ 20.0	2.0~3.0	≤0.3

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**

❖ **Bead Appearance**

Horizontal Fillet(2F, PB) , Base : STS 304L(6mm,0.23in)	Fillet Vertical up(3F, PF) , Base : STS 304L(6mm,0.23in)	
		
<p>100% CO2(220A/30V)</p>		
	<p>100% CO2(160A/25V)</p>	<p>Ar+20% CO2(160A/24V)</p>
<p>Ar+ 20% CO2(220A/28V)</p>		

❖ **δ – Ferrite No.**

Consumable	Shielding Gas	Diagram			FERITSCOPE MP-30 * (FISCHER)
		Schaeffler	DeLong	WRC(1992)	
SW-316L Cored	100% CO2	7.2	11.1	6.1	3~8
	Ar+20% CO2	7.5	10.5	6.2	3~8

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.



SW-316L Cored

Welding Efficiency & Proper Welding Condition

❖ Deposition Rate & Efficiency

Consumable (size)	Shielding Gas	Welding Conditions		Wire Feed Speed m/min (in/min)	Deposition Efficiency(%)	Deposition Rate kg/hr(lb/hr)
		Amp. (A)	Volt. (V)			
1.2mm (0.045 in)	100%CO ₂	210	30	12(472)	86~88	4.6(10.1)
	Ar-20%CO ₂	210	29	12(472)	87~89	4.8(10.6)
1.6mm (1/16 in)	100%CO ₂	290	33	8.9(350)	86~88	5.5(12.1)
	Ar-20%CO ₂	290	32	8.9(350)	87~89	5.(12.6)
Remark					Deposition efficiency =(Deposited metal weight/Wire weight used)×100	Deposition rate =(Deposited metal weight/Welding time,min.)×60

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia.	
			1.2mm (0.045 in)	1.6mm (1/16 in)
SW-316L Cored	100%CO ₂ or Ar-20~25%CO ₂	F	160~220Amp	250~290Amp
		HF	160~220Amp	250~290Amp
		V-Up & OH	140~180Amp	-

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.



Approvals

Consumable	Shielding Gas	KR	ABS	LR
SW-316L Cored	C1	RW316LG(C) (-60 °C ≥ 34J) 1.2~1.6	AWS A5.22 E316LT1-1 0.9~1.6	316L 1.2~1.6
		BV	DNV	GL
		316L (-60 °C) 1.2~1.6	316L 1.2~1.6	4435S 0.9~1.6
		NK	CWB	TUV
		KW316LG(C) 1.2~1.6	AWS A5.22-95 E316LT1-1 0.9~1.6	EN 12073 T 19 12 3 L P C2 0.9~1.6
		CE	DB	CCS
		EN 12073 T 19 12 3 L P C2 0.9~1.6	T 19 12 3 L P C 2(1.4430) DIN EN ISO 17633-A 0.9~1.6	316L 0.9~1.6
Consumable	Shielding Gas	ABS	CWB	TUV
SW-316L Cored	M21	AWS A5.22 E316LT1-4 (75~80% Ar+ Bal. CO ₂) 0.9~1.6	AWS A5.22-95 E316LT1-4 0.9~1.6	EN 12073 T 19 12 3 L P M2 0.9~1.6
		CE	DB	-
		EN 12073 T 19 12 3 L P M2 0.9~1.6	T 19 12 3 L P M 2(1.4430) DIN EN ISO 17633-A 0.9~1.6	-

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.