

Supercored 316L

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



Supercored 316L

❖ Specification

AWS A5.22	E316LT0-1/-4
JIS Z3323	TS316L-FB0
EN ISO 17633-A	T 19 12 3 L R M21/C1 3

❖ Applications

Supercored 316L is designed for welding of low carbon 18%Cr- 12% Ni -2% Mo stainless steels or for the welding of dissimilar joint of stainless steels

❖ Characteristics on Usage

Supercored 316L gives good arc stability and easy slag removal due to its low carbon content. It has excellent resistance against granular Corrosion.

❖ Note on Usage

Use 100% CO₂ gas or Ar+20~25% CO₂ gas

❖ Packing

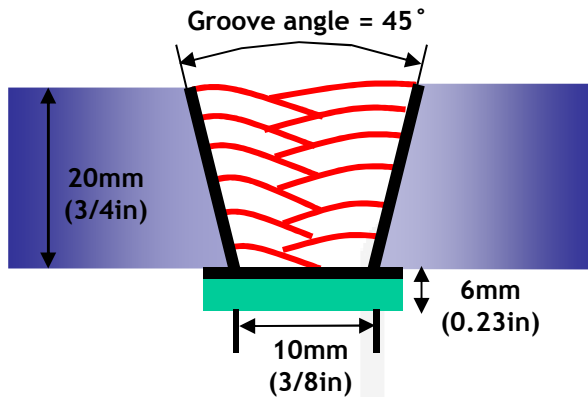
Dia.(mm)	0.9mm (0.035in)	1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
Spool (kg) *including ball pac	5Kg (11lbs)	12.5Kg (28lbs)	15Kg (33lbs)	20Kg (44lbs)



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 / 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

Consumables	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS(MPa)	EI(%)	-20°C (-4°F)	-60°C (-76°F)
Supercored 316L	539(78)	34.4	49(36.2)	41(30.3)
AWS A5.22 E316LTX-X	≥485(70)	≥ 30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)

Consumable	Shielding Gas	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu
Supercored 316L	100%CO ₂	0.024	0.47	1.33	0.018	0.007	12.38	18.77	2.64	0.032
AWS A5.22 E316LTX-X		≤0.04	≤1.2	≤2.0	≤0.03	≤0.025	10.0~13.0	17.0~20.0	2.0~3.0	≤0.3

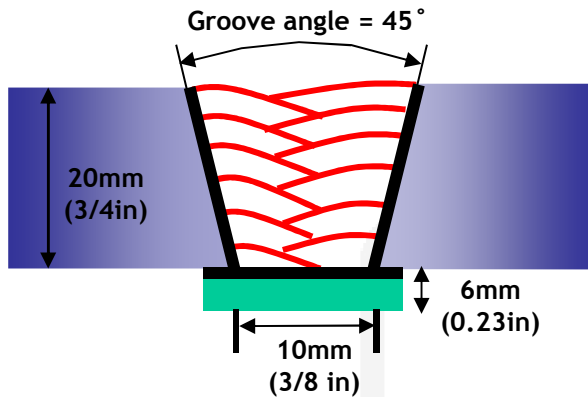
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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm(0.045in)
Shielding Gas	: Ar+ 20% CO2
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)	EI(%)	-20°C (-4°F)	-60°C (-76°F)
Supercored 316L	537(78)	42	46(33.9)	42(40.0)
AWS A5.22 E316LTX-X	≥485(70)	≥ 30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)

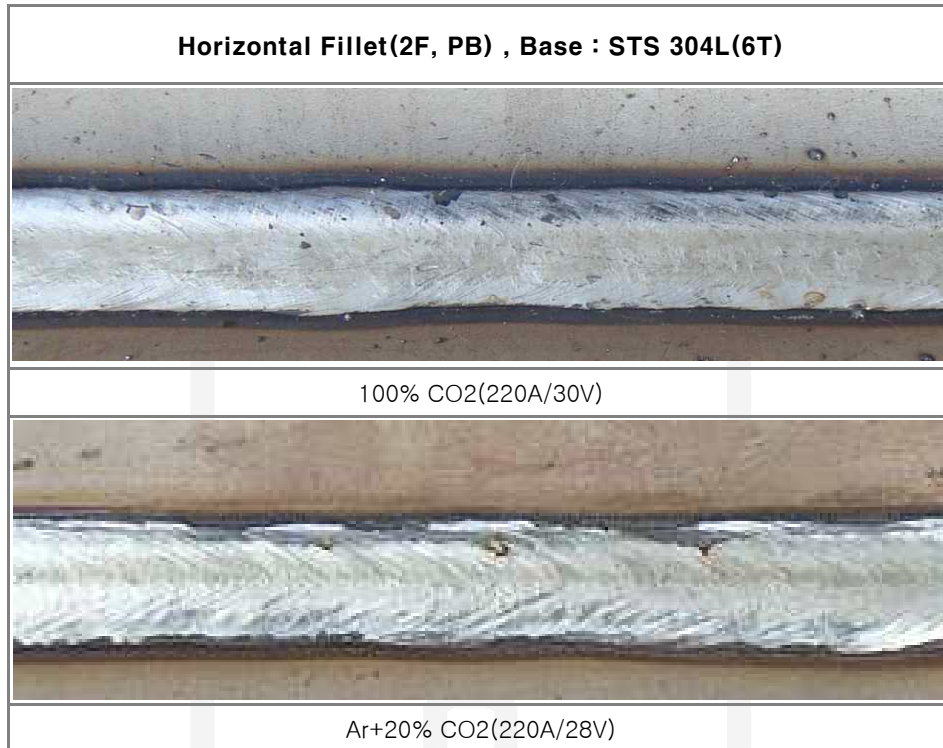
Consumable	Shielding Gas	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu
Supercored 316L	Ar+ 20% CO2	0.025	0.57	1.48	0.018	0.007	12.30	18.98	2.64	0.030
AWS A5.22 E316LTX-X		≤0.04	≤1.2	≤2.0	≤0.03	≤0.025	10.0~ 13.0	17.0~ 20.0	2.0~3.0	≤0.3

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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Bead Appearance



❖ δ – Ferrite No.

Consumable	Shielding Gas	Diagram			FERITSCOPE MP-30 * (FISCHER)
		Schaeffler	Delong	WRC(1992)	
Supercored 316L	100% CO ₂	7.0	11.1	9.0	9.0~9.5
	Ar+20% CO ₂	7.7	10.5	9.1	9.0~9.5

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SW-308L 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-308L Cored	100%CO ₂ or Ar-20~25%CO ₂	F	160~220Amp	250~290Amp
		HF	160~220Amp	250~290Amp

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Approvals

❖ AUTHORIZED APPROVAL DETAILS

Consumable	Shielding Gas	TUV	CE	DB
Supercored 316L	C1	EN 12073 T 19 12 3 L R C 3 0.9~1.6	EN 12073 T 19 12 3 L R C 3 0.9~1.6	T 19 12 3 L R C 3(1.4430) DIN EN ISO 17633-A 0.9~1.6

Consumable	Shielding Gas	LR	BV	DNV
Supercored 316L	M 21	316L	316L	316L (-20℃)
		0.9~1.6	0.9~1.6	0.9~1.6
		GL	TUV	CE
		4435S	EN 12073 T 19 12 3 L R M 3	EN 12073 T 19 12 3 L R M 3
		0.9~1.6	0.9~1.6	0.9~1.6
		DB		
		T 19 12 3 L R M 3(1.4430) DIN EN ISO 17633-A 0.9~1.6		

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