

Supercored 309L

FLUX CORED ARC WELDING CONSUMABLE
FOR WELDING OF DISSIMILAR METALS
STAINLESS STEELS AND CARBON STEELS
OR STAINLESS STEELS AND LOW ALLOY METALS

2021.02

HYUNDAI WELDING CO., LTD.



Supercored 309L

❖ Specification

AWS A5.22	E309LT0-1/-4
JIS Z 3323	TS309L-FB0
EN ISO 17633-A	T 23 12 L R M21/C1 3

❖ Applications

Supercored 309L is designed for welding of dissimilar metals such as Stainless steels and carbon steels or stainless steels and low alloy steels.

❖ Characteristics on Usage

1. Supercored 309L which contains a high ferrite level in its austenite Structure has excellent heat and corrosion resistibility. It has a good Stable arc and excellent slag removal properties.

❖ Note on Usage

Use 100% CO₂ gas or Ar+20~25% CO₂ gas

❖ Packing

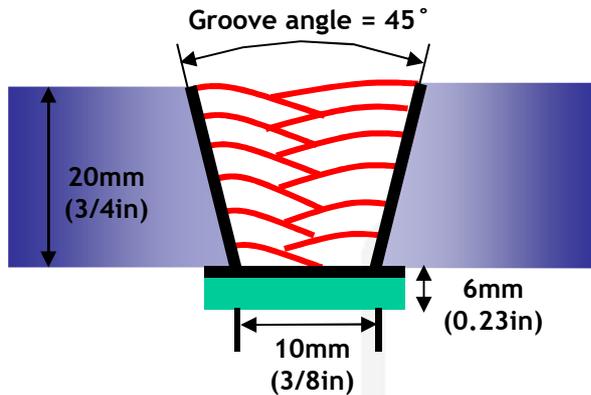
Dia.(mm)	0.9mm (0.035in)	1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
Spool (kg) *including ball pac	5Kg (11lbs)	12.5Kg (28lbs)	15Kg (33lbs)	20Kg (44lbs)



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

Consumable	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS (MPa/lbs/in ²)	El (%)	-20°C (-4°F)	-60°C (-76°F)
Supercored 309L	565(81,925)	34.2	42(31.0)	33(24.4)
AWS A5.22 E309LTX-X	≥ 520(75,400)	≥ 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 309L	100%CO ₂	0.030	0.46	1.55	0.020	0.010	12.4 7	23.2 5	0.12	0.11
AWS A5.22 E309LTX-X		≤0.0 4	≤1. 0	0.5 ~2.5	≤0.0 4	≤0.03	12.0 ~14. 0	22.0 ~25. 0	≤ 0.5	≤ 0.5

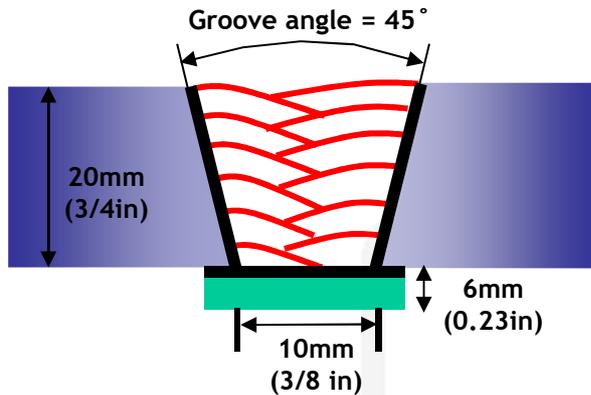
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING 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+ 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/lbs/in ²)	El (%)	-20°C (-4°F)	-60°C (-76°F)
Supercored 309L	572(82,940)	34.4	35(25.8)	34(25.1)
AWS A5.22 E309LTX-X	≥ 520(75,400)	≥ 30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)

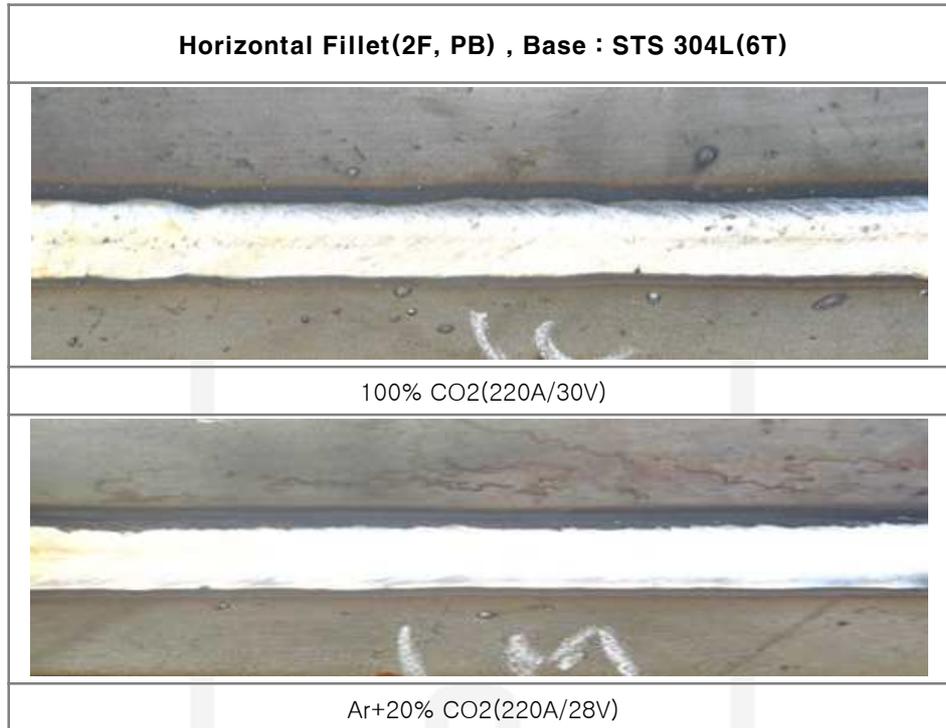
Consumable	Shielding Gas	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu
Supercored 309L	Ar+ 20% CO2	0.033	0.50	1.61	0.020	0.006	12.3 7	23.5 3	0.12	0.12
AWS A5.22 E309LTX-X		≤0.0 4	≤1. 0	0.5 ~2.5	≤0.0 4	≤0.03	12.0 ~14. 0	22.0 ~25. 0	≤ 0.5	≤ 0.5

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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 309L	100% CO2	10.4	18.8	16.6	17.5~18.5
	Ar+20% CO2	11.1	19.6	17.5	17.5~18.5

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Approvals

❖ AUTHORIZED APPROVAL DETAILS

Consumable	Shielding Gas	TUV	CE	DB
Supercored 309L	C1	EN 12073 T 23 12 L R C3 0.9~1.6	EN 12073 T 23 12 L R C3 0.9~1.6	T 23 12 L R C 3(1.4332) DIN EN ISO 17633-A 0.9~1.6

Consumable	Shielding Gas	LR	BV	DNV
Supercored 309L	M 21	SS/CMn 0.9~1.6	309L 0.9~1.6	309L (-20°C) 0.9~1.6
		TUV	CE	DB
		EN 12073 T 23 12 L R M3 0.9~1.6	EN 12073 T 23 12 L R M3 0.9~1.6	T 23 12 L R M 3(1.4332) DIN EN ISO 17633-A 0.9~1.6

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