S–309MoL.16

SHIELDED METAL ARC WELDING CONSUMABLE
FOR WELDING OF DISSMILAR METALS
STAINLESS STEELS AND CARBON STEELS
OR STAINLESS STEELS AND LOW ALLOY METALS

2020.12

HYUNDAI WELDING CO., LTD.

S -309MoL.16

❖ **Specification**

AWS A5.4	E309LMo-16
JIS Z 3221	ES309LMo-16
EN ISO 3851-A	E 23 12 2 L R

❖ **Applications**

S-309MoL.16 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. S-308MoL.16 is a lime- titania type electrode.

2 .S-309MoL.16 is for dissimilar welding

such as stainless steel to carbon steel or low-alloy steels, and for

under-layer welding on cladded side groove of cladded stainless

steel.

❖ **Note on Usage**

1. it is mostly effective to proceed with welding. Keeping the arc as short as possible in flat position.
2. Remove dirts such as oil and dust from the groove.
3. Dry the electrode at 350℃(662°F) for 60 minutes before use.
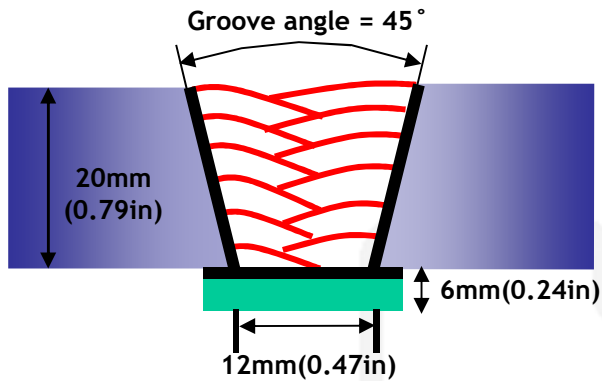
❖ **Type of Current**

AC or DC+

❖ **Packing**

Packet	2.5kg(5.5lbs)
Carton	2.5kg(5.5lbs) X 4 : 10kg(22lbs)

S-309MoL.16

Mechanical Properties
& Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.

Groove angle = 45°

20mm (0.79in)

6mm(0.24in)

12mm(0.47in)

[Joint Preparation & Layer Details]

Diameter	: 4.0mm(5/32in)
Amp./ Volt.	: 140/25
Travel speed	: 13~18(Cm/min)
Pre-Heat	: R.T .
Interpass Temp.	: 150±15℃(302±59°F)
Position	: Flat
Polarity	: AC or DC+

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test Joule(ft·lbs)	
S-309MoL.16	TS MPa (lbs/in^2)	El(%)	−20℃(−4°F)	−60℃(−76°F)
	690(99,000)	33.8	45(33)	35(26)
AWS A5.4 E309MoL−XX	≥520(75,000)	≥30	Not Specified	

❖ Chemical Analysis of All weld metal(wt%)

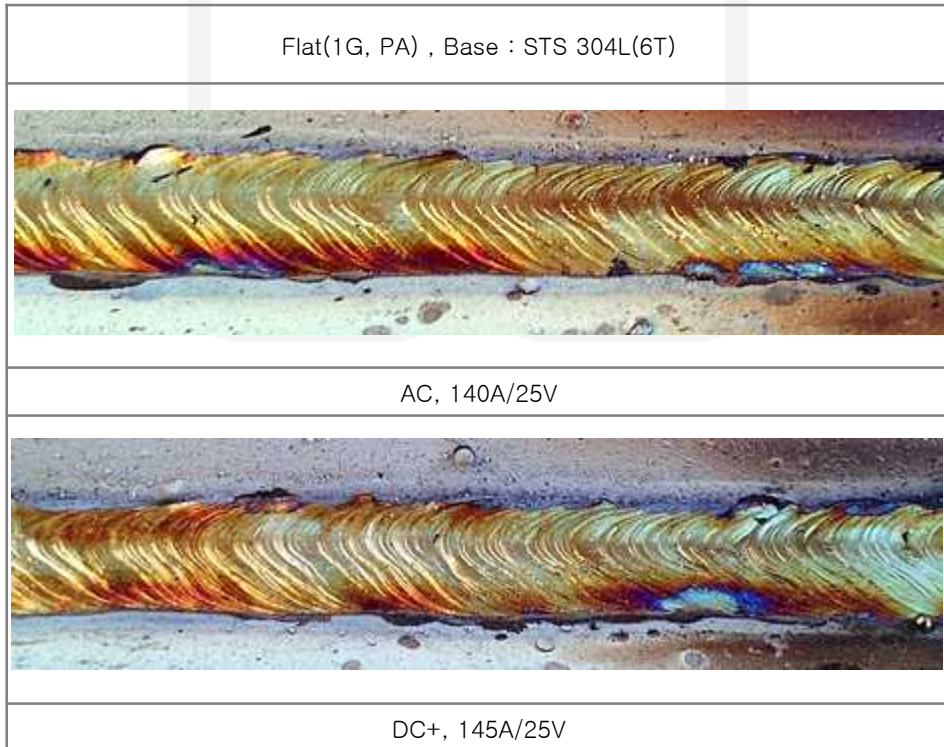| Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
S-309MoL.16	0.02	0.72	1.30	0.027	0.013	12.7	23.7	2.4	0.015
AWS A5.4 E309LMo−XX	≤0.04	≤1.0	0.5 ~2.5	≤0.04	≤0.03	12.0 ~14.0	22.0 ~25.0	2.0 ~3.0	≤0.75

Mechanical Properties
& Chemical Composition of All Weld Metal

❖ δ – Ferrite No.

Consumable	Diagram			FERITSCOPE MP-30 * (FISCHER)
	Schaeffler	Delong	WRC(1992)	
S-309MoL.16	11.5	18.0	12.5	14~19

❖ Bead Appearance

Flat(1G, PA) , Base : STS 304L(6T)
AC, 140A/25V
DC+, 145A/25V

Approvals

❖ **AUTHORIZED APPROVAL DETAILS**

Consumable	DNV	TUV	CE
S–309MoL.16	309LMo 2.0~5.0	EN 1600 E 23 12 2 L R 2.0~5.0	EN 1600 E 23 12 2 L R 2.0~5.0