HYUNDAI WELDING

Rev. 00

S - 316LT.16

SHIELDED METAL ARC WELDING CONSUMABLE
FOR WELDING OF 18% Cr-12% Ni-2% Mo STAINLESS STEEL
FOR CRYOGENIC APPLICATIONS

HYUNDAI WELDING CO., LTD.

S -316LT.16

❖ Specification

AWS A5.4	E316L-16
JIS Z3221	ES316L-16
EN 1600	E 19 12 3 L R

❖ Applications

Welding of Extra-low carbon of 18%Cr-12%Ni-2%Mo stainless Steels. (316L Type steel).

❖ Characteristics on Usage

1.The storage and distribution of various gases including liquefied natural gas(LNG) requires materials that have good mechanical properties, particularly toughness, at low temperatures.

2. S-316LT.16 is a lime-titania type electrode for cryogenic applications, low carbon 316L austenitic steel(18%Cr-12%Ni-2%Mo) with good usability.

3. It is quite efficient because its burn-off rate and deposition rate are high because comparatively high amperage can be used.

❖ 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+

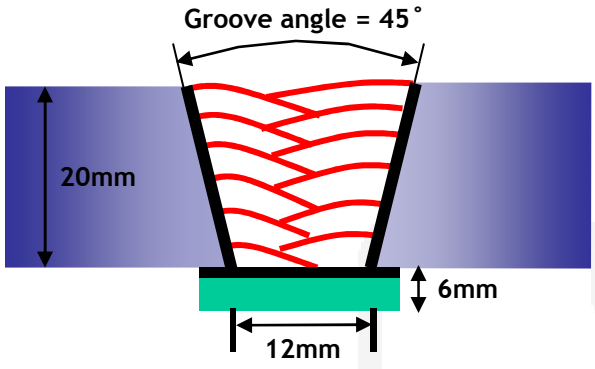
❖ Packing

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

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

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

❖ Chemical Analysis of All weld metal(wt%)

Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
S-316LT.16	0.035	0.55	1.59	0.021	0.016	13.51	18.45	2.52	0.24
AWS A5.4 E316L-XX	≤0.04	≤1.0	0.5~ 2.5	≤0.04	≤0.03	11.0~ 14.0	17.0~ 20.0	2.0~ 3.0	≤ 0.75

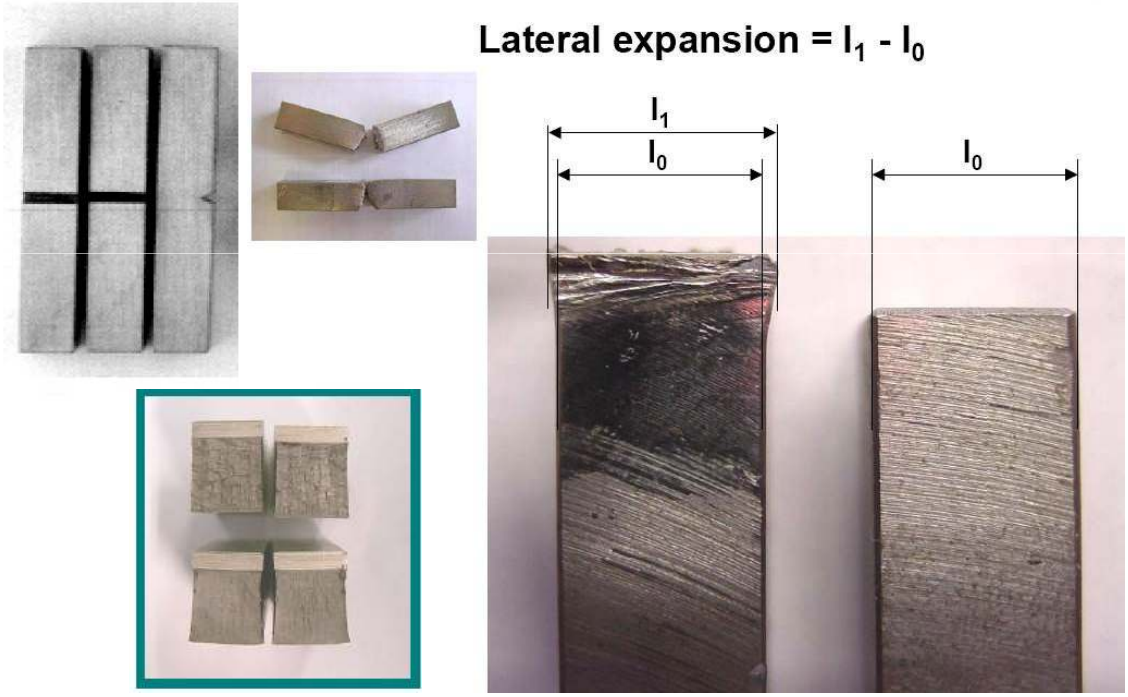
❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		
S-316LT.16	TS(MPa)	El(%)	CVN Impact Test (Joule)
	546	40.6	40
AWS A5.4 E316L-XX	≥490	≥ 30	LR≥27

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Lateral expansion

Consumable	Lateral expansion (mm)					
	X1	X2	X3	X4	X5	Avg.
S-316LT.16	0.44	0.85	0.59	0.58	0.55	0.60
ASME B31-3	≥0.38					



Mechanical Properties & Chemical Composition of All Weld Metal

❖ δ – Ferrite No.

Consumable	Diagram			FERITSCOPE MP-30 * (FISCHER)
	Schaeffler	Delong	WRC(1992)	
S-316LT.16	1.3	1.9	1.3	0.5~1.0

❖ Bead Appearance

Flat(1G, PA) , Base : STS 304L(6T)

AC, 140A/25V

DC+, 145A/25V