HYUNDAI WELDING

Rev. 04

S - 308LT.16

SHIELDED METAL ARC WELDING CONSUMABLE
FOR WELDING OF 18% Cr-8% Ni STAINLESS STEEL
FOR CRYOGENIC APPLICATIONS

2020.12

HYUNDAI WELDING CO., LTD.

S -308LT.16

❖ Specification

AWS A5.4	E308L-16
JIS Z 3221	ES308L-16
EN ISO 3581-A	E 19 9 L R

❖ Applications

Welding of Extra-low carbon 18%Cr-8%Ni stainless steel (304L 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-308LT.16 is a lime-titania type electrode for cryogenic applications, low carbon 304L austenitic steel(18%Cr-8%Ni) 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+

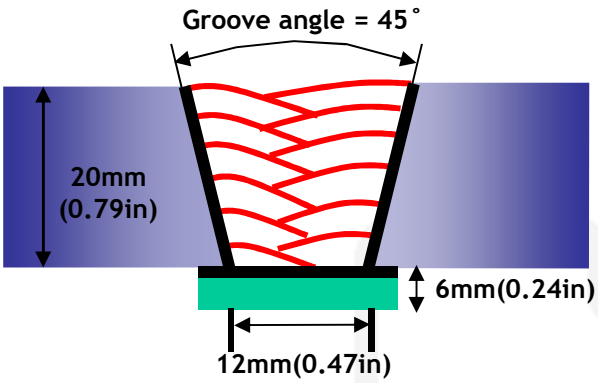
❖ Packing

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	:	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-308LT.16	TS MPa (lbs/in²)	El(%)	-196℃(-320˚F)
	576(83,500)	49.8	36(27)
AWS A5.4 E308L-XX	≥520(75,000)	≥ 35	LR≥27(20)

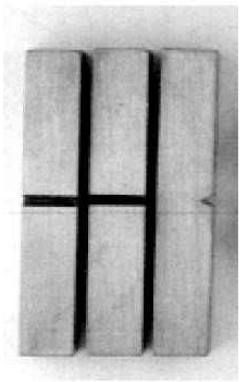
❖ Chemical Analysis of All weld metal(wt%)

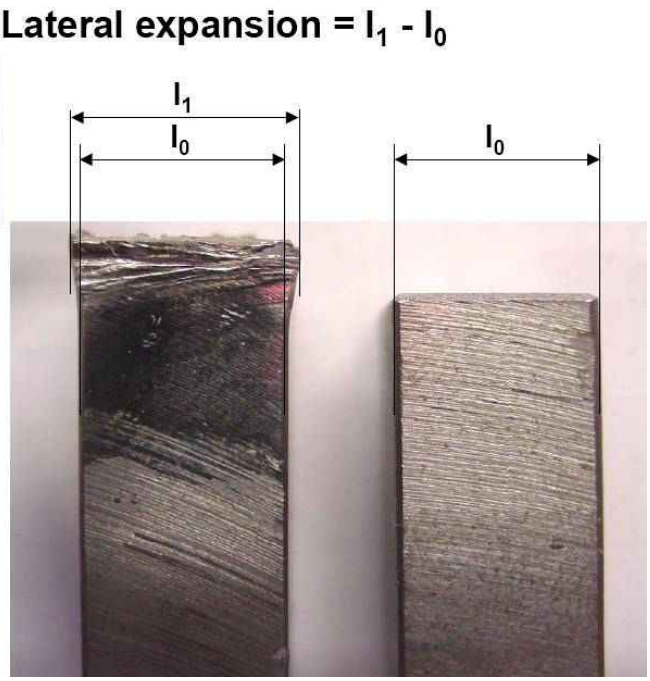
Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
S-308LT.16	0.035	0.77	1.74	0.023	0.012	9.92	19.20	0.14	0.12
AWS A5.4 E308L-XX	≤0.04	≤1.0	0.5~ 2.5	≤0.04	≤0.03	9.0 ~11.0	18.0 ~21.0	≤0.75	≤0.75

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Lateral expansion

Consumable	Lateral expansion, mm(in),-196℃(-320°F)					
	X1	X2	X3	X4	X5	Avg.
S-308LT.16	0.57(0.022)	0.71(0.028)	0.59(0.023)	0.61(0.024)	0.59(0.023)	0.61(0.024)
ASME B31-3	≥0.38(0.015)					





Bead Appearance

❖ Bead Appearance

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

AC, 140A/25V

DC+, 145A/25V