HYUNDAI WELDING

Rev. 01

SM-308LSi

2021.04

HYUNDAI WELDING CO., LTD.

SM-308LSi

❖ Specification

AWS A5.9	ER308LSi
JIS	Z 3321 YS308LSi
EN	ISO 14341-A G 19 9 L Si

❖ Applications

SM-308LSi is the same as ER308L, except for higher silicon content. (for a low ferrite or full austenitic base metal)

❖ Characteristics on Usage

SM-308LSi is an austenitic type stainless steel wire , the weld metal contains ferrite and crack sensitivity is extremely good.
Excellent usability, Such as arc stability and melting efficiency.
Resistance to corrosion and mechanical properties of weld metal are great.

❖ Note on Usage

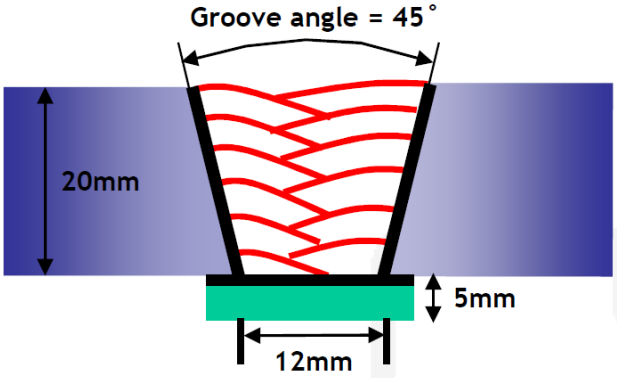
Use Ar + 2%O_2 , Ar + 2%CO_2 gas.

❖ Packing

Dia.	0.9mm (0.035in)	1.2mm (0.045in)
Spool	12.5kg (28lbs)	

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions



[Joint Preparation & Layer Details]

Diameter(mm)	:	1.2mm
Shielding Gas	:	Ar + 2%O2
Flow Rate(ℓ /min.)	:	15~20
Amp./ Volt.	:	230/27
Stick-Out(mm)	:	20
Pre-Heat(℃)	:	R.T.
Interpass Temp.(℃)	:	150 ± 15
Polarity	:	DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact test Joule (ft·lbs)	
	TS MPa (ksi)	EL (%)	-60℃ (-76°F)	-196℃ (-320.8°F)
SM-308LSi	615 (89.2)	42.8	70 (51.8)	44 (32.5)

❖ Chemical Analysis of All weld metal

Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SM-308LSi	0.024	0.85	1.55	0.023	0.001	9.52	19.06	0.13	0.182

Chemical Composition of the Wire & δ–Ferrite No. & Lateral Expansion

❖ Chemical Analysis of the wire(wt%)

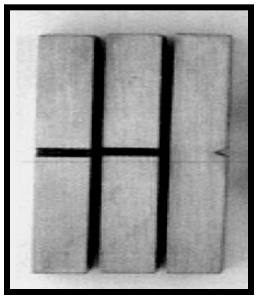
Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SM-308LSi	0.010	0.91	1.55	0.024	0.001	9.65	19.55	0.11	0.17
AWS A5.9 ER308LSi	≤0.03	0.65~ 1.00	1.0~ 2.5	≤0.03	≤0.03	9.0~ 11.0	19.5~ 22.0	≤0.75	≤0.75

❖δ – Ferrite No.

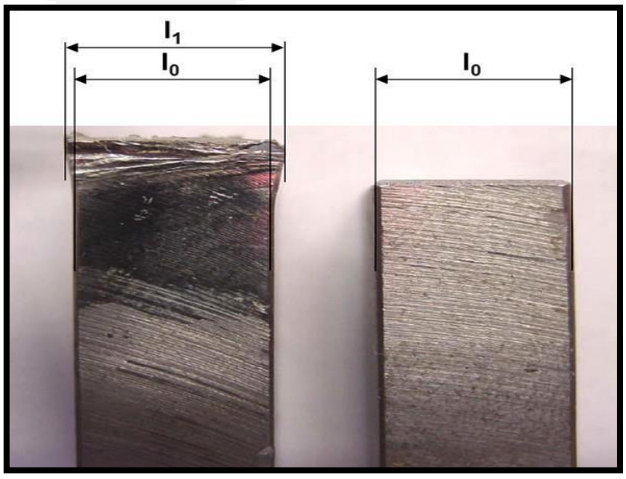
Consumable	Shielding Gas	Diagram		
		Schaeffler	Delong	WRC(1992)
SM-308LSi	Ar+2% O2	10.2	11.1	8.1

❖Lateral Expansion [mm(mil)]

℃ (°F)	X1	X2	X3	Avg.
-196 (-320.8)	0.69 (27.18)	0.63 (24.82)	0.70 (27.58)	0.67 (26.39)

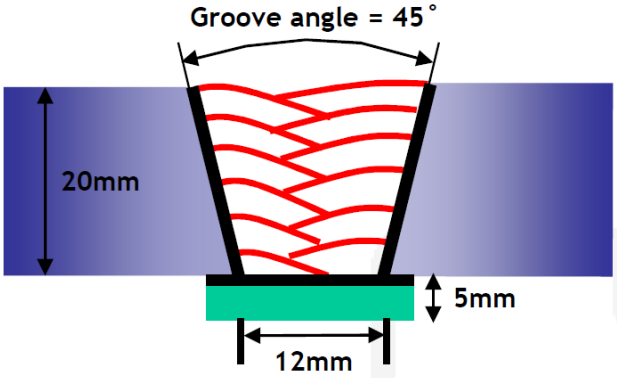


Lateral expansion = $l_1 - l_0$



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions



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Amp./ Volt.	:	230/27
Stick-Out(mm)	:	20
Pre-Heat(℃)	:	R.T.
Interpass Temp.(℃)	:	150 ± 15
Polarity	:	DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact test Joule (ft·lbs)	
	TS MPa (ksi)	EL (%)	-60℃ (-76°F)	-196℃ (-320.8°F)
SM-308LSi	614 (89.0)	41.2	87 (64.3)	51 (37.7)

❖ Chemical Analysis of All weld metal

Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SM-308LSi	0.031	0.87	1.57	0.024	0.001	9.51	19.15	0.13	0.182

Chemical Composition of the Wire & δ–Ferrite No. & Lateral Expansion

❖ Chemical Analysis of the wire(wt%)

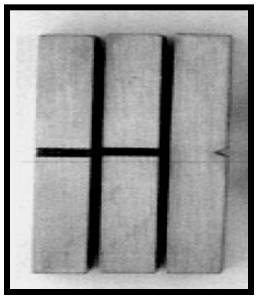
Consumable	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SM-308LSi	0.010	0.91	1.55	0.024	0.001	9.65	19.55	0.11	0.17
AWS A5.9 ER308LSi	≤0.03	0.65~ 1.00	1.0~ 2.5	≤0.03	≤0.03	9.0~ 11.0	19.5~ 22.0	≤0.75	≤0.75

❖δ – Ferrite No.

Consumable	Shielding Gas	Diagram		
		Schaeffler	Delong	WRC(1992)
SM-308LSi	Ar+2% CO2	9.9	10.9	7.6

❖Lateral Expansion [mm(mil)]

℃ (°F)	X1	X2	X3	Avg.
-196 (-320.8)	0.73 (28.76)	0.64 (25.21)	0.84 (33.09)	0.74 (29.15)



Lateral expansion = $l_1 - l_0$