SFA 309LSI

Stainless steel wires (Gmaw)

Description

SFA 309LSI is a G 23 12 LSi/ER 309LSi type solid MAG welding wire, supplied precision layer wound, depositing a low C-23Cr12Ni weld metal. Suitable for use with Ar+2%O2 or Ar+0.5…5%CO2 mixed shielding gases.
SFA 309LSi is used for the welding of stainless steels to mild and medium tensile steels. It is used for depositing intermediate layers on steel prior to depositing 308 grade stainless steel. Also used for the welding of clad steels where service temperatures are below 300°C. The weld metal has a delta-ferrite content of ~12% resulting in a high resistance to hot cracking. The increased silicon content results in increased weld pool fluidity to give a smooth deposit appearance. Precision layer winding technologies ensure smooth, virtually trouble-free feeding.

Materials to be welded

A312 TP309S; carbon steel to stainless steels joint.

Classification

AWS A 5.9 : ER 309LSi

EN ISO 14343 : G 23 12 LSi

Typical weld metal chemical composition (%)

C	Mn	Si	Cr	Ni	Mo	Cu	S	P
0.030 max	1.50 – 2.50	0.65 – 1.00	23.00 – 25.00	12.00 – 14.00	0.75 max.	0.75 max.	0.03 max.	0.03 max.

All weld metal mecanical properties (typical)

Yield Strength (N/mm2)	Tensile Strength (N/mm2)	Elongation A5 (%)	Impact energy ISO-V(J) 20°C
≥350	≥520	≥30%	≥100

The chemistry and all weld mechanical properties will vary with the type of shielding gas used.
Recommended shielding gas is 98% Ar + 2% O2 or Ar + 2 – 3% Co2.

Welding directions

MIG welding can be performed as short, spray or pulsed arc. Short arc is preferably used for thin gauges, both for horizontal and positional welding. Spray arc increases the deposition rate. Welding with pulsed arc gives excellent possibilities for a good result in varying plate thicknesses in all positions. The highest flexibility using pulsed arc is achieved with 1.20 mm.

Corrosion resistance

Corresponding to ER308LSi, i.e. fairly good under severe conditions such as oxidising and cold dilute reducing acids.

Current conditions

DC (+)

Storage

Keep dry and avoid condensation

Recommended welding data

Operating range		Diameter (mm) 0.8	1.0	1.2
Ar+1~2%CO2	Amp	40~120	80~160	100~210
	Volt	15~20	16~22	17~22
Ar+1~2%O2	Amp	160~210	180~280	200~300
	Volt	24~28	24~30	24~30

Packing data

Size (mm)	0.60	0.80	0.90	1.00	1.10	1.20	1.60
Weight (kg)	12.50/15.00	12.50/15.00	12.50/15.00	12.50/15.00	12.50/15.00	12.50/15.00	12.50/15.00

Welding positions