ROWAC 309L Si

Solid wire, high-alloyed, stainless

Classifications

EN ISO 14343-A	EN ISO 14343-B	AWS A5.9	Mat. No.
G 23 12 L Si	SS309LSi	ER309LSi	1.4332

Characteristics and typical fields of application

Stainless. Well suited for depositing intermediate layers when welding cladded materials. Favorably high Cr and Ni contents, low C content. For joining unalloyed/low-alloy steels/cast steel grades or stainless heat resistant Cr steels / cast steel grades to austenitic steels / cast steel grades. For depositing intermediate layers when welding the side of plates clad with low-carbon – non stabilized or stabilized – austenitic CrNi-Mo(N) austenitic metals. Application temperature max. 300°C (572 °F).

Base materials

Joints of and between HSLA, unalloyed and alloyed quenched and tempered, stainless, ferritic Cr and austenitic CrNi steels, high manganese steels as well as weld claddings for the first layer of chemical resistant weld claddings on ferritic-pearlitic steels up to fine grained structural steel S500N for steam boiler and pressure boiler constructions, as well as on creep resistant fine grained structural steels 22NiMoCr4-7 acc. to leaflet “SEW-Werkstoffblatt” No. 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7.

Typical analysis of solid wire (wt.-%)

C	Mn	Si	Cr	Ni
0.03	**2.0**	**0.9**	**24.0**	**13.0**

Structure: Austenite with part ferrite

Mechanical properties of all-weld metal

Heat-treatment	Yield strength $R_{p0.2}$	Yield strength $R_{p1.0}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V CVN J
	MPa	MPa	MPa	%	20°C
aw	**400**	**430**	**550**	**30**	**55**

Operating data

Ø (mm)	Polarity:	Shielding gas:	Spool:
0.8	DC (+)	(EN ISO 14175)	BS300
1.0		M12, M13	B300
1.2			B300
1.6			B300

Approvals

TÜV (12312) • DNV GL • CE

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Welding instruction		
Materials	Preheating	Postweld heat treatment
Joining: CrNi(MoN) austenitic steels with unalloyed / lowalloy steels / cast steel grades	According to ferritic parent metal; mostly not necessary	No postweld heat treatment above 300 °C (572 °F); risk of carbide precipitation in weld fusion zone, loss of toughness, fracturing
Joining: CrNi(MoN) austenitic steels with stainless heat resistant Cr steels / cast steel grades	According to ferritic parent metal	According to parent metals. Attention must be paid to resistance to inter-crystalline corrosion and to susceptibility of the austenitic metal side to embrittlement
Cladded plates and cast materials with austenitic CrNi(MoN) overlay	According to ferritic parent metal	According to parent metals. Attention must be paid to resistance to inter-crystalline corrosion and to susceptibility of the austenitic metal side to embrittlement