



DAIKOWT 309LSi



AUSTENITIC STAINLESS STEELS
309L

DESCRIPTION

Rod for dissimilar joints and buffer layers

These electrodes are mainly used in high dilution conditions, particularly for heterologous welds between stainless steels and carbon-manganese steels. The low carbon content (max 0.03%) reduces the possibility of precipitation of intergranular carbides, increasing the resistance to intergranular corrosion without resorting to stabilizers like niobium or titanium. Ideal for homologous welds of stainless steels or heterologous welds with carbon or low-alloy steels, and they can be used up to 380 °C. The higher silicon content compared to the standard 309L improves the weld fluidity and the appearance of the bead.

SPECIFICATIONS

EN ISO 14343-A	W 23 12 L Si	AWS A5.9	ER309LSi
Certifications	CE, DB, TUV	Shielding	11
Positions	PA, PB, PC, PD, PE, PF	Current	DC-
Packaging Type	5kg carton tube		

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	8

FERRITE

8-15 FN

PREN

23.83

HARDNESS

85HRB

CHEM. COMP. %

C	0.015
Mn	1.7
Ni	13
Cr	23.5
P	0.015
S	0.005
Mo	0.1
Si	0.8
Cu	0.15

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R _m MPa	550	590
Yield strength R _{p0.2} MPa	350	450
Elongation A (L ₀ =5d ₀) %	25	43
Impact Charpy ISO-V	-	150J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.6 mm	2.4 mm
Ampere	80A - 100A	110A - 160A
Voltage	-	-
Packaging	Ø 1,0÷4,0 mm	Ø 1,0÷4,0 mm
Packaging Type	5kg carton tube	5kg carton tube





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APPLICATION

****Bearing layers and claddings on steels****: Ideal for overlays on carbon-manganese steels, mild or low alloy steels, and for joining clad plates in 304L/321. Successive layers are applied with electrodes selected to match the cladding, such as 308L or 347. ****Dissimilar connections****: Thanks to its tolerance to dilution, it is used to join stainless steels like 410, 304L, 321, and 316L with mild and low alloy steels for reinforcements, brackets, and other accessories. Not suitable for service temperatures above 400 °C. It is also suitable for welding 12% Cr ferritic steels, such as Cromwell 3CR12, both among themselves and with other steels. ****Similar metal joints****: Wrought and cast steels, type 23Cr-12Ni (e.g., ASTM 309 and CH8, BS 309S24 and 309C30), can be welded when corrosion resistance below 400 °C is required. For high-temperature structural applications, a welding metal with a higher carbon content and reduced ferrite is necessary. Preheating and interpass temperatures depend on the hardenability of the base material. As a guide, no preheating is necessary for mild steels; on hardenable ones, the temperature can reach up to 250 °C.

ALLOY TYPE

24%Cr-13%Ni (309L) austenitic stainless for dissimilar joint buffer layers etc.

MICROSTRUCTURE

Austenite with ferrite in the range 8-20FN. GMAW tends to have lower ferrite (8-15 FN) than the MMA and FCW consumables.

MATERIALS

Mainly used under high dilution conditions, particularly dissimilar welds between stainless and CMn steels.

