DAIKOWM 309L

GMAW

AUSTENITIC STAINLESS STEELS
309L

DESCRIPTION

Solid wire for dissimilar joining and buffer layer

These consumables are mainly used under high dilution conditions, particularly dissimilar welds between stainless and C-Mn steels. The low carbon, 0.03% max, in this filler metal reduces the possibility of intergranular carbide precipitation. This increases the resistance to intergranular corrosion without the use of stabilizers such as niobium or titanium. Ideal for joining stainless steels to themselves or to carbon or low alloy steels, and can be used at temperatures of up to 380°C. Also used for overlays on CMn steel or low alloy steel and for joining clad plate.

SPECIFICATIONS

EN ISO 14343-A	G 23 12 L	**AWS A5.9**	ER309L
Certifications	CE	**Shielding**	M12, M13
Positions	PA, PB, PC, PD, PE, PF, PG	**Current**	DC+
Packaging Type	Drums, B300, D200 and D100 spools.		

ASME QUALIFICATIONS

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

FERRITE

8-15 FN

PREN

23.83

HARDNESS

85HRB

CHEM. COMP. %

	DEFAULT
C	0.015
Mn	1.7
Ni	13
Cr	23.5
P	0.015
S	0.005
Mo	0.1
Si	0.5
Cu	0.15

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	550	590
Yield strength $R_{p0.2}$ MPa	350	410
Elongation A (L_0=5d_0) %	25	40
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.0 mm	1.2 mm
Ampere	160A - 220A	200A - 270A
Voltage	25V - 29V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.

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DESCRIPTION

APPLICATION

Bearing layers and claddings on steels: Ideal for overlays on carbon-manganese steels, mild or low alloy steels, and for joining cladded 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.