G-TECH 309L

SMAW

AUSTENITIC STAINLESS STEELS
309L

DESCRIPTION

Rutile coated low carbon electrode for dissimilar joining and buffer layer

Its basic-rutile coating ensures an excellent combination of welding performance in all positions, except for vertical down, and a high resistance to cracking providing smooth arc transfer. These electrodes are mainly used under high dilution conditions, particularly dissimilar welds between stainless and C-Mn steels. Also overlays on C-Mn steel or low alloy steel and for joining clad plate. Other application is welding of similar metal joints (23Cr-12Ni type). Excellent weldability with a spatter free arc and self-releasing slag result in a very smooth bead appearance.

SPECIFICATIONS

EN ISO 3581-A	E 23 12 L R 32	**AWS A5.4**	E309L-16
Shielding	-	**Positions**	PA, PB, PC, PD, PE, PF
Current	DC+, AC	**Packaging Type**	Carton box

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	8

FERRITE

8-15 FN

PREN

23.83

HARDNESS

85HRB

CHEM. COMP. %

	DEFAULT
C	0.03
Mn	0.8
Ni	13
Cr	23.5
P	0.02
S	0.01
Mo	0.1
Si	0.6
Cu	0.1

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	510	560
Yield strength $R_{p0.2}$ MPa	320	400
Elongation A (L_0=5d_0) %	25	30
Impact Charpy ISO-V	-	45J @ -20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.5 mm	3.2 mm	4.0 mm	5.0 mm
Ampere	50A - 80A	80A - 110A	110A - 150A	160A - 210A
Voltage	-	-	-	-
Packaging	56 pcs/kg	28 pcs/kg	19 pcs/kg	12 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box

NOTES

Pcs/kg is indicative, actual number may vary ± 5%.

DAIKO

309L

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.