AWS A5.9 ER309Si

AK ER309Si

Description:

ER309Si is a silicon-modified version of ER309 designed for dissimilar metal welding and stainless overlays. Increased silicon improves fluidity, wetting, and bead smoothness, while retaining strong crack resistance, solid oxidation resistance, and stable welding characteristics.

Application Scenario:

ER309Si is widely used for stainless-to-carbon steel joints, surfacing, overlay welding, and automated fabrication where a smooth bead is important. It fits pressure parts, exhaust systems, industrial machinery, and repair applications requiring attractive weld appearance and dependable fusion.

Typical Chemical Compostion(%):

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
Requirement	0.12	23.0-25.0	12.0-14.0	0.75	1.0-2.5	0.65-1.0	0.030	0.030	0.75
Actual Result	0.08	24.25	13.50	0.50	2.10	0.85	0.010	0.010	0.20

Typical Mechanical Properties:

	Tensile strength (MPa)	Yield Stress (MPa)	Elongation (%)	Impact Values (J)
Requirement	——		——	
Actual Result	620		41	