

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
W 23 12 L Si	ER309LSi

Characteristics and typical fields of application

TIG rod type W 23 12 L Si / ER309LSi for joining and surfacing applications. Designed for dissimilar welding between mild steel and stainless steels and surfacing of low-alloy steels, offering a ductile and crack resistant weldment.

Base materials

1.4301 X5CrNi18-10, 1.4306 X2CrNi19-11, 1.4308 GX5CrNi19-10, 1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4408 GX5CrNiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4541 X6CrNiTi18-10, 1.4550 X6CrNiNb18-10, 1.4552 GX5CrNiNb19-11, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12, 1.4948 X6CrNi18-10

UNS S30400, S30403, S30809, S31600, S31603, S31635, S32100, S34700, S31640

AISI 304, 304L, 316, 316L, 316Ti, 321, 347

or mixed joints between austenitic and heat resistant steels such as

1.4713 X10CrAlSi7, 1.4724 X10CrAlSi13, 1.4742 X10CrAlSi18, 1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4832 GX25CrNiSi20-14, 1.4837 GX40CrNiSi25-12

with ferritic steels to pressure boiler steels P295GH and fine grained structural steels to P355N, ship building steel grades A – E, AH 32 – EH 36, A40 – F40, etc.

Typical analysis

	C	Si	Mn	Cr	Ni
wt.-%	≤0.02	0.8	1.8	23.5	13.5

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength R _{p0.2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact energy ISO-V KV J
	MPa	MPa	%	20°C
u	470 (≥ 320)	650 (≥ 510)	28 (≥ 25)	120 (≥ 47)

u untreated, as-welded – shielding gas Ar + 30% He

Operating data

	Polarity	DC-	Dimension mm
	Shielding gas (EN ISO 14175)	I1 (Ar)	1.6 × 1000
	Rod marking	+ W 23 12 L Si / ER309LSi	2.0 × 1000
			2.4 × 1000
			3.2 × 1000

Approvals

TÜV (19605), DB (43.132.80), CE