

Classifications

EN ISO 14343-A	EN ISO 14343-B	AWS A5.9
W 23 12 L	SS309L	ER309L

Characteristics and typical fields of application

TIG rod of W 23 12 L / ER309L type for welding dissimilar joints. Well-suited for depositing intermediate layers when welding of clad materials. Designed for very good welding and wetting characteristics as well as good safety after dilution when welding dissimilar joints.

Due to the high ferrite content, 16 FN, the weld metal is less susceptible to hot cracking. Suitable for service temperatures between -80°C and 300°C .

Base materials

Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining non-molybdenum-alloyed stainless and carbon steels.

Joints and mixed joints between austenitic steels such as 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 of the TIG rods (wt.-%)

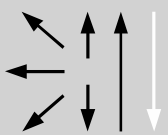
	C	Si	Mn	Cr	Ni
wt-%	0.02	0.5	1.7	23.5	13.2

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

	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact values ISO-V CVN J	
	MPa	MPa	%	+20 °C	-120 °C
u	440 (≥ 320)	580 (≥ 520)	34 (≥ 25)	150	(≥ 32)

u untreated, as-welded – shielding gas Ar

Operating data

	Polarity: DC (–)	Shielding gas: (EN ISO 14175) I1	Marks: ✦ W 23 12 L / ER309L	ø mm	L mm
				1.6	1000
				2.0	1000
				2.4	1000
				3.2	1000

Approvals

TÜV (02661), DNV GL, ABS, BV, NAKS, CE