

## Classifications

<b>EN ISO 3581-A</b>	<b>AWS A5.4 / SFA-5.4</b>
E 23 12 L R 3 2	E309L-17

## Characteristics and typical fields of application

Rutile coated, core wire alloyed electrode of E 23 12 L / E309L-17 type providing increased delta ferrite contents in the weld deposit for safe and crack resistant dissimilar joint welds and surfacing. Designed for first class weld seams and easy handling on AC or DC+. High current carrying capacity with minimum spatter formation. Self-releasing slag, smooth and clean weld profile. Safety against formation of porosity due to moisture resistant coating. Operating temperature from -60°C to 300°C and for weld claddings up to 400°C.

## Base materials

Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining mainly non-molybdenum-alloyed stainless steels to carbon steels, austenitic and ferritic heat resistant steels, etc.

## Typical analysis


	C	Si	Mn	Cr	Ni	FN
wt.-%	0.02	0.7	0.8	23.2	12.5	12 – 17

## 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		Hardness
	MPa	MPa	%	20°C	-60°C	
u	450 (≥ 320)	580 (≥ 520)	40 (≥ 25)	55	45 (≥ 32)	240

u untreated, as-welded

## Operating data

	<b>Polarity</b>	DC+ / AC	<b>Dimension mm</b>	<b>Current A</b>
	<b>Electrode identification</b>	FOX CN 23/12-A / 309L-17 E 23 12 L R	2.5 × 350	60 – 80
			3.2 × 350	80 – 110
			4.0 × 350	110 – 140
			5.0 × 450	140 – 180

Preheating and interpass temperature as required by the base metal.

Suggested heat input is max. 2.0 kJ/mm.

Re-drying at 250 – 300°C for min. 2 h if necessary.

Post-weld heat treatment generally not needed. For constructions that include low-alloyed steels in mixed joints, stress relieving may be advisable. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment process is carried out.

## Approvals

TÜV (01771), DB (30.014.08), ABS, BV, LR, DNV, CWB, CE



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