

## Classifications

<b>EN ISO 14343-A</b>	<b>AWS A5.9 / SFA-5.9</b>
W 29 9	ER312

## Characteristics and typical fields of application

TIG rod of W 29 9 / ER312 type for joining and surfacing applications with matching / similar steels and cast steel grades. For fabricating tough joints on unalloyed / low-alloyed structural steels of higher strength on high manganese steel and CrNiMn steels. High resistance to hot cracking, Good toughness and strength properties. The weld metal is work hardening, suitable for wear resisting build-ups on clutches, gear wheels, shafts, etc. It is also suitable for repair welding of tools. Application temperature max. 300°C.

## Base materials

For welding of unalloyed steels with limited weldability and low-alloyed steels of higher strength. Used as stress-relieved buffer layer when cladding cold and warm machine tools. For joining of high manganese and CrNiMn-steels and combinations of steels of different chemical composition or strength.

1.3401 X120Mn12, 1.4006 X10Cr13, 1.4339 GX32CrNi28-10, 1.4340 GX49CrNi27-4, 1.4347 GX8CrCrNiN26-7, 1.4460 X3CrNiMoN27-5-2

UNS S41000, AISI 329, 410, S235, E295

## Typical analysis


	C	Si	Mn	Cr	Ni
wt.-%	0.15	0.5	1.6	30	9.0

## 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	500 ( $\geq 450$ )	750 ( $\geq 650$ )	20 ( $> 15$ )	( $\geq 27$ )

u untreated, as-welded – shielding gas Ar

## Operating data

	<b>Polarity</b>	DC-	<b>Dimension mm</b>
	<b>Shielding gas</b> (EN ISO 14175)	I1	1.20 x 1000
	<b>Rod marking</b>	+ W 29 9 / ER312	1.60 x 1000
			2.00 x 1000
			2.40 x 1000

Suggested heat input max. 2.0 kJ/mm and interpass temperature max. 150°C. Preheating and interpass temperature as required by the base metal.

## Approvals

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