

## Stainless steel electrode

## Classification

AWS A5.4-92 : E312-16\*  
EN 1600-97 : E 29 9 R 12

\* Deviation: see remarks

## Temperature Range

pressurized parts: -10 ... +350°C  
scaling resistance: n.a.

## General description

A rutile-basic high CrNi-alloyed all position electrode

Excellent for repair welding

Specially developed for welding steels difficult to weld such as:

- armour plate - austenitic Mn-steel - high C-steel

Excellent weldability and self releasing slag

Weldable on AC and DC+ polarity

Also available in vacuum sealed Sahara ReadyPack® (SRP)

## Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PE/4G PF/5G up

## Current type

AC / DC electr. +

## Approvals

## Chemical composition (w%), typical, all weld metal

C	Mn	Si	Cr	Ni
0.11	0.9	1.0	29.0	9.0

## Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J) +20°C
Required: AWS A5.4-92		not required	min. 660	min. 22	not required
EN 1600-97		min. 450	min. 650	min. 15	not required
Typical values	AW	700	800	20	50

## Packaging, available sizes and identification

	Diameter (mm)	2.0	2.5	3.2	4.0	5.0
	Length (mm)	300	350	350	350	350
Unit: Box	Pieces / unit (nominal)		125	150	100	72
	Net weight/unit (kg)		2.6	5.0	5.0	5.2
Unit: SRP	Pack Pieces / unit	53	69	52	31	24
	Net weight/unit (kg)	0.6	1.5	1.8	1.5	1.7

## Identification

Imprint: 312-16/Limarosta 312

Tip colour: black

Limarosta® 312: rev. EN 15

**Materials to be welded**

Various steels grades as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic austenitic steels
- Work hardening austenitic manganese steels
- Dissimilar steel grades (CMn-steels to stainless steel) up to max. thickness of 12 mm

**Calculation data**

Sizes Diam. x length (mm)	Current range type (A)	Current	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.0 x 300	40 - 55	DC+	41	45	0.59	12.0	150	1.80
2.5 x 350	50 - 70	DC+	57	91	0.73	20.7	87	1.79
3.2 x 350	70 - 100	DC+	60	126	1.1	33.0	52	1.72
4.0 x 350	100 - 130	DC+	72	273	1.4	49.7	35	1.72
5.0 x 350	130 - 140	DC+	79	313	2.4	71.5	19	1.36

\* stub end 35mm

**Welding parameters, optimum fill passes**

Welding position: Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G	PF/3G up	PE/4G	PF/5G up
2.5	70	70	70	60	60	60
3.2	100	90	100	65	65	65
4.0	130	125	130	80		
5.0						

**Remarks**

Deviations: chemical composition:

Si = max. 1.2%

AWS: Si = max. 0.90%