

## 29.9 SUPER R

MMA (SMAW)

## ACID RUTILE MMA ELECTRODE

## PRODUCT DESCRIPTION

MMA electrode with acid rutile flux on matching 312 stainless steel core wire.  
Recovery is about 100% with respect to core wire, 65% with respect to whole electrode.

## CLASSIFICATIONS

AWS A5.4M (E312-17) nearest classification  
ISO 3581 E 29 9 R 3 2

## ASME IX QUALIFICATION

QW432 F-No 5 (This is nearest because the electrode does not strictly conform to AWS)  
QW442 A-No

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G

## CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Cu
min.	--	--	--	--	--	28.0	8.0	--	--
max.	0.15	1.5	1.2	0.025	0.035	31.0	10.5	0.5	0.75
Typical	0.1	0.8	1	0.01	0.02	29	9.5	0.1	0.1

## ALL-WELD MECHANICAL PROPERTIES

As welded	min.	typical
Tensile strength (MPa)	660	830
0.2% proof strength (MPa)	450	700
Elongation (%) 4d	22 *	26
5d	15	25
Reduction of area %	--	30
Hardness HV	--	280

\*Minimum elongation required by AWS not always obtained.

A high tensile strength with moderate ductility is typical for multipass all-weld test specimens but these properties may be altered under conditions of high dilution from base material for which this electrode is intended. Dilution typically raises ductility.

## OPERATING PARAMETERS, DC +VE OR AC (OCV: 50V MIN)

Diameter (mm)	2.5	3.2	4.0	5.0
min. A	60	75	100	130
max. A	90	120	155	210

## PACKAGING DATA

	Diameter (mm)	Length (mm)	Item number	No of pieces		Weight (kg)	
				can	box	can	box
METAL CAN	2.5	300	299SR-25	214	642	4.0	12.0
	3.2	350	299SR-32	140	420	4.6	13.8
	4.0	350	299SR-40	98	294	4.7	14.1
	5.0	350	299SR-50	56	168	4.5	13.5

Redrying : 200 – 250°C/1-2h to restore to as-packed condition. Maximum 400° C, 3 cycles, 10h total.

## FUME DATA (WT % TYPICAL)

Fe	Mn	Ni	Cr	Cu	F	OES (mg/m³)
8	4	1	8	0.2	17	0.6

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to [www.specialalloys.eu](http://www.specialalloys.eu) for any updated information.