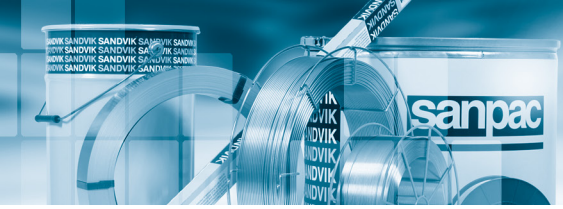

Datasheet updated 2012-08-03 09:08:17 (supersedes all previous editions)

Sandvik 29.9.R

(Covered electrodes)

Sandvik 29.9.R is a covered electrode with rutile-basic coating and about 110% metal recovery giving a duplex (ferritic-austenitic) all weld metal. It is used for welding of dissimilar materials, high carbon and manganese steels like tool steels as well as surfacing. Sandvik 29.9 R is also used for overlays on hot forming steels and as a universal electrode for repair and maintenance work.

Scaling resistant up to 1150°C (2100°F). Spray transfer gives a bead with a finely rippled surface. Little spatter and very good slag removal.

STANDARDS

- AWS E312-16
- EN number E 29 9 R

Product standards

- EN ISO 1600
- ASME/AWS SFA5.4

CHEMICAL COMPOSITION - WELD METAL

The following data are valid for non heat-treated all-weld metal.

CHEMICAL COMPOSITION, WT%

C	Si	Mn	P	S	Cr	Ni
<0.10	0.8	1.5	<0.04	<0.025	28.5	10

MICROSTRUCTURE - WELD METAL

Austenitic matrix with a ferrite content of about 30%.

MECHANICAL PROPERTIES - WELD METAL

Temperature	°C	20
Yield strength, $R_{P0.2}$	MPa	600
Tensile strength, R_M	MPa	720
Elongation, A_5	%	25
Reduction of area	%	25
Impact strength, Charpy V	J	50
Hardness, Vickers		220

CORROSION PROPERTIES - WELD METAL

Sandvik 29.9.R is resistant to intercrystalline corrosion according to DIN 50914 in the as-welded and quench-annealed condition.

MARKING

Printing	Sandvik 29.9.R/312-16
Tip colour	blue

DEPOSITION DATA

ELECTRODE DATA

Electrode diameter, mm	2.5	3.25	4.0
Length, mm	300	350	350
Weights: kg/100 pcs	2.0	4.0	5.9
kg/box	1.6	2.0	1.9
Electrodes/box	79	50	32
Max deposition rate, kg weld metal/h, approx	0.9	1.3	2.0
Effective value kg weld metal/kg electrodes	0.64	0.62	0.65
Change value Electrodes/kg weld metal	78	48.5	26
Burn-off time per electrode at max current, s	48	56	66

WORKING DATA

Welding positions	diameter <=3.25 mm	all except vertical down
	diameter >=4.0 mm	preferably flat position
Current/polarity	direct current/electrode positive or alternating current at an open circuit voltage of at least 50V	

FURTHER INFORMATION

Diameter, mm	**2.5**	**3.25**	**4.0**
Current, A	50-85	80-125	110-175
Fume classification *)	R4	R5	R6

*) According to Swedish standard (SS) 06 28 01
Redrying of the electrodes when necessary: 2h/300 °C

DISCLAIMER:
Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Sandvik materials.