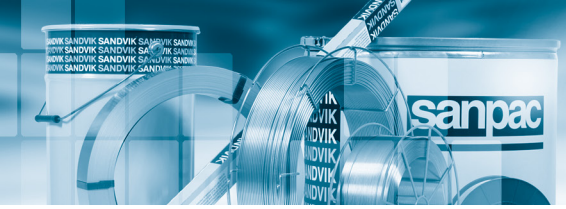

SANDVIK

Datasheet updated 2012-08-03 09:03:10 (supersedes all previous editions)

Sandvik 23.12.2.LR

(Covered electrodes)

Sandvik 23.12.2.LR is a covered electrode with rutile-acid coating and about 120% metal recovery for joining of dissimilar materials. It is commonly used also for first layer deposit in ASTM 316 overlays. Spray transfer gives a bead with a finely rippled surface. There is little spatter and very good slag removal.

STANDARDS

- AWS E309LMo-17
- EN number E 23 12 2 L R

Product standards
- EN ISO 1600
- ASME/AWS SFA5.4

Approvals
TÜV.

CHEMICAL COMPOSITION - ALL-WELD METAL

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

CHEMICAL COMPOSITION, WT%

C max	Si	Mn	P max	S max	Cr	Ni	Mo
0.03	0.8	1.0	0.03	0.025	23	13	2.7

MICROSTRUCTURE - ALL-WELD METAL

Austenitic matrix with a ferrite content of about 16FN according to DeLong.

MECHANICAL PROPERTIES - ALL-WELD METAL

Temperature	°C	20	-40	-80	-120
Yield strength, $R_{p0.2}$	MPa	450	-	-	-
Tensile strength, R_m	MPa	560	-	-	-
Elongation, A	%	30	-	-	-
Reduction in area, Z	%	38	-	-	-
Impact strength, Charpy V	J	60	50	45	35
Hardness (Vickers)	.	210	.	.	.

CORROSION RESISTANCE - ALL-WELD METAL

Sandvik 23.12.2.LR is resistant to intergranular corrosion according to ASTM A262 practice E.

RECOMENDED WELDING DATA

Diameter, mm	**2.0**	**2.5**	**3.25**	**4.0**
Current, A	30-60	50-90	90-120	130-180

Redrying electrodes when necessary: 300°C (570°F)/2h

MARKING

Marking at grip end	Sandvik 23.12.2.LR/309LMo-17
Tip colour	blue

DEPOSITION DATA

ELECTRODE DATA

Electrode diameter, mm	2.0	2.5	3.25	4.0
Length, mm	300	300	350	350
Weights: kg/100 pcs	1.2	2.0	3.8	5.7
kg/box	1.7	1.7	4.3	4.4
Electrodes/box	134	84	112	77
Max deposition rate, kg weld metal/h, approx	0.8	1.2	1.7	2.5
Effective value kg weld metal/kg electrodes	0.63	0.63	0.61	0.61
Change value Electrodes/kg weld metal	125	81	43	28
Burn off time per electrode at max current, s	34	36	53	56

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	

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.