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Sanicro 60

(Welding wire)

Sanicro 60 welding wire is suitable for joining nickel-chromium-molybdenum nickel alloys and chromium-nickel-molybdenum steels with very high corrosion resistance, such as Sandvik 254 SMO, Sanicro 63 and corresponding grades. It is also suitable for joining stainless steels and nickel alloys for high-temperature service. Sanicro 60 can also be used for dissimilar joining of stainless steels to nickel alloys and for overlay welding. Sanicro 60 is available as wire and rods.

STANDARDS

- AWS ERNiCrMo-3
- EN number Ni 6625

Product standards

- EN ISO 18274
- ASME/AWS SFA5.14

Approvals

CE

CHEMICAL COMPOSITION - FILLER METAL

CHEMICAL COMPOSITION, WT%

C	Si	Mn	P	S	Cr	Ni	Mo	Fe	Nb
≤0.03	0.2	0.2	≤0.015	≤0.010	22	≥60	9	≤1	3.5

CHEMICAL COMPOSITION - ALL-WELD METAL

The following data is typical for non heat treated all-weld metal made by the TIG, MIG or PAW methods using argon as shielding gas.

C	Si	Mn	P	S	Cr	Ni	Mo	Fe	Nb
≤0.030	0.2	0.2	≤0.015	≤0.010	22	60	9	0.5	3.4

MICROSTRUCTURE - ALL-WELD METAL

Fully austenitic.

MECHANICAL PROPERTIES - ALL-WELD METAL

Temperature	°C	20	-196
Yield strength, R _{p0.2}	MPa	430	-
Tensile strength, R _m	MPa	770	-
Elongation, A	%	42	-
Reduction in area, Z	%	51	-
Impact strength, Charpy V	J	150	70
Hardness, Vickers	HV	220	-

PHYSICAL PROPERTIES - ALL-WELD METAL

Temperature, °C	20	100	300	500	700
Thermal conductivity, W/m	15	16	18	22	25

Thermal expansion per °C, from 20°C to 400°C 12×10^{-6}
 Density, g/cm³, at 20 °C 8.3

CORROSION RESISTANCE - ALL-WELD METAL

Sanicro 60 shows very good resistance to pitting corrosion, intergranular corrosion (corrosion rate <0.4 mm/year when tested acc. to ASTM G28 A) and is almost immune to stress corrosion cracking in chloride-containing environments.

RECOMMENDED WELDING DATA

MIG/MAG welding

Electrode positive is used to give good penetration in all types of welded joint. The following table shows common conditions for MIG welding.

Wire diameter, mm	Wire feed, m/min	Current, A	Voltage, V	Gas, l/min
Short-arc welding				
0.8	5-9	50-140	16-25	15
1.0	5-9	70-160	16-25	15
Spray-arc welding				
1.0	6-12	150-230	26-31	22
1.2	5-9	170-280	27-32	22
1.6	3-5	230-370	29-33	22
Pulsed-arc welding¹⁾				
1.2	3-10	150-250	23-31	20

¹⁾ Pulse parameters: Peak current 300 - 400 A
Background current 50 - 150 A
Frequency 80 - 120 Hz

Short-arc welding is used with thin gauge material of less than about 3 mm, in depositing root runs, and in welding out-of-flat positions.

The higher the inductance in short-arc welding, the higher the fluidity of the molten pool.

Spray-arc welding is normally used for heavier gauge material.

TIG welding

The parameters for TIG welding depend largely upon the base metal thickness and the welding application.

Electrode negative and a [shielding gas](#) of argon or helium should be used to prevent oxidation of the weld metal.

Submerged-arc welding

Electrode positive is suggested for joint welding to give good penetration.

Wire diameter, mm	Current, A	Voltage, V
2.0	200-300	30-33
2.4	250-400	30-33
3.2	300-450	30-33

Recommended flux is [Sandvik 50SW](#).

* 254 SMO is a trademark owned by Outokumpu OY.

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.