



Datasheet updated 2012-08-02 19:14:50 (supersedes all previous editions)

# Sandvik 25.20.C

## (Welding wire)

Sandvik 25.20.C is a filler material suitable for joining heat resistant austenitic steels of the 25 Cr/20 Ni type. It can be used in air up to about 1100°C (2010°F), in oxidizing sulphurous atmospheres up to 1050°C (1920°F) and in reducing sulphurous atmospheres up to 650°C (1200°F). Sandvik 25.20.C has moderate creep strength and structure stability.

### STANDARDS

- AWS ER310
- EN number 25 20

### Product standards

- EN ISO 14343
- ASME/AWS SFA5.9

### FILLER METAL

#### CHEMICAL COMPOSITION (AIM), WT%

C	Si	Mn	P	S	Cr	Ni	Mo	Cu	N
0.12	0.3	1.8	<0.015	<0.015	26	21	<0.3	<0.3	<0.06

#### CHEMICAL COMPOSITION- ALL-WELD METAL

The following data are typical for non heat treated weld metal made by MIG welding with Ar shielding gas.

#### CHEMICAL COMPOSITION, WT%

C	Si	Mn	P	S	Cr	Ni	N
0.10	0.3	1.7	0.012	0.010	25	20	0.05

#### MICROSTRUCTURE- ALL-WELD METAL

Fully austenitic matrix.

#### MECHANICAL PROPERTIES- ALL-WELD METAL

Temperature	°C	20	400	-196
Yield strength, $R_{p0.2}$	MPa	390	250	-
Tensile strength, $R_m$	MPa	590	490	-
Elongation, $A_5$	%	38	26	-
Reduction in area, Z	%	64	-	-
Impact strength, Charpy V	J	130	-	60
Hardness, Vickers	HV	160	-	-

#### PHYSICAL PROPERTIES- ALL-WELD METAL

Temperature °C	20	100	300	500
Thermal conductivity, W/m	12	13	15	17

Thermal expansion per °C, from 20°C (68 °F) to 400°C (750 °F)  $19.7 \times 10^{-6}$   
Density, g/cm<sup>3</sup> 7.8

## CORROSION PROPERTIES- ALL-WELD METAL

---

Sandvik 25.20.C has a high scaling temperature, 1100°C (2010 °F) and, therefore, good oxidation resistance at high temperatures.

## RECOMMENDED WELDING DATA

---

### MIG 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				
1.0	4-8	60-140	15-21	12
Spray-arc welding				
1.0	6-12	140-220	23-28	18
1.2	5-9	180-260	24-29	18
Pulsed-arc welding <sup>1)</sup>				
1.2	3-10	150-250	23-31	18

---

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

---

Sandvik can provide [recommendations for shielding gases](#).

Short-arc welding is used with light 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.

---

#### 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.