SANDVIK 8RE18
TUBE AND PIPE, SEAMLESS

DATASHEET

Sandvik 8RE18 is an austenitic chromium-nickel steel for high-temperature applications.

STANDARDS

- ASTM: TP309S, TP309H
- UNS: S30908/S30909
- EN Number: 1.4833

CHEMICAL COMPOSITION (NOMINAL)

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni
0.07	0.5	1.7	≤0.035	≤0.015	22.5	14

MECHANICAL PROPERTIES

At 20°C (68°F)

Proof strength		Tensile strength		Elong.
$R_{p0.2}$ [1)]		R_m		A [2)]
MPa	ksi	MPa	ksi	%
≥205	≥30	>515	>75	≥35

1 MPa = N/mm²
1) $R_{p0.2\,0}$ corresponds to 0.2% offset yield strength.
2) Based on $L_0 = 5.65\sqrt{S_0}$ where L_0 is the original gauge length and S_0 the original cross-section area.

WELDING

The weldability of Sandvik 8RE18 is good. Welding must be carried out without preheating and subsequent heat treatment is normally not required. Suitable methods of fusion welding are manual metal-arc welding (MMA/SMAW) and gas-shielded arc welding, with the TIG/GTAW method as first choice.

For Sandvik 8RE18, heat input of <2.0 kJ/mm and interpass temperature of <150°C (300°F) are recommended.

Recommended filler metals

TIG/GTAW or MIG/GMAW welding

ISO 14343 S 22 12 H / AWS A5.9 ER309Si (e.g. Exaton 24.13.Si)

MMA/SMAW welding

ISO 3581 E 22 12 R / AWS A5.4 E309-17

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