Thermanit 1610 Si

Solid Wire, stainless, high-alloyed, special applications

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9
Z 17 Ti	ER430 (mod.)

Characteristics and typical fields of application

Stainless solid wire, corrosion-resistant similar to matching 17 % Cr steels / cast steel grades (seawater, diluted organic and inorganic acids). For joining and surfacing work on matching ferritic and similar Cr steels / cast steel grades, suitable for quenching and tempering.

Base materials

1.4016 – X6Cr17; 1.4502 – X8CrTi18; 1.4510 – X3CrTi17
AISI 430Ti, 431

Typical analysis

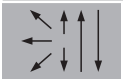
	C	Si	Mn	Cr	Ti
wt.-%	0.06	1.0	0.6	17.5	>8xC

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Hardness
	MPa	MPa	%	
u				170
s	380 (≥ 300)	520 (≥ 450)	20 (≥ 15)	130

u untreated, as welded
s stress relieved (800°C / 1 h)

Operating data



Polarity	DC+
Shielding gas (EN ISO 14175)	M12 M13

Dimension mm
1.0
1.6

Matching ferritic steels: Preheating: 200 – 300 °C (392 – 572 °F) - Cooling in air. Annealing at 800 °C (1472 °F) followed by air cooling for the reduction of stresses induced by welding and to restore resistance against grain decomposition. Not necessary for single-layer welds under corresponding service temperatures.
Matching steels / cast steel grades, suitable for quenching and tempering: Preheating 300 – 400 °C (572 – 752 °F) - Cooling to roughly 120 °C (248 °F), then temper or quench and temper, according to parent metal.
Lowest possible heat input is required, as ferritic 17 % Cr steels are susceptible to embrittlement due to grain growth.
Shielding gas: Ar + 1 – 2% O2, Ar + 2 – 3% CO2

Approvals

DB (43.132.04), CE