FAGERSTA Stainless

R656.70

EN: 29 9
AWS: 312

R656.70 (29-9) is a duplex steel intended for high welding demand. The ferrite content steel is approx. 35% calc. by Schaeffler. The high chromium content (30%) gives this grade high oxidation resistance up to 1150°C (2100°F). R656.70 is only delivered in D-cooled condition, giving it slightly higher mechanical properties, with a fine uniform grain size (10-13 ASTM) and minimized precipitation of carbides and sigma phase. This type of alloy is somewhat susceptible to sigma phase formation in temp. range 550-950°C (1020-1740°F). Typical applications are welding wire for wear and heat resistant surfacing or welding dissimilar metals together, particularly if one has nickel content. It is also usable for welding stainless steel to carbon steel.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N		
0.010	0.40	1.85	30.3	9.2	<0.30	0.055		

PRE: 32 (PRE = Cr + 3.3 x Mo + 16 x N)

Comments: Ferrite content by Schaeffler: 35%

THERMAL TREATMENT

Annealing temperature	1050 °C
	1920 °F

PHYSICAL PROPERTIES

Condition: Annealed

Density	7.8 g / cm^3
Specific heat 0-100°C	500 J / kg°C

MAX. OPERATING TEMPERATURE

Operating temp. in air	°C
	°F
Scaling temp. in air	1150 °C
	2100 °F

TYPICAL MECHANICAL PROPERTIES

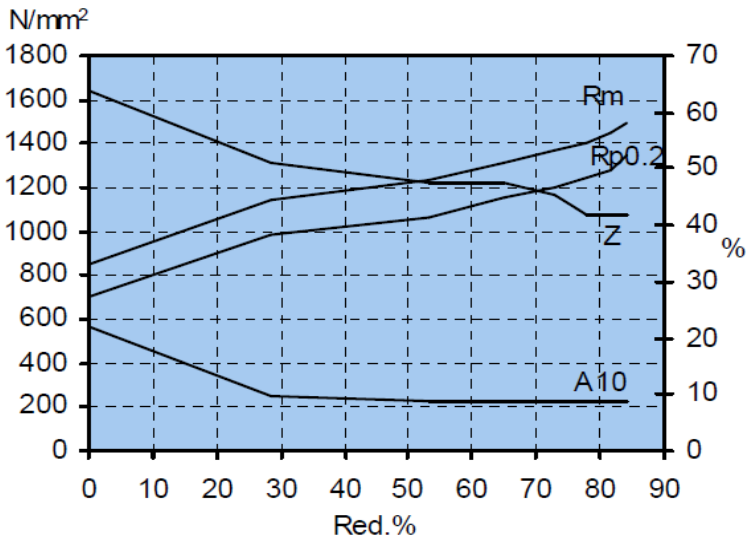
Condition: D-cooled

Proof strength	**Rp0.2**	min. 600 N / mm^2
Tensile strength	**Rm**	750-850 N / mm^2
Elongation	**A10**	min. 20 %

THERMAL CONDUCTIVITY

20 °C	16.0 W / mK

DEFORMATION GRAPH



THERMAL EXPANSION

Thermal expansion per °C x 10-6 from 20°C to:

100 °C	10.0
500 °C	15.0
800 °C	16.2

RESISTIVITY

20 °C	800 µΩmm