



R358.10

EN: 1.4550

Type 347

R358.10 is a columbium (Cb) stabilized stainless steel with an excellent resistance to intergranular corrosion following exposure to temp. in the chromium carbide precipitation range from 430-820°C (810-1510°F). This steel is also advantageous for high temp. service because of good mechanical properties. Exposure in the temp. range 430-820°C (810-1510°F), overall corrosion resistance is reduced less in this grade than when compared to the Ti-alloyed R359.10-steel (Type 321). Typical applications are wire for welded constructions, elevated temperatures and chemical handling equipments.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N	Nb*	
0.025	0.40	1.20	17.8	9.2	<0.30	<0.060	0.45	

PRE: 19 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments: *min-10xC

PHYSICAL PROPERTIES

Condition: Annealed

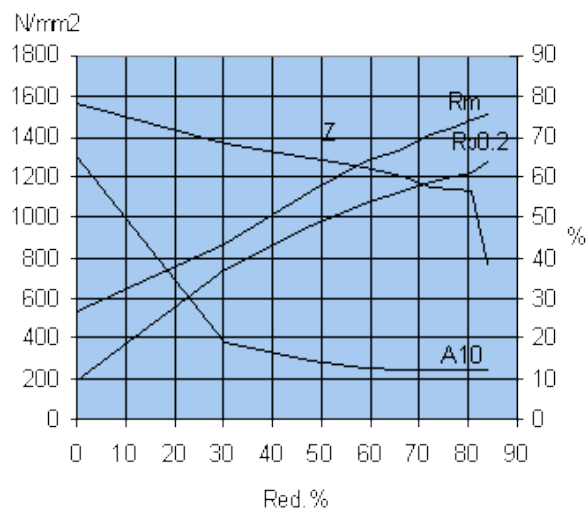
Density	7.9 g / cm ³
Modulus of elasticity, E	200 000 GPa
Specific heat 0-100°C	480 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: Annealed

Proof strength	Rp0.2	min.200 N / mm ²
Tensile strength	Rm	550-650 N / mm ²
Elongation	A10	min.40 %

DEFORMATION GRAPH



THERMAL TREATMENT

Annealing temperature	1050-1120 °C 1920-2050 °F
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MAX. OPERATING TEMPERATURE

Diss. ammonia / Carburizing atm.	815 / 815 °C 1500 / 1500 °F
Scaling temp. in air	850 °C 1560 °F

THERMAL CONDUCTIVITY

20 °C	15.0 W / mK
100 °C	15.5 W / mK
200 °C	17.5 W / mK
400 °C	20.0 W / mK
600 °C	22.5 W / mK
800 °C	25.5 W / mK

THERMAL EXPANSION

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

100 °C	16.0
200 °C	16.5
400 °C	17.5
600 °C	19.0
800 °C	19.5
1000 °C	20.0

RESISTIVITY

20 °C	700 μΩmm
100 °C	750 μΩmm
200 °C	800 μΩmm
400 °C	950 μΩmm
600 °C	1050 μΩmm
800 °C	1150 μΩmm