



R840.21

EN: 1.4539

Type 904L

R840.21 is an austenitic stainless steel characterized by having high resistance towards stress corrosion cracking, pitting attacks in chloride environments, crevice corrosion and to general corrosion in acid environments. The high Ni-content in conjunction with the addition of Cu also results in excellent resistance in sulphuric solutions. The microstructure is fully austenitic and is less sensitive to ferrite and sigma phase precipitation than conventional grades with high molybdenum contents. Typical applications are wire for wirelines, electrostatic precipitators, springs for extremely corrosive environments, joint welding of 904L.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	Cu	N
<0.015	0.35	1.75	20.0	25.0	4.5	1.5	0.050

PRE: 35 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments:

PHYSICAL PROPERTIES

Condition: Annealed

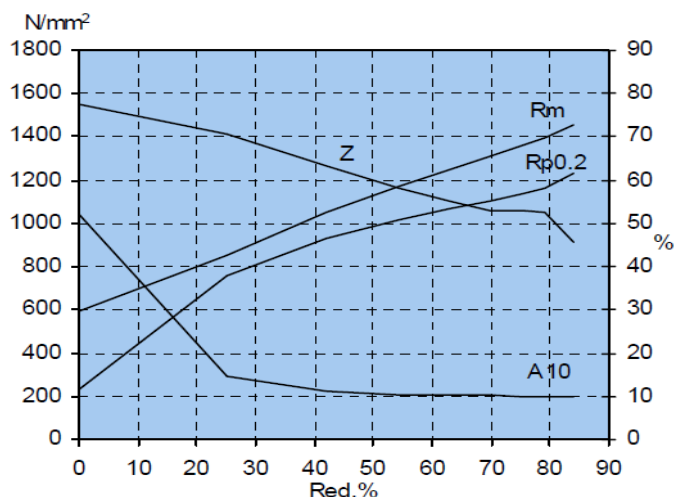
Density	8.0 g / cm ³
Modulus of elasticity, E	195 000 GPa
Specific heat 0-100°C	460 J / kg°C

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

	°C	°F
Annealing temperature	1050-1150	1920-2100

MAX. OPERATING TEMPERATURE

	°C	°F
Operating temp. in air	300	570
Scaling temp. in air	1000	1830

THERMAL CONDUCTIVITY

20 °C	13.0 W / mK
100 °C	14.0 W / mK
200 °C	15.0 W / mK
400 °C	18.0 W / mK
600 °C	21.0 W / mK
800 °C	24.0 W / mK

THERMAL EXPANSION

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

100 °C	15.8
200 °C	16.1
400 °C	16.9
600 °C	17.5
800 °C	18.0
1000 °C	18.5

RESISTIVITY

20 °C	850 μΩmm
100 °C	900 μΩmm
200 °C	950 μΩmm
400 °C	1100 μΩmm
600 °C	1200 μΩmm
800 °C	1300 μΩmm