



R647.77

EN: 14410
UNS: 32750
SAF 2507®

R647.77 (SAF 2507®) is a superduplex grade with excellent corrosion properties for service in highly corrosive environments. Some of the characteristics for this grade are; High resistance to general corrosion and excellent resistance to stress-corrosion cracking, pitting and crevice corrosion. The duplex structure results in very high mechanical strength and high resistance to erosion corrosion and fatigue corrosion. R647.77 is particularly suitable for applications within a temperature range of -40 to +250°C. The grade has good weldability. Due to its high mechanical strength, more force is required for cold forming. Typical applications for R647.77 is severe environments where high corrosion resistance is required.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N		
0.015	0.40	0.80	25.0	6.6	3.8	0.28		

PRE: 42 (PRE = Cr + 3.3 x Mo + 16 x N)

PHYSICAL PROPERTIES

Condition: D-cooled

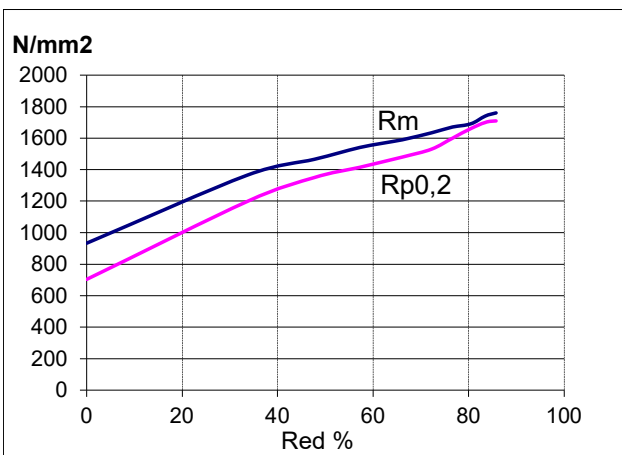
Density	7.8 g / cm ³
Moduls of elasticity, E	200 GPa
Specific heat 0-100°C	500 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: D-cooled

Proof strength	Rp0.2	> 600 N / mm ²
Tensile strength	Rm	850-950 N / mm ²
Elongation	A10	> 25 %

DEFORMATION GRAPH



THERMAL TREATMENT

Annealing temperature	1050-1125 °C
	1922-2057 °F

MAX. OPERATING TEMPERATURE

Operating temp. in air	250 °C
	482 °F
Scaling temp. in air	approx 850 °C
	approx 1560 °F

THERMAL CONDUCTIVITY

20 °C	14 W / m°C
100 °C	15 W / m°C
200 °C	17 W / m°C
300 °C	18 W / m°C
400 °C	20 W / m°C

THERMAL EXPANSION

Thermal expansion per °C x 10-6 from 30°C to:

100 °C	13.5
200 °C	14.0
300 °C	14.0
400 °C	14.5

RESISTIVITY

20 °C	830 μΩmm
100 °C	890 μΩmm
200 °C	960 μΩmm
300 °C	1030 μΩmm
400 °C	1080 μΩmm