

R647.31

EN: 22 9 3 NL

AWS: ER 2209



R647.31 is a duplex welding grade primarily designed for welding of the duplex grade SAF 2205 (EN 1.4462) but it can also be used for welding of other Duplex and Austenitic grades. Due to the high content of both Cr and Mo this grade has a very good resistance to general and pitting corrosion. The duplex microstructure gives a high tensile strength and by that also an excellent resistance to stress corrosion cracking.

CHEMICAL COMPOSITION (Nominal) %

C	Si	Mn	Cr	Ni	Mo	N		
<0.015	0.40	1.40	23.0	8.7	3.1	0.16		

PRE: 36 (PRE = Cr + 3.3 x Mo + 16 x N)

Comments: Ferrite: 44 FN WRC-92

PHYSICAL PROPERTIES

Condition: D-cooled

Density	7.9 g / cm ³
Modulus of elasticity, E	200 GPa
Specific heat 20°C	490 J / kg°C

TYPICAL MECHANICAL PROPERTIES

Condition: D-cooled

Proof strength	Rp0.2	min. 520 N / mm ²
Tensile strength	Rm	770-870 N / mm ²
Elongation	A10	min. 30 %

THERMAL TREATMENT

Annealing temperature	1100-1150 °C
	2000-2100 °F

MAX. OPERATING TEMPERATURE

Operating temp. in air	max. 280 °C
	540 °F
Scaling temp. in air	850 °C
	1560 °F

THERMAL CONDUCTIVITY

20 °C	16.0 W / mK

DEFORMATION GRAPH

