



# HSM Wire International, Inc

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## Alloy 625 - Inconel 625 Nickel Alloy

**Description:** Alloy 625 offers: •Excellent corrosion resistance •Resistant to chloride stress corrosion •Resistant to sulphide stress cracking •High fatigue strength in seawater •Excellent weldability •Low magnetic permeability

**Applications:** Wellhead components, Sheathing, Fasteners, Clamps, Downhole equipment for corrosive/sour service., Propellers and Shafts, Propulsion Motors, Wire Rope, Fasteners.

<b>Nominal Composition:</b>	<b>Al</b>	<b>C</b>	<b>Co</b>	<b>Fe</b>	<b>Mo</b>	<b>Mn</b>	<b>Nb</b>
	0.40	0.10	20 - 23	5.0	8 - 10	0.50	3.15 - 4.15
	<b>Ni</b>	<b>P</b>	<b>S</b>	<b>Si</b>	<b>Ti</b>		
	58.0	0.015	0.015	0.50	0.4		

### Mechanical Properties

#### Annealed Condition

Bar - Rulling Sections up to and including 101.6mm (4")

<b>0.2% Proof Stress minimum</b>	415 N/mm <sup>2</sup>	60 ksi
<b>Ultimate Tensile Strength minimum</b>	830 N/mm <sup>2</sup>	120 ksi
<b>Elongation minimum</b>	30%	

Bar - Rulling Sections greater than 101.6mm (4")

<b>0.2% Proof Stress minimum</b>	345 N/mm <sup>2</sup>	50 ksi
<b>Ultimate Tensile Strength minimum</b>	760 N/mm <sup>2</sup>	110 ksi
<b>Elongation minimum</b>	25%	

### Physical Properties

<b>Density</b>	84.4 kg.m-1
<b>Magnetic Permeability</b>	<1.001 (20°C)
<b>Curie Temperature</b>	-160°C
<b>Young's Modulus</b>	205 x 10 N/mm <sup>2</sup>
<b>Specific Heat</b>	410 J.kg-1.°K-1
<b>Specific Electrical Resistance</b>	1.29 (20°C) (?O.m)
<b>Thermal Conductivity</b>	9.9 (20°C) W.m-1.°K-1
<b>Coefficient of Thermal Expansion</b>	12.8 x 10 (20 - 100°C) (°K-1)

\*To be used as a guideline only.

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