



Material description

CoCrMo is a cobalt based superalloy which has been used in cast form for a long time. This alloy is characterised by its excellent mechanical properties, corrosion resistance, and elevated temperature performance. It is used in many different demanding applications such as turbomachinery, implants, oil and gas and other highly specialised engineering situations.

Physical properties¹

Density (based on 8.19 g/cm ³ theoretical density)	> 99.75%
Pore size	< 100 µm
Porosity rate	< 0.25%
Hardness	min. 200 HV10

Mechanical properties

	As Built	Stress Relieved ²
Tensile strength Horizontal (XY) Vertical (Z)	1200 MPa ± 50 MPa 1200 MPa ± 50 MPa	1100 MPa ± 100MPa 1100 MPa ± 100 MPa
Proof strength (Rp 0.2%) Horizontal (XY) Vertical (Z)	830 MPa ± 50 MPa 830 MPa ± 50 MPa	600 MPa ± 50 MPa 600 MPa ± 50 MPa
Modulus of elasticity Horizontal (XY) Vertical (Z)	190 ± 20 GPa 190 ± 20 GPa	200 ± 20 GPa 200 ± 20 GPa
Elongation at break Horizontal (XY) Vertical (Z)	min. 8%	min. 8%

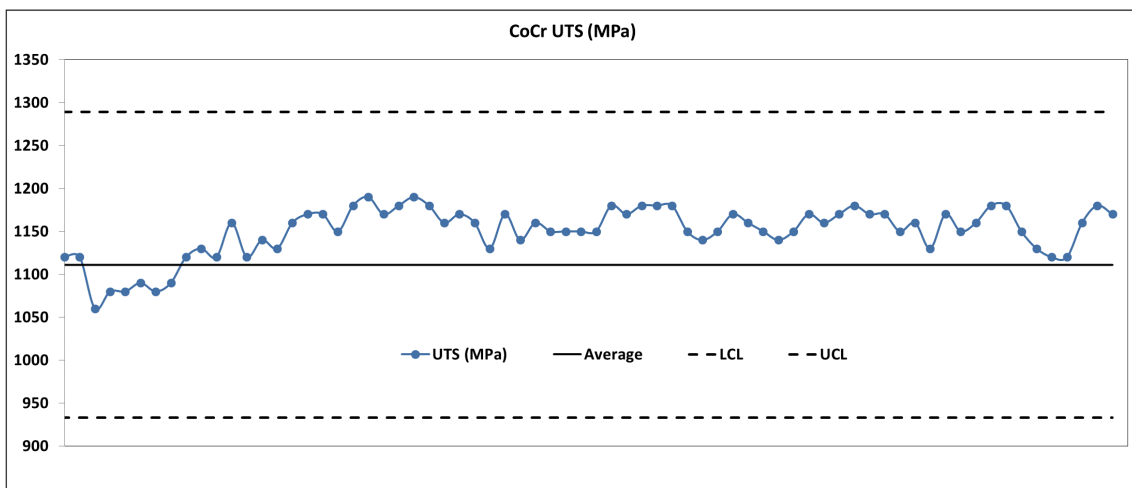
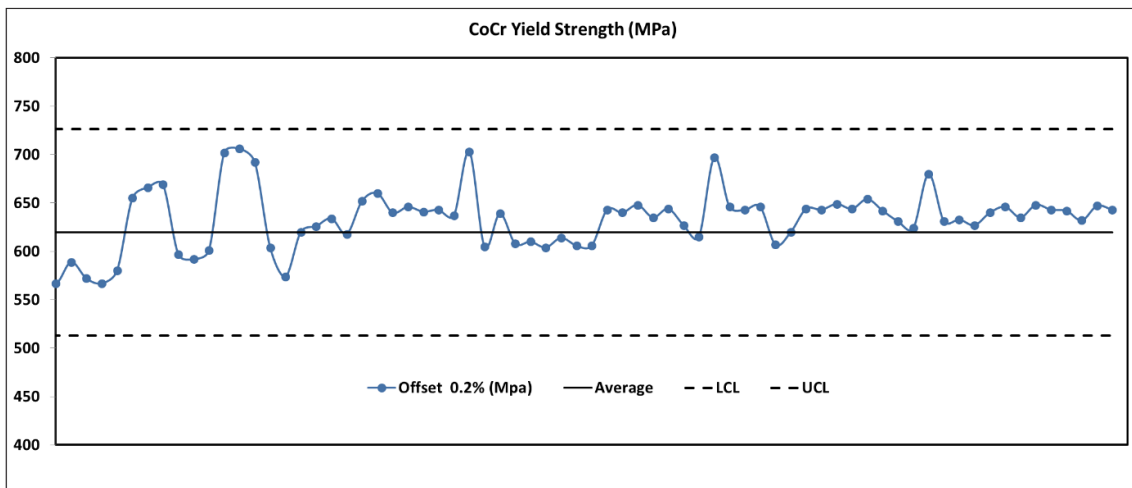
¹ All data gathered using ASTM E8M flat un-machined specimens that were wire EDM to profile with cross section of 2mmx6mm at the gauge section.

² Heat treated in vacuum at 1050°C for 6 hours. Please contact us for bespoke heat treatment to achieve different mechanical properties.

Chemical properties

Material composition wt%	Co	60.00-65.00	Si	1.00 max	C	0.16 max
	Cr	26.00-30.00	Mn	1.00 max	Ni	0.10 max
	Mo	5.00-7.00	Fe	0.75 max		

Statistical Process Control Charts³



Material Properties	Applications	Finishes	Industries
<ul style="list-style-type: none"> Corrosion Resistant High Strength Weldable 	<ul style="list-style-type: none"> Prototyping Engineering Turbomachinery Medical Devices and Implants Biomedical 	<ul style="list-style-type: none"> Machined Spark-eroded Welded Micro shot-peened Polished Coated 	<ul style="list-style-type: none"> Medical Oil and Gas Aerospace

³ Data generated in a production environment through calibration builds, production builds and testing of powders during the goods in procedure. Specimen geometry is ASTM E8M un-machined flat with cross section of 2mmx6mm at the gauge section.