

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS TESTING 4228</p> <p>Accredited to ISO/IEC 17025:2017</p>	<p>Forged Solutions Testing part of Forged Solutions Group Limited</p> <p>Issue No: 019 Issue date: 15 November 2021</p>	
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<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Forged Solutions Testing, UKAS reference 4228, is accredited for a flexible scope that enables them to conduct accredited testing through the update of currently accredited test methods to the latest versions of those test methods for the activities detailed below, in accordance with their documented in-house procedure 26.02

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>METALS, ALLOYS and METAL PRODUCTS</p> <p>Cobalt alloys, Copper alloys, Nickel alloys, Steels and Titanium alloys</p>	<p><u>Mechanical Tests</u></p>	
	<p>Impact: Charpy (U and V-notches) (-80°C to ambient temperature)</p>	<p>BS EN ISO 148-1 ASTM E23 ASTM A370</p>
	<p>Izod</p>	<p>BS 131: Part 1</p>
	<p>Tensile (ambient temperature) (forces from 1.25kN to 500kN)</p>	<p>BS EN ISO 6892-1 BS EN 2002-1 ASTM A370 ASTM E8/E8M</p>
	<p>Tensile (temperatures up to 900°C) (forces from 1.25kN to 250kN)</p>	<p>BS EN ISO 6892-2 BS EN 2002-2 ASTM E21</p>
	<p>Stress Rupture (temperature up to 900°C)</p>	<p>BS EN 2002-005 BS EN ISO 204 ASTM E139 ASTM E 292</p>
	<p>Creep (temperature 300°C to 900°C)</p>	<p>BS EN 2002-005 BS EN ISO 204 ASTM E139</p>
	<p><u>Hardness</u> Brinell (HBW 10/3000)</p>	<p>BS EN ISO 6506-1 ASTM E10</p>
	<p>Rockwell (HRC)</p>	<p>BS EN ISO 6508-1 ASTM E18</p>
	<p>Vickers (HV30 & HV0.3)</p>	<p>BS EN ISO 6507-1 ASTM E92</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Metallography</u>	
Cobalt alloys, Copper alloys, Nickel alloys, Steels and Titanium alloys (cont'd)	Average Grain size (comparison & intercept methods)	ASTM E112
	Grain size determination (As Large As - ALA)	ASTM E930
	Volume Fraction by Manual Point Count	ASTM E562
	Macro Evaluation	Documented in-house method METLAB DOC 3
	Microstructural Evaluation	Documented in-house method METLAB DOC 10
	Inclusion Content (Cleanness)	ASTM E45
	Inclusion or 2 nd Phase Determination by Automatic Image Analysis	ASTM E1245
	Depth of decarburisation by low load hardness technique	ASTM E384 or E92 Documented in-house method METLAB DOC 14
Titanium Alloys	<u>Physical Testing</u>	
	Linear Thermal Expansion (CLTE) (Temperature Range 20 to 800°C)	ASTM E228
	Chemical Tests	
	Determination of Hydrogen	Documented In-House Method Met Lab Doc 15 – using inert gas fusion technique
END		