


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

	<p align="center">Howmet Ltd</p> <p align="center">Issue No: 037 Issue date: 20 March 2025</p>	
<p align="center">0142</p> <p align="center">Accredited to ISO/IEC 17025:2017</p>	<p>Exeter Alloy Heron Road Exeter Devon EX2 7LL</p>	<p>Contact: Mr A Messenger Tel: +44(0)1392 429760 Fax: +44 (0)1392 429702 E-Mail: andy.messenger@howmet.com</p>
<p align="center">Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
NICKEL BASE ALLOYS	<p><u>Chemical Tests</u></p>	<p>Documented In-House Methods from Materials Control Laboratory Manual (MCLM) using:</p>
	<p>Elemental analysis</p>	
	<p>Aluminium Chromium Cobalt Copper Hafnium Iron Manganese Molybdenum Nickel Niobium Palladium Phosphorus Platinum Rhenium Ruthenium Silicon Tantalum Titanium Tungsten Vanadium Yttrium Zirconium</p>	
	<p>Cerium</p> <p>Silicon Phosphorus Boron Lanthanum Calcium Magnesium Aluminium</p>	<p>XRFS (294) XRFS (298)</p> <p>XRFS (298)</p> <p>Spark OES (301)</p>



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NICKEL BASE ALLOYS (cont'd)	<u>Chemical Tests</u> (cont'd) Elemental analysis (cont'd) Carbon Sulphur Nitrogen Oxygen Lithium Beryllium Magnesium Phosphorus Sulfur Chlorine Calcium Scandium Manganese Copper Zinc Gallium Germanium Arsenic Bromine Selenium Rubidium Yttrium Rhodium Palladium Silver Indium Tin Antimony Iodine Tellurium Cesium Lanthanum Cerium Praseodymium Neodymium Samarium Europium Gadolinium Terbium Dysprosium	Combustion and Infra-Red Absorption (300) Inert Gas Fusion (299), (302) Glow Discharge Mass Spectrometry (303)



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NICKEL BASE ALLOYS (cont'd)	<u>Chemical Tests</u> (cont'd) Elemental analysis (cont'd) Holmium Erbium Thulium Ytterbium Lutetium Rhenium Osmium Iridium Platinum Gold Mercury Thallium Lead Bismuth Thorium Uranium Potassium Ruthenium Cadmium	Glow Discharge Mass Spectrometry (303)

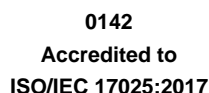


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IRON BASE ALLOYS	<u>Chemical Tests</u>	
	Elemental analysis	
	Aluminium Cerium Chromium Cobalt Copper Iron Manganese Molybdenum Niobium Phosphorus Silicon Tantalum Tin Titanium Tungsten Vanadium Zirconium	XRFS (294) XRFS (298)
	Carbon Sulphur	Combustion and Infra-Red Absorption (300)
	Nitrogen Oxygen	Inert Gas Fusion (299), (302)



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METALS, ALLOYS AND METAL PRODUCTS	<u>Mechanical Tests</u> Vickers Hardness (HV 30) Rockwell Hardness (HRC) Stress Rupture (700°C -1050°C) Tensile tests Ambient Temperature (Range 0.1 - 50kN) Elevated Temperature (650 °C and 850 °C) Excluding the determination of Young's Modulus	BS EN ISO 6507-1:2023 ASTM E92 - 23 BS EN ISO 6508-1:2023 ASTM E18-24 BS EN 2002-005:2007 ASTM E139-11(2018) BS EN ISO 204:2023 BS EN ISO 6892-1:2019 ASTM E8/E8M-2024 BS EN 2002-2:2005 BS EN ISO 6892-2:2018 ASTM E21-20
END		