

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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



0281

Accredited to
ISO/IEC 17025:2005

Special Metals Wiggin Ltd trading as IncoTest

Issue No: 041 Issue date: 17 March 2017

A Division of Special Metals
Wiggin Ltd
Holmer Road
Hereford
HR4 9SL

Contact: Mr P Scrimshire
Tel: +44 (0)1432-352230
Fax: +44 (0)1432-353545
E-Mail: peter.scrimshire@incotest.co.uk
Website: www.incotest.co.uk

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METALLIC PRODUCTS	<p><u>Mechanical Tests</u></p> <p>Bend</p> <p>Creep and Stress Rupture:</p> <p>Creep (temperature range ambient to 1100°C))</p> <p>Stress Rupture (temperature range ambient to 1200°C)</p> <p>Coefficient of linear expansion</p> <p>Fatigue:</p> <p>Fatigue: Rotating bending (temperature range ambient to 800°C)</p> <p>Fatigue: Low and high cycle tensile/compressive waveforms with (a) Force (temperature range ambient to 1473K) (Forces up to ± 100 kN)</p>	<p>BS EN ISO 7438:2016</p> <p>BS EN 2002-005 :2007 BS EN ISO 204 :2009 ASTM E139-11</p> <p>BS EN 2002-005 :2007 BS EN ISO 204 :2009 ASTM E139-11 ASTM E292-09^{e1}</p> <p>Documented In-house Method 66-6801 based on ASTM E228-11(2016)</p> <p>BS ISO 1143:2010</p> <p>BS 3518-3:1963(1997) ASTM E466-15</p>



0281
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Special Metals Wiggin Ltd trading as IncoTest
Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METALLIC PRODUCTS (cont'd)	<p><u>Mechanical Tests</u> (cont'd)</p> <p>Fracture Toughness: K_{1C}, J_C & CTOD (temperature range -80 to 1000°C)</p> <p>Hardness:</p> <p>Vickers (HV5, 10 & 30)</p> <p>Low Force and Microhardness Vickers (HV0.1, 0.2 & 0.3)</p> <p>Brinell (HB10/3000 and 2.5/187.5)</p> <p>Rockwell (B and C scales only)</p> <p>Impact:</p> <p>Izod</p> <p>Charpy (V- and U- notches) (temperature range -60°C to 1000°C and -196 °C and -80 °C (-78.5 °C) dry ice sublimation temperature)</p> <p>Tensile (ambient temperature)</p>	<p>BS 7448-1 :1991 BS EN ISO 12737:2010 (withdrawn) ASTM E399-12^{e3} ASTM E1820-15a Documented In-house Method 6-6819</p> <p>BS EN ISO 6507-1:2005 ASTM E92-16</p> <p>BS EN ISO 6507-1:2005 ASTM E384-16</p> <p>BS EN ISO 6506-1:2014 ASTM E10-15a</p> <p>BS EN ISO 6508-1:2016 ASTM E18-16</p> <p>BS 131-1:1961(1996) And't 1 and 2</p> <p>BS EN ISO 148-1 :2010 ASTM E23-16b</p> <p>BS EN ISO 6892-1:2016 BS EN 2002-1:2005 BS 4A4:Part 1:Section 1:1966 (withdrawn) ASTM E8/E8M-16a ASTM A370-13</p>



0281
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Special Metals Wiggin Ltd trading as IncoTest
Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METALLIC PRODUCTS (cont'd)	<u>Metallurgical Tests</u>	
	Tensile (temperature range ambient to 1000°C) (Forces up to 600 kN)	BS EN ISO 6892-2 :2011 BS EN 2002-2:2005 BS 4A4:Part 1:Section 2:1967 (withdrawn) ASTM E21-09
	Tensile (temperature range -80°C to ambient and -196 °C) (Forces up to 600 kN)	Documented In-house Methods 6-6823 and 6-6824
Fasteners		ASTM F606/F606M-16
	<u>Physical Tests</u>	
	Dynamic Young's Modulus of Elasticity at ambient temperature	Documented In-house Method 6-6803 based on ASTM E1875-13
	<u>Metallurgical Tests</u>	
	Non-metallic inclusions	ASTM E45-13 ISO 4967:2013 DIN 50602:1985 (withdrawn) AFNOR NFA 04-106:1984
	Grain size	BS EN ISO 643:2012 ASTM E112-13 ASTM E930-99 (2015) ASTM E1181-02 (2015) AFNOR NFA 04-102:1980
	Alpha Case	Documented in-house method SI 6-6740 using micrographic and micro hardness techniques.



0281
Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Special Metals Wiggin Ltd trading as IncoTest
Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS and ALLOYS Carbon & Low Alloy Steels, Cobalt Alloys, Nickel Alloys (including Cupro Nickels), Stainless Steels, and Titanium Alloys	<u>Chemical Tests</u> Elemental Analysis Aluminium Cerium Chromium Cobalt Copper Hafnium Iron Manganese Molybdenum Nickel Niobium Palladium Phosphorus Silicon Tantalum Titanium Tungsten Vanadium Yttrium Zirconium	Documented in-house method SI 6-6919 using X-ray fluorescence techniques
Nickel based Alloys	Elemental Analysis Boron Calcium Magnesium Silicon	Documented in-house method SI 6-6934 using Spark Source optical emission techniques
Carbon & Low Alloy Steels, Cobalt Alloys, Nickel Alloys and Stainless Steels	Elemental Analysis Antimony Arsenic Bismuth Cadmium Gallium Indium Magnesium Lead Selenium Silver Tellurium Thallium Tin Zinc	Documented in-house method SI 6-6890 using Hollow Cathode Source optical emission techniques



0281

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

Special Metals Wiggin Ltd trading as IncoTest

Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS and ALLOYS Carbon and Low Alloy Steels, Stainless Steels, Cobalt Alloys, Copper Alloys and Nickel Alloys	<u>Chemical Tests</u> Elemental Analysis Boron Antimony Arsenic Bismuth Beryllium Cadmium Gallium Germanium Gold Indium Lead Magnesium Mercury Palladium Platinum Potassium Rhenium Ruthenium Selenium Silver Sodium Tellurium Thallium Thorium Tin Uranium Yttrium Zinc	Documented in-house method SI-6-6894 using Laser Ablation ICP- MS



0281

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

Special Metals Wiggin Ltd trading as IncoTest

Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>METALS and ALLOYS</p> <p>Carbon and Low Alloy Steels, Stainless Steels, Cast Irons, Cobalt Alloys, Copper Alloys, Aluminium Alloys, Nickel Alloys and Titanium Alloys</p>	<p><u>Chemical Tests</u></p> <p>Elemental Analysis</p> <p>Aluminium Antimony Arsenic Beryllium Boron Calcium Cerium Chromium Cobalt Copper Hafnium Iron Lanthanum Lead Manganese Magnesium Molybdenum Nickel Niobium Palladium Phosphorus Platinum Rhenium Silicon Tantalum Titanium Tin Tungsten Vanadium Yttrium Zinc Zirconium</p>	<p>Documented in-house method SI 6-6935 using Inductively Coupled Plasma Source optical emission techniques</p>
<p>Carbon and Low Alloy Steels, Stainless Steels, Cast Irons, Cobalt Alloys, Copper Alloys, Nickel Alloys and Titanium Alloys</p>	<p>Determination of Carbon and Sulphur</p>	<p>Documented in-house methods SI 6-6936 and SI 6-6938 using Combustion technique with IR detection</p>
<p>Carbon and Low Alloy Steels, Stainless Steels, Cast Irons, Cobalt Alloys, Nickel Alloys and Titanium Alloys</p>	<p>Determination of Hydrogen</p>	<p>Documented in-house method SI 6-6939 using Inert gas fusion techniques</p>



0281

Accredited to
ISO/IEC 17025:2005

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Special Metals Wiggin Ltd trading as IncoTest
Issue No: 041 Issue date: 17 March 2017

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS and ALLOYS Carbon and Low Alloy Steels, Stainless Steels, Cast Irons, Cobalt Alloys, Copper Alloys, Nickel Alloys and Titanium Alloys	<u>Chemical Tests</u> Determination of Oxygen and Nitrogen	Documented in-house method SI 6-6918 using Inert gas fusion techniques
END		