Schedule of Accreditation

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IncoTest

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

Contact: Dr J R Silk
Tel: +44 (0)1432-352230
Fax: +44 (0)1432-353545
E-Mail: jonathan.silk@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	<u>Mechanical Tests</u>	
	Bend	BS EN ISO 7438:2005
	Creep and Rupture from ambient temperature to 1100°C (creep) or 1200°C (rupture)	BS EN 2002-05 BS EN ISO 204 ASTM E139-06 ASTM E292-09 MIL-STD 1312-10 (obsolete)
	Coefficient of linear expansion	ASTM E228-06 Documented In-house Method 66-6801
	Fatigue:	
	Fatigue Crack Growth Rate from ambient temperature to 1000°C	ASTM E647-08
	Fatigue: Rotating bending (temperature range ambient to 800°C)	BS 3518:Part 2:1962(1997)
	Fatigue: Low and high cycle tensile/compressive waveforms with (a) Force (b) Strain (temperature range ambient to 1473K) (Forces up to ± 100 kN)	BS 3518:Part 3:1963(1997) BS 7270:2006 ASTM E466-07 ASTM E606-04e1 Documented In-House Methods 6-6810 and 6-6845
	Fracture Toughness: K_{1C}, J_C & CTOD (temperature range -80 to 1000°C)	BS 7448-1 :1991 BS EN ISO 12737:2005 ASTM E399-09 ASTM E1820-09 Documented In-house Method 6-6819

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METALLIC PRODUCTS (cont'd)	Mechanical Tests (cont'd)	
	Hardness:	
	Vickers (HV5, 10 & 30)	BS EN ISO 6507-1:2005 ASTM E384-10
	Vickers (HV0.01 & 0.2)	BS EN ISO 6507-1:2005
	Brinell (HB10/3000 and 5/750)	BS EN ISO 6506-1:2005 ASTM E10-08
	Rockwell (B and C scales only)	BS EN ISO 6508-1:2005 ASTM E18-08b MIL-STD 1312-6 (obsolete)
	Microhardness Vickers	ASTM E384-10
	Impact:	
	Izod Charpy (V- and U- notches) (in the temperature range -196ºC and -80ºC to 1000ºC)	BS 131:Part 1:1961(1996) BS EN 10045-1:1990 ASTM E23-07ae1
	Tensile (in the temperature range -196ºC and -80ºC to 1000º) (Forces up to 600 kN)	BS EN ISO 6892-1:2009 BS EN 10002-5:1992 BS EN 2002-1:2005 BS EN 2002-2:2005 BS 4A4:Part 1:Section 1:1966 BS 4A4:Part 1:Section 2:1967 ASTM E8/E8M-09 ASTM E21-09 ASTM A370-09ae1 ASTM F606/F606M-07 MIL-STD 1312-8 (obsolete) MIL-STD 1312-18 (obsolete) Documented In-house Methods 6-6823 and 6-6824
	Physical Tests	
	Dynamic Young's Modulus of Elasticity at ambient temperature	ASTM E1875-08 Documented In-house Method 6-6803

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>	
	Non-metallic inclusions	ASTM E45-05e3 ISO 4967:1998 DIN 50602:1985 AFNOR NFA04-106-84
	Grain size	BS EN ISO 643:2003 ASTM E112-96(2004)e2 ASTM E930-99 (2007) ASTM E1181-02(2008) AFNOR NF A04-102:1980 EURONORM 103-71
	<u>Corrosion Tests</u>	
	Intergranular corrosion:	
	Huey test	ASTM A262-02a(2008) (Practice C) BS EN ISO 3651-1:1998 Documented In-house Methods 6-705
	Strauss test	BS EN ISO 3651-2:1998 ASTM A262-02a(2008) (Practice E) Documented In-house Methods 6-6891, 6-7051 & 6-7055
	Streicher test	ASTM G28-02(2008) Method A & B Documented In-house Method 6-7052
METALS and ALLOYS	<u>Chemical Tests</u>	
Carbon & Low Alloy Steels, Cobalt Alloys, Nickel Alloys, Stainless Steels, and Titanium Alloys	Elemental Analysis	Documented in-house method SI 6-6919 using X-ray fluorescence techniques
Nickel based Alloys	Elemental Analysis	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	Documented in-house method SI 6-6890 using Hollow Cathode Source optical emission techniques

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS and ALLOYS (cont'd)	Chemical Tests	
Carbon and Low Alloy Steels, Stainless Steels, Cast Irons, Cobalt Alloys, Copper Alloys, Aluminium Alloys, Nickel Alloys and Titanium Alloys	Elemental Analysis	Documented in-house method SI-6-6894 using trace elements by Laser Ablation ICP-MS
	Elemental Analysis	Documented in-house method SI 6-6935 using Inductively Coupled Plasma Source optical emission techniques
	Determination of Carbon and Sulphur	Documented in-house methods SI 6-6936 and SI 6-6908 using Combustion technique with IR detection
	Determination of Hydrogen	Documented in-house method SI 6-6924 using Inert gas fusion techniques
	Determination of Oxygen and Nitrogen	Documented in-house method SI 6-6918 using Inert gas fusion techniques
METALS, ALLOYS and METAL PRODUCTS	Tests codes:- Instrumented chemistry (F) Carbon determination (G) Sulfur determination (H) Hydrogen analysis (I) Nitrogen analysis (J) Oxygen analysis (K) Trace element analysis (XD) Ambient temperature tensile (A) Elevated temperature tensile (B) Stress rupture (C) Hardness testing (M) Creep testing (XA) Thermal expansion (XK) Metallography - micro (L) Metallography - macro (XL)	GE Aviation S-400 (31 Oct 2007)
END		