Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

0281

Accredited to ISO/IEC 17025:2005

IncoTest

Issue No: 032 **Issue date:** 26 February 2009

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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>	
	Fatigue Crack Growth Rate from ambient temperature to 1273K	ASTM E647-08
	Creep and Rupture from ambient temperature to 1373K (creep) or 1473K (rupture)	BS 4A4:Part 1:Section 3:1967 BS EN 10291:2000 ASTM E139-06 ASTM E292-01 MIL-STD 1312-10 (obsolete)
	Fatigue: Rotating bending (temperature range ambient to 1073K)	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 E606-04 Documented In-House Methods 6-6810 and 6-6845
	Fracture Toughness: K_{1C} (temperature range 193 to 1273K)	BS EN ISO 12737:2005 ASTM E399-06 Documented In-house Method 6-6819
	Hardness: Vickers (HV5, 10 & 30)	BS EN ISO 6507-1:1998 (Withdrawn) ASTM E92-82(2003)
	Vickers (HV0.2) Vickers (HV0.01)	BS EN ISO 6507-1:1998 (Withdrawn)

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)	
	Brinell (HB10/3000 and 5/750)	BS EN ISO 6506-1:1999 (Withdrawn) ASTM E10-07
	Rockwell (B and C scales only)	BS EN ISO 6508-1:1999 (Withdrawn) ASTM E18-08 MIL-STD 1312-6 (obsolete)
	Microhardness Vickers	ASTM E384-08
	Impact:	
	Izod Charpy (V- and U- notches) (in the temperature range 77 to 1273K)	BS 131:Part 1:1961(1996) BS EN 10045-1:1990 ASTM E23-07
	Tensile at 77K and from 203 to 1473K (Forces up to 600 kN)	BS EN 10002-1:2001 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-08 ASTM E21-05 ASTM A370-08 ASTM F606/F606M-07 MIL-STD 1312-8 (obsolete) MIL-STD 1312-18 (obsolete) Documented In-house Methods 6-6823 and 6-6824
	Bend	BS EN ISO 7438:2005
	Dynamic Young's Modulus of Elasticity @ ambient temperature	ASTM E1875-00 Documented In-house Method 6-6803
	Coefficient of linear expansion	ASTM E228-06 Documented In-house Method 66-6801

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METALLIC PRODUCTS (cont'd)	Metallurgical Tests	
	Non-metallic inclusions	ASTM E45-05 ISO 4967:1998 DIN 50602:1985 AFNOR NFA04-106-84
	Grain size	BS EN ISO 643:2003 ASTM E112-96(2004) ASTM E930-99 (2007) ASTM E1181-02 AFNOR NF A04-102:1980 EURONORM 103-71
	Corrosion Tests	
	Intergranular corrosion:	
	Huey test	ASTM A262-02a (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 (Practice E) Documented In-house Methods 6-6891, 6-7051 & 6-7055
	Streicher test	ASTM G28-08 Method A & B Documented In-house method 6-7052
METALS and ALLOYS	Chemical Tests	
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)	<u>Chemical Tests</u>	
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
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 6-6935 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)

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