

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Materials Engineering Limited</h3> <p>Issue No: 028    Issue date: 03 August 2011</p>	
	<p>Hareness Circle Altens Industrial Estate Aberdeen Scotland AB12 3LY</p>	<p>Contact: Mr K MacAskill Tel: +44 (0)1224-890020 Fax: +44 (0)1224-890220 E-Mail: enquiries@Mateng.co.uk Website: Mateng.co.uk</p>
<p>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
METALS, ALLOYS and METAL PRODUCTS	<u>Mechanical Tests</u>	
	Fracture toughness CTOD	BS 7448:Part 1:1991 BS 7448:Part 2:1997 (Withdrawn)
	Tensile (Forces up to 2000 kN)	BS EN ISO 6892-1:2009 Method B ASTM E8- 08 Documented In-House Method Test Proc No 2.4
	Bend	BS EN ISO 5173:2010 ASME IX-2010 API-1104-2005
	Charpy impact at temperatures between ambient and -130°C and at -196°C Crystallinity	BS EN 10045-1:1990 ASTM E23- 07ae1 BS 131:Part 5:1965(1996)
	Vickers hardness (HV10)	BS EN ISO 6507-1:2005 ASTM E384-10 <sup>e2</sup>
	Rockwell hardness (HRBW and HRC scales)	BS EN ISO 6508-1:2005 ASTM E18-08b Documented In-House Method Tech Proc No 3.2
	Equotip hardness (Comparative)	



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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>Mechanical Tests</u> (cont'd)	
Weldments	Transverse tensile, Impact, Bend, Hardness, Macro/ Micro-examination	BS EN ISO 15614-1:2004 BS EN ISO 15614-2:2005 BS EN 287:Part 1:2004 BS EN ISO 9606-2:2004 BS EN ISO 4136:2010 BS EN ISO 9016:2011 BS EN ISO 5173:2010 BS EN ISO 9015:2011 BS EN 1321:1997 BS 4872:Part 1:1982(1995) BS 4872:Part 2:1976(1995) BS 4515-1:2004 BS 4515-2:1999 API 1104- 2005 API 6A 20 <sup>th</sup> edition AWS D1.1/D1.1M:2010 ASME IX- 2010
	<u>Metallurgical Tests</u>	
	Grain size (Comparison method) Volume fraction Micro-examination - to determine microstructural constituents Macro-examination - to determine defect distribution and definition of HAZ Identification of Surface Structure and Modes of Failure	ASTM E112-2010 ASTM E562-08 Documented In-House Method Method No. 4.14 Documented In-House Method Method No. 4.13  Documented In-House Method No.4.12 using scanning electron microscopy
	<u>Corrosion Tests</u>	
Stainless Steels	Susceptibility to intergranular attack in austenitic stainless steels Pitting and crevice corrosion resistance of stainless steels	ASTM A262-10 Practice E  ASTM G48-03 (2009) Method A
	<u>Chemical Tests</u>	
Plain carbon, low alloy and stainless steels	Quantitative elemental analysis for: C, Si, Mn, P, S, Cr, Mo, N, Ni, Cu, V, Ti, Nb, Co, Zr, Pb, B and W	Documented In-House Method 1.15 using optical emission spectroscopy



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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)  Nickel and Nickel alloys	<u>Chemical Tests</u>  Quantitative elemental analysis for:  C, Si, Mn, P, S, Cu, N, Fe, Cr, Mo, Ti, A1 and Nb	
END		