


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Howco Metals Management</h3> <p>Issue No: 026 Issue date: 29 July 2016</p>	
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<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Howco Metals Management, UKAS reference 1593, is accredited for a flexible scope that enables them to conduct accredited testing through the update of currently accredited test methods to the latest versions of those test methods, for the activities detailed below, in accordance with their quality management system.

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
METALS, ALLOYS and METAL PRODUCTS	<u>Corrosion Tests</u>	
Stainless steels	Pitting and crevice attack	ASTM G48 Methods A and B Shell Engineering Document ES/247 Rev 2002 Shell Engineering Document DEP 30.10.03.35 EPE – June 2008 (Section 6 only)
	Intergranular attack	ASTM A262 Practice A and E ASTM G28 Method A
	<u>Mechanical Tests</u>	
	Hardness:	
	Rockwell (B and C scales)	ASTM A370 ASTM E18
	Vickers	ASTM E384 BS EN ISO 6507-1
	Impact:	
	Charpy (V notch) (Temperature range -196°C to ambient)	BS EN ISO 148-1 ASTM A370 ASTM E23
	Crystallinity	BS 131-5
	Lateral expansion and percent shear	BS EN ISO 148-1 ASTM E23



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<p><u>Mechanical Tests</u></p> <p>Tensile (Forces from 5 kN to 500 kN)</p> <p><u>Metallurgical Tests</u></p> <p>Grain size</p> <p>Inclusion content</p> <p>Volume fraction</p> <p>Identification of delta and Laves phases in Inconel 718</p>	<p>BS EN ISO 6892-1 (Method B) ASTM A370 ASTM E8/E8M Method A</p> <p>ASTM E112 (comparative and planimetric methods) ASTM E1181/API 6A718 2nd Edition §4.2.2.2</p> <p>ASTM E45</p> <p>ASTM E562</p> <p>API 6A718 2nd Edition §4.2.2.3 API 6ACRA</p>
Steel bars, billets, blooms & forgings excluding continuously cast product	Macroetch examination (Rating)	ASTM A604/A604M ASTM E381/API STD 718 2 nd Edition §4.2.1.2 API 6ACRA 1 st Edition
Weldments	<p>Tests designated in specified welding codes as detailed below:</p> <p>Bend, Hardness, Impact, Tensile, and Macro examination in accordance with specific welding codes</p>	<p>BS EN ISO 5173 BS EN ISO 9015-1 BS EN ISO 9016 BS EN ISO 5178 BS EN ISO 4136 BS EN ISO 17639 BS EN ISO 15614-1 ASME IX AWS D1.1/D1.1.M BS EN 9606-1 NACE MR0175/ISO 15156-2</p>

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