

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

| | | |
|---|---|---|
|  <p>UKAS TESTING 0046</p> <p>Accredited to ISO/IEC 17025:2017</p> | <h3>Special Testing Ltd</h3> <p>Issue No: 061 Issue date: 16 November 2021</p> | |
| | <p>Bacon Lane Sheffield South Yorkshire S9 3NH</p> | <p>Contact: Mr L Burdett Tel: +44 (0)114 244 1061 Fax: +44 (0)114 244 5566 E-Mail: liamburdett@specialsteelgroup.com Website: www.specialtesting.co.uk</p> |
| <p>Testing performed at the above address only</p> | | |

DETAIL OF ACCREDITATION

| |
|---|
| <p>Flexible Scope</p> <p>The laboratory is accredited to ISO/IEC17025:2017 for testing activities in accordance with the standards highlighted in the schedule and internal procedure for flexible scope QP17. This may also include tests on the same or similar product types against standards, or customer-specified methods, that are not specifically listed in this Schedule, providing that:</p> <p>(1) The method or standard does not introduce new principles of measurement.</p> <p>(2) The method or standard does not require measurements to be made outside the parametric boundaries defined within the standard specifications already accredited and detailed within this Schedule of Accreditation.</p> <p>Information about flexible scopes of accreditation is available in UKAS document GEN4</p> |
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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 | <u>Corrosion Tests</u> | |
| Austenitic stainless steels | Susceptibility to intergranular attack | BS EN ISO 3651-2 Method A, B & C ASTM A262 Practice A, C & E |
| Wrought, nickel and Chromium bearing alloys | Susceptibility to intergranular attack | ASTM G28 Practice A, B |
| Stainless steels | Crevice & pitting resistance | ASTM G48 Practice A, B |
| Duplex stainless steels | Detecting detrimental intermetallic phases | ASTM A923 (Method C) |
| | <u>Mechanical Tests</u> | |
| | Bend | BS EN ISO 7438 |



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| METALS, ALLOYS and METAL PRODUCTS (cont'd) | <p><u>Mechanical Tests</u> (cont'd)</p> <p>Hardness:</p> <p>Brinell (10/1000), (10/3000)</p> <p>Rockwell (Scales B & C)</p> <p>Vickers (HV10 and HV30)</p> <p>Vickers Micro-hardness (HV0.3, 0.5 and HV1.0)</p> <p>Impact:</p> <p>Izod Charpy (V and U notches) (temperatures from -196°C to ambient)</p> <p>Tensile - Ambient temperature (forces from 0.6 kN to 250 kN)</p> <p>Tensile – Elevated temperatures (from ambient to 990°C and forces from 0.6 kN to 250 kN)</p> <p>Stress rupture (temperatures from ambient to 1000°C)</p> | <p>BS EN ISO 6506-1 ASTM A370 ASTM E10</p> <p>BS EN ISO 6508-1 ASTM A370 ASTM E18</p> <p>BS EN ISO 6507-1 ASTM E92</p> <p>BS EN ISO 6507-1 ASTM E384</p> <p>BS 131:Part 1 BS EN ISO 148-1 ASTM E23 ASTM A370 ASTM A923 (Method B)</p> <p>BS 4A4-1-1 BS EN 2002-1 BS EN ISO 6892-1 ASTM E8/E8M ASTM A370</p> <p>BS EN 2002-2 BS EN ISO 6892-2 ASTM E21</p> <p>BS EN ISO 204 BS 4A4-Part 1-Section 3(Withdrawn) BS EN 2002-005 ASTM E139 ASTM E292</p> |
| Fasteners – external threads | Proof load (Force from 20kN to 1500kN) | ASTM A370 (Annex 3) ASTM F606/F606M BS EN ISO 898-1 BS EN ISO 3506-1 |



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| METALS, ALLOYS and METAL PRODUCTS (cont'd) | <u>Mechanical Tests</u> (cont'd) | |
| | Tensile - including wedge loading (Force from 20kN to 1500kN) | ASTM A370 (Annex 3) ASTM F606/F606M BS EN ISO 898-1 BS EN ISO 3506-1 |
| Fasteners – internal threads | Proof load (Force from 20kN to 1500kN) | ASTM A194/A194M ASTM A962/A962M ASTM F606/F606M BS EN ISO 898-2 BS EN ISO 3506-2 |
| | <u>Metallurgical Tests</u> | |
| | Decarburisation | BS EN ISO 3887 (microscopic method) ASTM E1077 (macro & microscopic methods) |
| | Alpha Case | Documented In-House Method TP/1075 |
| | Macroetch examination | Documented In-House Method TP/1036 ASTM E381 ASTM A604/A604M API 6A718 |
| | Volume Fraction Counting | BS 7590 ASTM E562 |
| Duplex stainless steels | Detecting detrimental Intermetallic phases | ASTM A923 (Method A) |
| | Ferrite content | Documented In-House Method TP/1057 using Fischer Ferritscope |
| | Grain size | BS EN ISO 643 ASTM E112 (comparison & Intercept methods) ASTM E930 ASTM E1181 |
| | Inclusion content | ASTM E45 Documented In-House Method TP/1028 BS4S100 (withdrawn) |



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| METALS, ALLOYS and METAL PRODUCTS (cont'd) | <u>Metallurgical Tests</u> (cont'd) Replica Microstructures Sulphur prints Determination of surface features including fracture surfaces at magnifications of X10 to X2000 | ASTM E1351 ASTM E1180 Documented In-House Method TP/1046 ASM Metals Handbook Vol. 9 |
| Ferrous and Non-ferrous alloys including: Manganese Steel, Tool Steel, General Steel and Low Alloy Steel Nickel base alloys Stainless Steel, Low Alloy Steel Nickel Base Alloys Ferrous and Non-ferrous metals and alloys | <u>Chemical Tests</u> Elemental analysis Fe, C, Si, Mn, P, S, Cr, Mo, Ni, Al, As, B, Co, Cu, Nb, Pb, Sn, Ti, V, W Fe, C, Si, Mn, P, S, Cr, Mo, Ni, Al, As, B, Co, Cu, Nb, Pb, Sn, Ti, V, W Fe, C, Si, Mn, P, S, Cr, Mo, Ni, Al, As, B, Co, Cu, Nb, Pb, Sn, Ti, V, W, Ta, Sb Fe, C, Si, Mn, P, S, Cr, Mo, Ni, Al, As, B, Co, Cu, Nb, Pb, Sn, Ti, V, W, Ta Carbon/Sulphur Analysis Oxygen/Nitrogen Analysis Hydrogen Analysis | Documented In-House Method TP/1058 using a Spectro Maxx M Optical Emission Spectroscopy Documented In House Method TP 1051 using an ELTRA CS800 analyser Documented In House Method TP 1052 using an ELTRA ON900 analyser Documented In House Method TP 1052a using an LECO H836 analyser |
| END | | |