

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

| | | |
|--|---|--|
|  0638 Accredited to ISO/IEC 17025:2017 | Special Melted Products Limited | |
| | Issue No: 050 Issue date: 07 June 2022 | |
| | Blackmore Street Sheffield S4 7TZ | Contact: Darrell Horsfield Tel: +44 (0)114 2201393 E-Mail: Darrell.Horsfield@ATImetals.com Website: www.ATImetals.com |
| Testing performed by the Organisation at the locations specified below | | |

Locations covered by the organisation and their relevant activities

Laboratory locations:

| Location details | Activity | Location code | |
|---|--|---|---|
| Address Blackmore Street Sheffield S4 7TZ | Local contact Mr D Horsfield | <u>Support functions</u> Technical support General support Management system support <u>Testing</u> Corrosion tests Mechanical tests Metallurgical tests | A |
| Address Carlisle Street East Works Carlisle Street East Sheffield S4 7QR | Local contact Mr D Horsfield | <u>Testing</u> Elemental analysis Metallurgical tests (Macro) | B |



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DETAIL OF ACCREDITATION

| Materials/Products tested | Type of test/Properties measured/Range of measurement | Standard specifications/ Equipment/Techniques used | Location Code |
|--|--|--|---------------|
| METALS, ALLOYS and METAL PRODUCTS | <u>Chemical Tests</u> | | |
| Iron base alloys | Elemental analysis: C, Si, Mn, P, S, Cr, Mo, Ni, Al, AS, B, Co, Cu, N, Nb, Sn, Ti, V, W, Zr, Ca, Mg, Ta | Documented In-house methods using OES: TI OP-CHEM-8-002-LTD & TI OP-CHEM-8-003-LTD | B |
| Nickel base alloys | C, Si, Mn, P, S, Cr, Mo, Al, As, B, Co, Cu, N, Nb, Sn, Ti, V, W, Zr, Ca, Mg, Ta, Fe | Documented In-house methods using OES: TI OP-CHEM-8-002-LTD & TI OP-CHEM-8-003-LTD | B |
| Iron / Nickel base alloys | Si, Mn, P, Cr, Mo, Ni, Al, Co, Cu, Nb, Sn, Ti, V, W, Zr, Ta, Fe | Documented In-house methods using XRF: TI OP-CHEM-3-003-LTD | B |
| Titanium base alloys | Si, Mn, Cr, Mo, Ni, Al, Co, Cu, Nb, Sn, V, W, Zr, Fe, Y | Documented In-house methods using XRF: TI OP-CHEM-3-003-LTD | B |
| Iron / Nickel based alloys | C, S, N, H, O | Documented In-house Methods: TI OP-CHEM-5-001-LTD (O ₂ /N ₂) TI OP-CHEM-9-002-LTD (H ₂) TI OP-CHEM-5-001-LTD (H ₂) TI OP-CHEM-4-001-LTD (C/S) 844 | B |
| Titanium alloys | C, N, H, O | Documented In-house Methods: TI OP-CHEM-5-001-LTD (O ₂ /N ₂) TI OP-CHEM-9-002-LTD (H ₂) TI OP-CHEM-5-001-LTD (H ₂) TI OP-CHEM-4-001-LTD (C/S) 844 | B |
| Iron/Nickel Alloys | Pb, Bi, Ag, Se, Sb, Te, TI, Cd, Zn | Documented in-house Method using Atomic Absorption Spectroscopy TI OP-CHEM-7-002-LTD | B |



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| METALS, ALLOYS and METAL PRODUCTS (cont'd) | <u>Corrosion Tests</u> | | |
| Austenitic stainless steels | Intergranular corrosion | BS EN ISO 3651-2:1998 ASTM A262-15 Practice A, E | A |
| Stainless steels | Pitting & Crevice resistance | ASTM G48-11(2020)e1 Practice A | A |
| | <u>Mechanical Tests</u> | | |
| Ferrous and non-ferrous alloys | Nick fracture | BS 4S100:1975 (Withdrawn) | A |
| | Stress rupture Creep Creep and rupture (temperature from ambient to 1000°C) | BS EN 2002-5 :2007 BS EN ISO 204 :2018 BS 4A4:Part 1:Section 3:1967 (Withdrawn) ASTM E139-11(2018) ASTM E292-18 | A |
| Ferrous and non-ferrous alloys (cont'd) | Tensile (temperature from ambient to 1000°C) (forces up to 300 kN) | BS 4A4:Part 1:Section 1:1966BS EN 2002-1:2005 BS EN 2002-2:2005 BS EN ISO 6892-1:2019 Method B BS EN ISO 6892-2:2018 Method B ASTM E8/E8M-16a ASTM E21-20 | A |
| | <u>Hardness:</u> | | |
| | Brinell (HBW 10/3000) | BS EN ISO 6506-1:2014 ASTM E10-18 | A |
| | Vickers (HV5, HV10, HV30) | BS EN ISO 6507-1:2018 | A |
| | Rockwell (Scales B & C) | BS EN ISO 6508-1:2016 ASTM E18:20 | A |
| | <u>Impact:</u> | | |
| | Charpy (V- Notches) (-196°C to 200°C) | ASTM E23-18 ASTM A370-20 | A |



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| METALS, ALLOYS and METAL PRODUCTS (cont'd) | <u>Metallurgical Tests</u> | | |
| Ferrous and non-ferrous alloys | De-carburised depth Thin Surface hardened layer thickness | BS EN ISO 3887:2018 BS 6286:1982 Documented In-House Method MET-072-LTD | A |
| | Grain size | ASTM E112-13 ASTM E930-18 ASTM E1181:02(2015) DMC0250 Index C | A |
| | Inclusion content | ASTM E45-18a DIN 50602-85 MSRR 9964 Issue 7 (withdrawn) RRMS 30015 Rev C | A |
| | Volume fraction | ASTM E562-19e1 AMS 2315G | A |
| | Macro etch rating | ASTM A604/A604M-07(2017) | B |
| Nickel and Nickel alloys | Identification of delta and laves phases in Alloy UNS N07718 | API Spec 6A718 2 nd Ed (Withdrawn) API Spec 6ACRA (01 Aug 15) Documented In-house Method MET 77-LTD | A |
| END | | | |