


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>0366</b> Accredited to ISO/IEC 17025:2017	<b>BES Group Testing Rotech Ltd</b> Issue No: 049 Issue date: 11 December 2024	
	Moxley Industrial Centre Western Way Wednesbury WS10 7BG United Kingdom	Contact: Mr Stuart Smith Tel: +44 (0)121-505 4050 E-Mail: <a href="mailto:stuart.smith@besgroup.com">stuart.smith@besgroup.com</a> Website: <a href="http://besgroup.com">besgroup.com</a>
Testing performed by the Organisation at the locations specified		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<b>Address</b> BES Group Testing Rotech Ltd Western Way Wednesbury WS10 7BG	<b>Local contact</b> Mr Stuart Smith	<u>Testing</u> Chemical tests Corrosion tests Mechanical tests Metallurgical tests Weldment tests
<b>Address</b> BES Group Testing Rotech Ltd Linley Lodge Laboratory Westgate Aldridge Walsall WS9 8DG	<b>Local contact</b> Mr Stuart Smith	<u>Testing</u> Corrosion tests Mechanical tests Metallurgical tests Weldment tests



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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
<b>METALS, ALLOYS and METAL PRODUCTS</b>	<u>Chemical Tests</u>		
Aluminium alloys	Elemental analysis Si, Fe, Mn, Cu, Mg, Zn, Cr, Pb, Sn, Ti	Documented In-House Method RP101 using Optical Emission Spectroscopy	A
Aluminium alloys (Wrought)	Elemental analysis Si, Fe, Cu, Mn, Mg, Cr, Ni, Zn, Ti, Pb, Sn, Zr, V, Ga, Bi	Documented In-House Methods RP116 & RP117 using ICP-OES	A
Ferrous Based Alloys	Elemental analysis Mn, Si, P, Cu, Ni, Cr, Mo, V, Ti, Al, Nb, B	Documented In-House Methods RP116 & RP-117 using ICP-OES	A
Ferrous Based Alloys	Elemental analysis C, Mn, Si, S, P, Cu, Ni, Cr, Mo, Sn, Nb, V, Al, Ti, B, Zr, Pb, W, Co, Mg, N	Documented In-House Method RP101 using Optical Emission Spectroscopy	A
Cupro Nickel Alloys	Elemental analysis Al Bi B Co Cr P Pb Si Sn Zn Sb Fe Mn, Ni, Cu (balance)	Documented In-House Methods RP116 using ICP-OES	A
High alloyed steels, low alloyed steels, copper alloys cupro nickel alloys & plain carbon steels.	Determination of Carbon and Sulphur	Documented In-House Method RP138	A
Cast iron, copper alloys, ferro alloys, high alloyed steels, low alloyed steels, nickel and cobalt alloys, plain carbon steels and refractories	Qualitative and Semi-Quantitative analysis of elements above atomic No.5	Documented In-House Method RP362 using Energy Dispersive Spectroscopy	A
High alloyed steels, low alloyed steels, copper alloys & plain carbon steels.	Determination of Nitrogen	Documented In-House Method RP136	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Corrosion Tests</u>		
Austenitic stainless steels	Susceptibility to intergranular corrosion	ASTM A262-15(R21) (Practice A, C & E)	A
Stainless Steels & related alloys	Pitting and Crevice Corrosion	ASTM G48-20e1 Method A	A
Wrought nickel rich chromium bearing alloys	Susceptibility to intergranular corrosion	ASTM G28-22 Method A	A
	<u>Mechanical Tests</u>		
	Bend	BS EN ISO 7438:2020	A,
	<b>Hardness:</b>		
	Brinell (5/750, 10/3000)	BS EN ISO 6506-1:2014 ASTM E10:23	A
	Rockwell Scales B & C	BS EN ISO 6508-1:2016 ASTM E18-22	A
	Vickers HV5, HV10, HV30	BS EN ISO 6507-1:2023 ASTM E92-23	A
	Vickers HV10	BS EN ISO 6507-1:2023 ASTM E92-23	B
	Low Force Vickers HV0.3, 0.5 and 1	BS EN ISO 6507-1:2023	A
	Micro Hardness HV 0.10	ASTM E384-22	A
	Hk 0.3, 0.5	BS EN ISO 4545-1:2023	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Mechanical Tests</u> (cont'd)		
	<b>Impact:</b>		
	Izod	BS 131:Part 1:1961(2015)	A
	Charpy (V-notch) (-196°C and -101°C to ambient) Including %Shear and Lateral Expansion	BS EN ISO 148-1:2016 ASTM A370-23 ASTM E23-23a ASTM A923:2023 Method B	A
Pipes and tubes	Tensile (Ambient temperature, forces from 2 kN to 600 kN)	BS EN ISO 6892-1:2019 Methods A & B BS EN 2002-1:2005 ASTM E8/8M-22 ASTM A370-23 ASTM B557/B557M-15(2023)	A
	Tensile (temperature from ambient to 600°C, forces from 2 kN to 100 kN)	BS EN ISO 6892-2:2018 Method A ASTM E21-20	A
Fasteners (Including Bolts, Screws and Nuts)	Crush & Flattening	BS EN ISO 8492:2013 BS 6323:Part 1:1982 (Withdrawn) ASTM A370-23	A
Fasteners (Including Bolts, Screws and Nuts)	Proof Load and Tension	BS EN ISO 898-1:2013 BS EN ISO 898-2:2022 BS EN ISO 3506-1:2020 BS EN ISO 3506-2:2020 ASTM F606/F606M-21 ASTM F738-02(2008) (Withdrawn) ASTM A370-23	A
	Partial decarburization depth	BS EN ISO 898-1:2013 ASTM F2328-17(2022)	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Metallurgical Tests</u>		
	Case depth (Surface Hardened Layers)	BS 6286:1982(2005) ISO 4970:1979 BS EN ISO 2639:2002 BS EN 10328:2005	A
	Depth of Decarburisation	BS EN ISO 3887:2023	A
	Dezincification	BS EN ISO 6509-1:2014 AS 2345:2006 (R2016) (Appendix C)	A
	Average Grain size (Comparison)	BS EN ISO 643:2020 ASTM E112- 13(R2021) (Method A)	A
	Characterising Duplex Grain Size	ASTM E1181-02(2023)	A
	Estimating Largest Grain Size (ALA)	ASTM E930-18	A
	Fractographic and microscopical examination	Documented In-House Method RP 361	A
	Inclusion content	ISO 4967:2013 ASTM E45-18a (Method A only)	A
	Macrostructure	ASTM E381-22 ASTM A604/A604M-07(2022)	A
	Average Grain size (ComparisonMethod)	ASTM E112-13 (R2021) (Method A)	B
	Austenite spacing	DNVGL-RP- F112:2019	B
	Volume fraction	ASTM E562-19e1	A, B
	Detrimental intermetallic phases	ASTM A923:2023 Method A	A, B
Fe alloys, Stainless Steels, Al alloys, Ti alloys, Ni alloys and Superalloys	Microstructures	Documented In-House Method RP 368	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Metallurgical Tests</u> (cont'd)		
Fe alloys, Stainless Steels and Al alloys	Microstructures	Documented In-House Method RP 368	B
Weldments and Brazing	Tests designated in specified Welding Codes as detailed below:-  Bend, Fracture, Hardness, Impact, Tensile, Macro / Micro examination	BS EN ISO 4136:2022 BS EN ISO 5173:2023 BS EN ISO 5178:2019 BS EN ISO 5817:2023 BS EN ISO 9015-1:2011 BS EN ISO 9015-2:2016 BS EN ISO 9016:2022 BS EN ISO 9017:2018 BS EN ISO 9018:2015  BS EN ISO 17639:2022 BS EN ISO 15613:2004 BS EN ISO 15614-8:2016 BS 1140:1993 BS 4871:Part 3:1985 BS 4872:Part 1:1982 BS 4872:Part 2:1976 BS EN ISO 9606-1:2017 BS EN ISO 9606-2:2004 BS EN ISO 15614-1:2017+A1:2019 BS EN ISO 15614-2:2005 BS EN ISO 15620:2019 BPVC ASME IX:2023 CAP 533 BCAR Section A8-10	A
METALLIC COATINGS	<u>Corrosion Tests</u>		
	Neutral salt spray	ASTM B117-19 BS EN ISO 9227:2022	A
	<u>Metallurgical Tests</u>		
	Plating	BS EN ISO 1463:2021	A
	Coating mass	BS EN 10346:2015 (Annex A)	A



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METALLIC COATINGS (cont'd)	<u>Chemical Test</u>		
Chromate treated surfaces	Presence of hexavalent chromium	Documented In-house Method RP110	A
PAINT and VARNISHES	<u>Environmental Tests</u>		
	Resistance to dry heat	Documented In-House Methods RP127	A
	<u>Mechanical Tests</u>		
	Adhesion	BS EN ISO 2409:2020	A
END			