Schedule of Accreditation

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Accredited to ISO/IEC 17025:2017

Minton, Treharne and Davies Limited

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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
Address Longwood Drive Forest Farm Cardiff Wales CF14 7HY	**Local contact** Mr Jon Coldman	Mechanical Testing Environmental Chemistry Non-Destructive Testing Petroleum Products Testing Solid Fuels Testing Microbiological Testing; Waters Chemical Testing Foods, Feeds	A
MTD Leeds 50 Back Lane Horsforth Leeds West Yorkshire LS18 4RF	Carol Francis Email:Carol.francis@minton.co.uk Tel: 0113 4670 066	Microbiological Testing; Waste Waters	C

Site activities performed away from the locations listed above:

Location details	Activity	Location code
All site locations suitable for the activities listed at customers premises	Inspection _ Permanent Joining Non-Destructive Testing of Metals	B

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>Mechanical Tests</u>	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
	Tensile (ambient temperature) (Forces up to 500 kN)	BS EN ISO 6892-1 Method B ASTM A370	A
	Vickers hardness (HV10)	BS EN ISO 6507-1	A
	Charpy V-notch impact Temperatures at -196°C and -80°C to Ambient	BS EN ISO 148-1	A
WELDMENTS	<u>Mechanical and Metallurgical Tests</u>		
	Bend, Fracture, Hardness, Tensile, Charpy and Macro-examination tests in accordance with the specified welding codes	BS 4872-1 BS 4872-2 BS EN 287-1 BS EN ISO 9606-1 BS EN ISO 9606-2 BS EN ISO 15614-1 BS EN ISO 15614-2 BS EN ISO 9017 BS EN ISO 5178 BS EN ISO 4136 BS EN ISO 5173 BS EN ISO 9015-1 BS EN ISO 17639 ASME IX	A
STAINLESS STEEL	<u>Corrosion Tests</u>		
	Pitting corrosion	ASTM G48 Method A	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
LIGHT and DENSE METALS and ALLOYS including Castings, Weldments, Forgings, Components and Structures, Composite Materials	Non-Destructive Tests	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
	Ultrasonic Testing		
LIGHT and DENSE METALS and ALLOYS including Castings, Weldments, Forgings, Components and Structures, Composite Materials	Flaw Detection and Thickness Measurement	BS EN ISO 17635 BS EN ISO 17640 ISO 16809: 2019 ISO 16810: 2014 ASME V Article 4 ASME V Article 5	A, B
	Phased Array Ultrasonic Testing	BS EN ISO 13588 Equipment Ultrasonic 'A-Scan', B-Scan, C-Scan & S-Scan' Flaw Detection Equipment and Thickness Meters	A, B
	Liquid Penetrant Inspection		
	Colour Contrasts and Fluorescent Penetrants	BS EN ISO 3452-1 ASME V Article 6 RRP 58003 Equipment Fixed Penetrant Line Equipment and Portable Equipment	A, B
	Radiography		
	X-Ray (≤450 kV)	BS EN ISO 17636-1 ASME V Article 2 RRP 58006	A, B
	γ- Ray; Iridium 192 (<27 Ci's)	 Equipment Fixed and Portable X-Ray and Gamma Equipment	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
LIGHT and DENSE METALS and ALLOYS including Castings, Weldments, Forgings, Components and Structures, Composite Materials (cont'd)	**Magnetic Particle Inspection** Ferromagnetic materials, Permanent and electrically induced magnetism	BS EN ISO 17638 BS EN ISO 9934, Part 1 ASME V Article 7 <u>Equipment</u> Permanent magnets Electromagnets 110 v/240 v Prods & Flexible Coil Horizontal Bench Unit (3000 amps)	A, B
WELDMENTS ONLY	**Eddy Current Testing** (By complex plane analysis using Portable Flaw Detectors) **Visual Examination of Welds**	BS EN ISO 15549 ISO 17643: 2015 ASME V Article 8 BS EN 13018 BS EN ISO 17637 ASME V Article 9	A, B A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOLID FUELS, COAL and COKE	Chemical Tests	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
	Ultimate Analysis:		
	Sulphur	BS 1016: Part 106.4.2 ISO 351	A
	Proximate Analysis	ISO 1171 BS ISO 562 ISO 11722 BS ISO 687	A
	Total moisture of Coal	ISO 11722 ISO 589	A
	Total moisture of Coke	BS ISO 579	A
	Gross Calorific Value	ISO 1928	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM PRODUCTS	Chemical and Physical Tests	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
	Cloud point of petroleum oils	IP 219 ISO 3015 EN 23015 ASTM D2500	A
	Density and relative density of liquids	Using digital density meter IP 365 ISO 12185 EN ISO 12185 BS 2000-365	A
	Colour	Using Seta Lovibond Colour comparator ASTM D1500	A
	Stability Test	Seta sediment tester by hot filtration IP390A & B ISO 10307-2	A
	Density and API Gravity	Using Anton Paar/Kyoto Densitometer ASTM D4052	A
	Flash point	by Pensky-Martens closed tester IP 34 *IP-ASTM Joint Method* ASTM D 93 Methods A&B BS 2000: Part 34: Methods A&B EN ISO 2719 Methods A&B ISO 2719 Methods A&B	A
	Water content of liquids	Coulometric Karl-Fischer Titration: IP438 BS EN ISO 12937 BS 2000-438	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
	Ash content	IP 4 *IP-ASTM Joint Method* ASTM D 482 BS 2000: Part 4 EN ISO 6245 ISO 6245	A
	Sulphur Content	Using UV Fluorescence EN ISO 20846 ASTM D5453 IP 490	A
	Acid Number (TAN)	ASTM D664 IP 177	A
Residual Oil	Determination of - Aluminium, Calcium, Iron, Sodium, Nickel, Phosphorus, Silicon, Vanadium and Zinc	IP 501 by ICP-OES	A
Fuels oils and lubricating oils	Kinematic viscosity	IP 71 Section 1 *IP-ASTM Equivalent Test Method* ASTM D 445 BS 2000: Part 71: Section 1 EN ISO 3104 ISO 3104	A
	Pour point of petroleum oils	IP 15 IP-ASTM Joint Method ASTM D 97 BS 2000: Part 15 ISO 3016	A
	Water content	Dean and Stark distillation: IP 74 IP-ASTM Joint Method ASTM D 95 BS 2000: Part 74 ISO 3733	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PETROLEUM PRODUCTS (cont'd)	Chemical and Physical Tests (cont'd)	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19	
Fuel Oils	Sulphur Content	Using Energy dispersive x-ray Fluorescence spectrometry: IP336 ISO 8754 EN ISO 8754 BS 2000-336 ASTM D4294	A
	Carbon Residue	IP398 IP-ASTM Joint Method ASTM D4530 ISO 10370 EN ISO 10370 BS2000-398	A
	Total Sediments	IP375, IP-ASTM Joint Method ASTM D 4870 BS 2000: Part 375 ISO 10307-1	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
TRADE EFFLUENT	Chemical Tests	Documented In-House Methods based on Standing Committee of Analysts (SCA), 'Methods for the Examination of Water and Waste Water'	
	Alkalinity	Documented In-House Method AES 1025 using Titration	A
	Total Cyanide	Documented In-House Method AES 1018 using Distillation / Spectrometry	A
	Chloride	Documented In-House Method AES 1042 using Titration	A
	Electrical conductivity	Documented In-House Method AES 1044 using Meter & Probe	A
	pH value (pH range 4-10 only)	Documented In-House Method AES 1035 using Meter & Probe	A
	Suspended solids	Documented In-House Method AES 1041 using Gravimetry	A
	Silicate	Documented In-House Method AES 1040 using Colourimetry	A
Including Sewage	Chemical Oxygen Demand	Documented In-House Method AES 1029 using Oxidation / Colourimetry	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
TRADE EFFLUENT (cont'd)	Chemical Tests (cont'd) Determination of: Aluminium Antimony Arsenic Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Phosphorous Potassium Selenium Silver Sodium Sulphur Strontium Tin Vanadium Zinc	Documented In House Method AES 1017 using ICP-OES	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
HEALTHCARE WATER (Dialysis Water)	Determination of: Antimony Arsenic Barium Beryllium Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Thallium Tin Zinc	Documented In House Method AES 1048 using ICP-MS	A
HEALTHCARE WATER (Dialysis Water)	Determination of: Aluminium Chromium Copper Iron Manganese Silver Zinc	Documented In House Method AES 1060 using ICP-OES Based on BS EN 11885:2009	A
POTABLE WATERS (Non-regulatory)	Determination of: Aluminium Chromium Copper Iron Manganese Zinc	Documented In House Method AES 1060 using ICP-OES Based on BS EN 11885:2009	A
POTABLE WATERS (Non-regulatory)	Determination of: Cadmium Chromium Lead Selenium	Documented In House Method AES 1048 using ICP-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATER: Drinking Water (non-regulatory), Surface Waters, Healthcare Water (Dialysis Water/Ultra Pure Water)	<u>Chemical Tests</u>	Documented In-House Methods identified by HJE/XXXX	
	pH	FWW 11040 by pH meter	A
	Conductivity	FWW 11041 by conductivity meter	A
	Ammonia	FWW 11042 by visible spectrometry	A
	Anions: Chloride Fluoride Nitrate Nitrite Phosphate Sulphate	FWW 11043 by Ion chromatography with EC detection	A
	Cations: Calcium Magnesium Sodium Potassium	FWW 11044 by Ion chromatography with EC detection	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS	<u>Chemical Tests</u>		
	Determination of: Antimony Arsenic Cadmium Chromium Cobalt Copper Lead Iron Mercury Nickel Tin Vanadium Zinc	Documented In-House Method AES 1005 using OES	A
	Total Cyanide	Documented In-House Method AES 1018 based on “Official, Standardised and Recommended Methods of Analysis” (Soc Anal Chem 1973) (P.455)	A
	Moisture content	Documented In-House Method AES 1023 using Gravimetry	A
	pH value (pH range 4-10 only)	Documented In-House Method AES 1035 using Meter & Probe	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD and FOOD PRODUCTS (general unless specified)	Chemical Tests *Indicates analysis performed under Food Standards Agency designation as Official Laboratory in accordance with assimilated European law AEUL OCR 2017/625	Documented In-House Methods identified by HJE/XXXX	
	*Generic protocol for the development of methods of analysis	Methods developed under the flexible scope (generic protocol) using the techniques of gas chromatography, high performance liquid chromatography, UV-VIS spectroscopy, enzyme linked immunoassay (ELISA) microscopy, titrimetry and gravimetry, HJE/IH/030	A
	*Ash	HJE/F013 by furnace	A
	*Fat	HJE/F015 using Acid Hydrolysis	A
	*Moisture	HJE/F014 by oven drying	A
	*Nitrogen and Crude Protein	HJE/F004 by Kjeldahl	A
	*Calculation of carbohydrate content	HJE/C001 by difference	A
	*Sulphur Dioxide	HJE/F031 by Iodine titrimetry	A
	*Sugars: fructose, dextrose, sucrose, maltose and lactose	HJE/F024 by HPLC with RI detector	A
Wines, Beer and Low Alcohol Drinks (including alcohol free products)	*Alcoholic Content	HJE/F032 by Gas Chromatography	A
Spirits	*Alcoholic strength	HJE/F026 by pyknometer	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD and FOOD PRODUCTS (general unless specified) (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Agency designation as Official Laboratory in accordance with assimilated European law AEUL OCR 2017/625	Documented In-House Methods	
Herbs, Spices and Other Vegetable Materials	*Microscopical examination and identification	HJE/F017 using optical microscopy	A
Meat and Meat Products	*Hydroxyproline	HJE/F016 based on BS 4401 Part 11:1995	A
	*Soya Protein Content	HJE/F008 by ELISA using Neogen Veratox Soya Test Kit	A
	*Total Volatile Nitrogen	HJE/F021 by distillation followed by titration	A
	*Calculation of collagen, dry connective tissue and meat content	HJE/C002	A
Oils and Fats	*Free Fatty Acids	FWF 11079 by titration	A
Oils and Fats	*Peroxide Value	FWF 11080 by titration	A
Soft Drinks	*Aspartame, Acesulfame K, Saccharin, Benzoic Acid, Sorbic Acid and Caffeine	HJE/F009 using HPLC or UPLC	A
	*Artificial colouring matter: Sunset yellow FCF	HJE/F005 (quantification) by HPLC with visible spectrometer detector	A
	*Sucralose	HJE/F033 HPLC with RI detector	A
Rice and Rice Products	*Inorganic Arsenic	AES1063 using HPLC-ICP-MS	A
Food, Food Products and Animal Feeds	*Arsenic	AES1064 using ICP-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD and FOOD PRODUCTS (general unless specified) (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Agency designation as Official Laboratory in accordance with assimilated European law AEUL OCR 2017/625	Documented In-House Methods	
Food, Food Products, Food Supplements and Animal Feedingstuffs	*Sodium	AES 1065 by ICP-OES	A
	Molecular Tests		A
Soya Beans and Soya Products	*Quantitative determination of genetically modified Soya (Genetic event GTS 40-3-2)	Extraction of DNA using MTD PCP DNA 9002 followed by amplification and determination using MTD PCP DNA 9004 by Quant Studio RT-PCR based on JRC CRVL08/05	A
	Chemical Tests	Documented In-House Methods identified by HJE/XXXX	
ANIMAL FEEDING STUFFS	*Generic protocol for the development of methods of analysis	Methods developed under the flexible scope (generic protocol) using the techniques of gas chromatography, high performance liquid chromatography, UV-Vis spectroscopy, enzyme linked immunoassay (ELISA), microscopy titrimetry and gravimetry, HJE/IH/030	A
Cereals, Cereal Products and Animal Feeds	Flexible Scope	Flexible scope enabling new versions of existing accredited standard test methods and technically equivalent standard methods to be introduced in accordance with documented in-house procedure QP19. Applicable to those methods identified using a # prefix to the method number.	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ANIMAL FEEDING STUFFS (cont'd)	Chemical Tests (cont'd) *Indicates analysis performed under Food Standards Agency designation as Official Laboratory in accordance with assimilated European law AEUL OCR 2017/625	Documented In-House Methods identified by HJE/XXXX	
	*Ash	HJE/A006 by Furnace	A
	*Ash	#HJE/A006 based on BS ISO 5984 by Furnace	A
	*Crude Fibre	#HJE/A014 based on BS EN ISO 6865 by Fibretec semi-automated system	A
	*Moisture	HJE/A007	A
	Moisture	#HJE/A007 based on BS EN ISO 712-1 and ISO 6496 by oven drying#	A
	*Nitrogen and Protein	HJE/F004 by Kjeldahl	A
	*Nitrogen and Protein	#HJE/F004 based on BS EN ISO 5983-2 and BS EN ISO 20483 by Kjeldahl	A
	*Oil (Method A)	#HJE/A004 based on ISO 6492 by Soxhlet (Method A)	A
	*Oil (Method A and B)	HJE/A004 by Soxhlet (Method A) then Acid Hydrolysis followed by Soxhlet (Method B)	A
CEREAL AND CEREAL PRODUCTS			
Cereals	*Moisture	#HJE/A007 based on BS EN ISO 712-1 by oven Drying	A
Including Pulses	*Nitrogen and Crude Protein	#HJE/F004 based on BS EN ISO 20483 by Kjeldahl	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS	Microbiological Testing		
Drinking Water (Non-regulatory) and surface waters	Detection and Enumeration of Coliforms and *Escherichia coli*	MTD PCP FWM 11004 by Idexx Colilert 24 quanti-tray (24 hour incubation), based on the Microbiology of Drinking Water, 2016, Part 4D	A
Drinking Water (non-regulatory) and Healthcare Water (Dialysis Water)	Enumeration of Aerobic Colony Count	MTD PCP FWM 11011 Pour Plate Method using Yeast Extract Agar incubated at 22°C for 72 hours and 37°C for 48 hours for Drinking Waters and 22°C for 168 hours for Dialysis Water. Based on the Microbiology of Drinking Water Part 7 (2020)	A
WATERS (waste)	Microbiological Testing (cont'd)	Documented In-House Methods	
	Enumeration		
	E. coli	MTD-PCP-FWM-11013, by membrane filtration using Chromogenic Agar, based on Microbiology of Recreational and Environmental Waters (2016) Part 3	C
	Enterococci	MTD-PCP-FWM-11014, by membrane filtration, based on Microbiology of Recreational and Environmental Waters (2015) Part 4	C
END			