Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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UKAS TESTING **0002** **Accredited to ISO/IEC 17025:2017**	**NPL Management Ltd** **Issue No:** 086 **Issue date:** 15 April 2021	
	Hampton Road **Teddington** **Middlesex** **TW11 0LW**	**Contact: Customer Helpline** **Tel: +44 (0)20 8943 7070** **Fax: +44 (0)20 8614 0482** **E-Mail: measurement_services@npl.co.uk** **Website: www.npl.co.uk**
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 National Physical Laboratory Hampton Road Teddington Middlesex TW11 0LW	**Local contact** Mr Tahir Maqba Customer Services Manager Tel: +44 (0)20 8943 6796 Fax: +44 (0)20 8614 0482 E-Mail: tahir.maqba@npl.co.uk Website: www.npl.co.uk	**Support Functions:** Quality System Quality Audit Administration **Testing:** Mechanical, metallurgical, physical and chemical testing **Sampling and Testing:** Stack Emissions Testing	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Customers' premises/sites	Sampling and analysis	B
Customer Sites requiring Stack Emissions Testing	Stack Emissions Testing	C

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ENGINEERING COMPONENTS & TOOLS *Service Reference:* LD10	<u>Dimensional Tests</u> Length measurement up to 550 x 500 x 450 mm, with following best measurement capability (uncertainty): 1.5+L/260 µm, where L is in mm 0.80 µm (using substitution method) 0.40 µm (using reversal method) <u>Physical Tests</u>	Documented in-house Method QPLM/B/216	A
THERMAL INSULATION PRODUCTS *Service Reference:* MTA1	Thermal conductivity/thermal resistance over the temperature range 140 °C to 800 °C Conductivity range up to 0.5 W/m.K Uncertainty ± 5 %	EN 12667:2001 and ISO 8302:1991 using 305 mm diameter NPL Guarded Hot-Plate and following documented in-house method QPDQM/B/401	A
METALS and ALLOYS *Service Reference:* MTA1	Thermal conductivity/thermal resistance over the temperature range 50 °C to 500 °C Conductivity 10 W/m.K to 240 W/m.K Uncertainty ± 3.4 %	Documented in-house method QPDQM/B/411 using Axial Flow Meter	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GAS MEASURING EQUIPMENT			
Continuous Emission Monitoring Systems (CEMS) and Process Gas Analysers *Service Reference:* QE21	**Test Gases** All of the following compliance tests may be conducted with any one or more of the following gases, at concentrations up to the maximum shown with [uncertainty] relative to the nominal concentration. The minimum concentration of each test gas, apart from zero gas, is 1 μmol/mol. **SO_2** 10 gm^{-3} [± 0.5 %] **CO** 15 gm^{-3} [± 0.4 %] **CO_2** 20 % mol/mol [± 1 %] **NO** 7 gm^{-3} [± 0.5 %] **NO_2** 10 gm^{-3} [± 0.5 %] **N_2O** 4 gm^{-3} [± 0.5 %] **HCl** 2 gm^{-3} [± 3 %] **NH_3** 100 mg m^{-3} [± 3 %] **H_2S** 3 gm^{-3} [± 3 %] **CH_2Cl_2** 500 μmol/mol [± 1 %] **Volatile Organic Compounds** (methane, propane, acetic acid, acetone, acrolein, formic acid, formaldehyde, methanol, ethane, ethene, propene, butane, acetaldehyde) 10 mmol/mol [± 0.5 %] **Halocarbons** (112, 113, 113A, 114, 123) 10 μmol/mol [± 2 %]	Environment Agency (MCERTS) Performance standards and test procedures for continuous emission monitoring systems. For gaseous, particulate and flow-rate monitoring systems. EN 15267-3:2007 Documented in-house method QPDQM/B/518 incorporating the requirements of the above documents	A A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GAS MEASURING EQUIPMENT (cont'd) Continuous Emission Monitoring Systems (CEMS) and Process Gas Analysers *Service Reference:* QE21 (cont'd)	**Test Gases** (cont'd) **Oxygen** 25 % mol/mol [± 0.5 %] **Water Vapour** 45 % mol/mol [± 3 %] **Zero Gas** Zero and diluent gases contain < 0.1 % of measuring range **Compliance Tests** **Linearity** ± 0.5 % of test range **Repeatability** ± 0.5 % of concentration **Response Time** Step change of concentration to 90% of final value within 10 s [± 10 s] **Test Gas Temperature Range** 20 °C to 200 °C [± 1 °C] **Test Gas Pressure Variation** up to + 3 kPa [± 0.3 kPa] **Ambient Temperature Range** - 25 °C to + 70 °C [± 1 °C] **Ambient Humidity Range** 5 %rh to 95 %rh [± 3 %rh]		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GAS MEASURING EQUIPMENT (cont'd)			A
Continuous Emission Monitoring Systems (CEMS) *Service Reference:* QE84	**Field Tests** Lack of fit (linearity) Response time Maintenance interval Long term stability (Zero shift and span change) Reproducibility Availability Contamination check of in-situ Systems Calibration function tests Tests for gaseous monitoring CEMS for CO, CO_2, SO_2, O_2, H_2O, N_2O, NO and NO_2	Environment Agency (MCERTS) Performance standards and test procedures for continuous emission monitoring systems. For gaseous, particulate and flow-rate monitoring systems. EN 15267-3:2007 Documented in-house methods QPAS/B/538, QPAS/B/542 and QPAS/B/555 incorporating the requirements of the above documents	C
Stack Emissions - Continuous Emissions Monitoring Systems (CEMS) *Service Reference:* QE84	QAL 2, and the Annual Surveillance Test (AST) for CEMS	Documented in house method QPAS/B/542 to meet the requirements of BS EN 14181:2014, Environment Agency MID 14181 (TGN M20 Annex A) and other requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	A, C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WORKPLACE AND AMBIENT ATMOSPHERIC POLUTANTS, AND OTHER GAS SAMPLES	Chemical Tests		
Volatile organic Compounds in air using Sorbent tubes *Service Reference:* QE83	Volatile Compounds: iso-butane, n-butane, 1,3 butadiene, iso-pentane, n-pentane, n-hexane, benzene, toluene, m/p-xylene, ethylbenzene, o-xylene.	Documented in house method QPAS/B/566 using sorbent tubes followed by thermal desorption and GCMS Based on BS-EN ISO 16017-1&2	A
	Onsite Sampling		
On site Sampling of Pumped and diffusive sorbent tubes *Service Reference:* QE83	Nitrogen dioxide Nitrogen monoxide Sulphur dioxide Volatile organic compounds	Documented in-house methods QPAS/B/566	B
	Chemical Tests		
Glass adsorption tubes containing gold-coated silica *Service Reference:* QE85-8020	Total mercury	Thermal desorption-atomic fluorescence spectroscopy. Documented in-house method QPAS/B/544 in accordance with BS EN 15852:2010	A
Weight of suspended particulate matter *Service Reference:* QE17-8020	25 ug to 7 mg equivalent to 1 $\mu g/m^3$ for a 1 m^3/hour sampler to 120 $\mu g/m^3$ for a 2.3 m^3/hour sampler	Documented in-house method based on BS EN 14907:2005	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WORKPLACE AND AMBIENT ATMOSPHERIC POLUTANTS, AND OTHER GAS SAMPLES (cont'd)	Chemical Tests (cont'd)		
Cellulose filters Acid digests (nitric acid and hydrogen peroxide) *Service Reference:* QE17-8010	Arsenic Cadmium Chromium Cobalt Copper Iron Lead Manganese Nickel Selenium Vanadium Zinc	Microwave digestion (for cellulose filters) and inductively coupled plasma - mass spectrometry (ICP-MS) Documented in-house method QPAS/B/533 in conformance with EN 14902:2004	A
Particulate matter on filters or in aqueous solution *Service Reference:* QE17-8030	Fluoride Chloride Nitrate Sulphate	Documented in-house method QPAS_B_552 using ion chromatography	A
Quartz filters Air particulate samples *Service Reference:* QE15-OC/EC	Total carbon (elemental carbon plus organic carbon) Total carbon up to 100 µg/cm^3	Thermal-optical method - volatilisation and oxidation of carbon-containing PM components, quantification of the carbonaceous gases released Documented in-house method QPAS/B/561, based on CEN/TR 16243	A
Impurities in hydrogen gas samples *Service Reference* QE13	Amount fraction of: Water Total hydrocarbons Oxygen Helium Nitrogen Argon Carbon dioxide Carbon monoxide Total sulphur compounds	Documented in-house methods QPDQM/B/500 and DN34	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES		National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard for laboratories carrying out testing of samples from stack emissions monitoring	
	<u>Physical Tests</u>		
Filter Papers and Rinse Solutions *Service Reference:* QE84	Weighing of Particulate Matter	BS EN 13284-1:2017 BS ISO 9096:2017 (QPAS/B/538)	A
	Weighing of Particulate Matter <10 micron (PM10 and PM2.5)	BS EN ISO 23210:2009 (QPAS/B/563)	
	<u>Chemical Testing</u>		
Impinger Solutions (water) *Service Reference:* QE17-8030	Chloride as Hydrogen Chloride	BS EN 1911-3:2010 Documented in-house method QPAS_B_552 using ion Chromatography.	A
Impinger Solutions (hydrogen peroxide) *Service Reference:* QE17-8030	Sulphate as Sulphur Dioxide	BS EN 14791:2017 Documented in-house method QPAS_B_552 using ion Chromatography.	A
Impinger Solutions (sodium hydroxide) *Service Reference:* QE17-8030	Fluoride as Hydrogen fluoride	BS ISO 15713:2006 Documented in-house method QPAS_B_552 using ion Chromatography.	A
Testing of Stack Emissions to Atmosphere *Service Reference:* QE84	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u>	National, International and other recognised standards using documented in-house methods to meet the requirements of BS EN 15259:2007	
	Ammonia	US EPA Method 26 (QPAS/B/540)	C
	Total Particulate Matter (20 mg/m3 to 1000 mg/m3)	BS ISO 9096:2017 (QPAS/B/536)	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Sampling and On-Line Analysis		
Testing of Stack Emissions to Atmosphere *Service Reference:* QE84 (cont'd)	Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory	National, European, International and Environment Agency specified standards including MIDs and documented in-house methods to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Total Particulate Matter	BS EN 13284-1:2017 (QPAS/B/538)	C
	Particulate Matter <10 micron (PM10 and PM2.5)	BS EN ISO 23210:2009 (QPAS/B/563)	
	Hydrogen chloride	BS EN 1911:2010 (QPAS/B/540)	C
	Hydrogen fluoride	BS ISO 15713:2006 (QPAS/B/540)	C
	Sulphur dioxide	BS EN 14791:2017 (QPAS/B/540)	C
	Ammonia	BS EN ISO 21877:2019 (QPAS/B/540)	C
	Metals	BS EN 14385:2004 (QPAS/B/537)	C
	Mercury	BS EN 13211:2001 (QPAS/B/537)	C
	Dioxins and Furans	BS EN 1948-1:2006 (QPAS/B/539)	C
	Dioxin-like Polychlorinated Biphenyls (PCBs)	BS EN 1948-4 2010 (QPAS/B/539)	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Testing of Stack Emissions to Atmosphere *Service Reference:*QE84 (cont'd)	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u> (cont'd)	National, European, International and Environment Agency specified standards including MIDs and documented in-house methods to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Polycyclic Aromatic Hydrocarbons (PAHs)	BS ISO 11338-1:2003 (QPAS/B/539)	C
	Direct sampling of dry stacks and dynamic dilution sampling of hot wet stacks. Speciated VOCs Mercaptans Amines and Amides Phenols Cresols Carboxylic Acids Aldehydes	Extractive sampling onto carbon or other sorbent tubes and analysis by solvent desorption or thermal desorption. PD CEN/TS 13649:2014 (QPAS/B/556)	C
	<u>Sampling and On-Line Analysis</u>		
	Pressure, Temperature and Velocity	BS EN ISO 16911-1 2013 MID BS EN ISO 16911-1 2013(QPAS/B/567)	C
	Water vapour (gravimetric analysis)	BS EN 14790:2017 (QPAS/B/536)	C
	Carbon dioxide*	ISO 12039:2001 (QPAS/B/538 - NDIR analyser)	C
	Carbon monoxide*	BS EN 15058:2017 (QPAS/B/538 - NDIR analyser)	C
	Oxides of nitrogen*	BS EN 14792:2017 (QPAS/B/538 - Chemiluminescence analyser)	C
	Sulphur dioxide*	PD CEN/TS 17021:2017 (QPAS/B/539 - NDIR analyser)	C

* The scale range of the analyser used for this test must be that detailed on its current MCERTS certificate or a range validated by the organisation to meet MCERTS requirements.

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Testing of Stack Emissions to Atmosphere *Service Reference:* QE84 (cont'd)	<u>Sampling and On-Line Analysis</u> (cont'd)	National, European, International and Environment Agency specified standards including MIDs and documented in-house work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Nitrous oxide (N_2O)*	BS EN ISO 21258:2010 (QPAS/B/564 - NDIR analyser)	C
	Oxygen*	BS EN 14789:2017 (QPAS/B/538 - Validated paramagnetic analyser) (QPAS/B/538 - Validated zirconium cell analyser) (QPAS/B/538 - Validated electrochemical cell analyser)	C
	Total Gaseous Organic Carbon* (TOC / VOC) (0 to 1000 mg/m^3)	BS EN 12619:2013 (QPAS/B/538 - FID analyser)	C
	<u>Sampling and On-Line Analysis</u> Sampling and on-line analysis of gas phase chemicals from stacks, ducts and flues, including: sulphur dioxide* hydrogen chloride* water vapour* ammonia* methane*	PD CEN/TS 17337:2019: (QPAS/B/541 – Validated FTIR analyser) Measuring stack gas emissions using FTIR Instruments and traceable reference standards.	A, C

* The scale range of the analyser used for this test must be that detailed on its current MCERTS certificate or a range validated by the organisation to meet MCERTS requirements.

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
NEUTRON DOSE EQUIVALENT			
Fast neutron personal dosemeter proficiency testing *Service Reference: RN04*	Energy: broad energy range from radionuclide sources Dose equivalent rates: ^{241}Am-Be: 1 μSv h^{-1} to 400 μSv h^{-1} at 1m from the source ^{252}Cf: 1.6 μSv h^{-1} to 3.2Sv h^{-1} at 1m from the source	In accordance with HSE Measurement Protocol for Performance Testing of Dosimetry Services for External, Whole Body Fast Neutron Radiation, June 2001.	A
STANDARDS OF RADIOACTIVITY			
Solutions of ^{3}H standards for ^{3}H measurement performance test *Service Reference: RR06*	Activity per unit mass of ^{3}H, Bq g^{-1} 10 Bq g^{-1} to 1 kBq g^{-1}	In accordance with HSE Measurement Protocol for Performance Testing of the Determination of Tritium in Water (1997) Procedures directly supporting this work are: **RMS012 -** Production of Samples for the Tritium PTE **RMS013 -** Data Analysis of the Tritium Performance Test	A

END

Accreditation for the purpose of UK Approved Body Activity in accordance with UKCA Requirements and UKAS Publication GEN 5

Directive / Regulation	Conformity Assessment procedure/ Module/article	Category of products or individual products	Essential requirements: Product specification / Properties/Standards
Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020	Testing Laboratory Attestation System 3	Thermal insulating products (1/2) : Thermal insulating products (factory-made products and products intended to be formed in-situ) (any)	EN 13162:2012+A1: 2015 EN 13163:2012+A1: 2015 EN 13164:2012+A1: 2015 EN 13165:2012+A2: 2016 EN 13166:2012+A2: 2016 EN 13167:2012+A1: 2015 EN 13168:2012+A1: 2015 EN 13169:2012+A1: 2015 EN 13170:2012+A1: 2015 EN 13171:2012+A1: 2015 EN 14303:2015 EN 14304:2015 EN 14305:2015 EN 14306:2015 EN 14307:2015 EN 14308:2015 EN 14309:2015 EN 14313:2015 EN 14314:2015 EN 15501:2015
Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020	Testing Laboratory Attestation System 3	Thermal insulating products (2/2) : Thermal insulating products (factory-made products and products intended to be formed in-situ) (for uses subject to regulations on reaction to fire)	EN 13162:2012+A1: 2015 EN 13163:2012+A1: 2015 EN 13164:2012+A1: 2015 EN 13165:2012+A2: 2016 EN 13166:2012+A2: 2016 EN 13167:2012+A1: 2015 EN 13168:2012+A1: 2015 EN 13169:2012+A1: 2015 EN 13170:2012+A1: 2015 EN 13171:2012+A1: 2015 EN 14303:2015 EN 14304:2015 EN 14305:2015 EN 14306:2015 EN 14307:2015 EN 14308:2015 EN 14309:2015 EN 14313:2015 EN 14314:2015 EN 15501:2015

Accreditation for the purpose of Notified Body Activity relating to the Northern Ireland market (CE + UKNI) taking into account EA-2/17

Directive / Regulation	Conformity Assessment procedure/ Module/article	Category of products or individual products	Essential requirements: Product specification / Properties/Standards
Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020	Testing Laboratory Attestation System 3	Thermal insulating products (1/2) : Thermal insulating products (factory-made products and products intended to be formed in-situ) (any)	EN 13162:2012+A1: 2015 EN 13163:2012+A1: 2015 EN 13164:2012+A1: 2015 EN 13165:2012+A2: 2016 EN 13166:2012+A2: 2016 EN 13167:2012+A1: 2015 EN 13168:2012+A1: 2015 EN 13169:2012+A1: 2015 EN 13170:2012+A1: 2015 EN 13171:2012+A1: 2015 EN 14303:2015 EN 14304:2015 EN 14305:2015 EN 14306:2015 EN 14307:2015 EN 14308:2015 EN 14309:2015 EN 14313:2015 EN 14314:2015 EN 15501:2015
Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020	Testing Laboratory Attestation System 3	Thermal insulating products (2/2) : Thermal insulating products (factory-made products and products intended to be formed in-situ) (for uses subject to regulations on reaction to fire)	EN 13162:2012+A1: 2015 EN 13163:2012+A1: 2015 EN 13164:2012+A1: 2015 EN 13165:2012+A2: 2016 EN 13166:2012+A2: 2016 EN 13167:2012+A1: 2015 EN 13168:2012+A1: 2015 EN 13169:2012+A1: 2015 EN 13170:2012+A1: 2015 EN 13171:2012+A1: 2015 EN 14303:2015 EN 14304:2015 EN 14305:2015 EN 14306:2015 EN 14307:2015 EN 14308:2015 EN 14309:2015 EN 14313:2015 EN 14314:2015 EN 15501:2015

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