

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 Accredited to ISO/IEC 17025:2005	Tata Steel UK Limited trading as Tata Steel Research, Development and Technology	
	Issue No: 038 Issue date: 28 September 2016	
	Swinden Technology Centre Moorgate Rotherham South Yorkshire S60 3AR	Contact: Mr Ian Westaby Tel: +44 (0)1536 404079 Fax: +44 (0)1709-825337 E-Mail: ian.Westaby@tatasteel.com Website: http://www.tatasteelresearch.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 Swinden Technology Centre Moorgate Rotherham South Yorkshire S60 3AR Local contact – Environmental Analysis Mr Paul Collins Tel: +44 (0)1709 825283 Email: paul.p.collins@tatasteel.com Local contact – Research & Development Mr Mike Baker Tel: +44 (0)1709 825120 Email: mike.baker@tatasteel.com	Support Functions: Quality System Quality Audit Administration Testing: Analysis of stack emissions samples Corrosion tests Mechanical tests Metallurgical tests Physical Testing Sampling and Testing: Stack Emissions Testing	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Customer Sites requiring Stack Emissions Testing	Stack Emissions Testing	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>Mechanical Tests</u>		
	Creep and stress rupture (up to 1100°C)	BS EN ISO 204:2009	A
	Tensile stress relaxation (up to 1100°C)	BS EN 10319-1:2003	A
	Fracture toughness: (-196°C to ambient temperature)		
	K _{IC}	ASTM E399:2012	A
	K _{IC} , CTOD, J	BS 7448-1:1991	A
	K _{1c} , CTOD, J	BS 7448-2:1997 (Withdrawn)	A
Welds in metallic materials			
Organic Coated Steel Strip and long products	<u>Corrosion Tests</u>		A
	Salt Spray Testing	ASTM B117- 11	A
	Cyclic Humidity Testing	BS 3900:Part F2:1973(1989)	A
	Kesternich SO ₂ test**	BS EN ISO 3231:1998	A
	Water resistance**	ASTM D870-09	A
	Prohesion**	ASTM G85-11	A
	(** Organic coatings only)		



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POLLUTANTS and EFFLUENTS:	<u>Chemical Tests</u>		
Environmental samples including dusts and steel making materials	Determination of trace elements (Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Potassium, Selenium, Thallium, Titanium, Vanadium, Zinc)	Documented in-house method ENVPES 103 using ICP/MS	A
	Analysis of anions (Fluoride, chloride, nitrate, sulphate, bromide, nitrate, phosphate)	Documented in-house method ENVPES 104	A
Dusts, ores, air filters	Determination of Lead-210 and Polonium -210	Documented in-house method ENVPES 822	A
Ambient air samples: Fine Particulates - collected on quartz, PTFE and polycarbonate filters	Determination of trace elements (Arsenic, Cadmium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Potassium, Selenium, Vanadium, Zinc)	Documented in-house method ENVPES 103 using ICP/MS	A
Waste water effluents from integrated steelworks	Determination of 16 US EPA targeted PAHs	Documented in-house method ENVPES 818	A
Waste water effluents	Determination of trace metals Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, V	Documented in-house method ENVPES 825	A
ATMOSPHERIC POLLUTANTS AND EFFLUENTS – STACK GAS SAMPLES	<u>Physical Testing</u>	Documented In-House Methods in accordance to the following national, international and other recognised standards.	A
Filter Papers and Rinse Solutions	Weighing of Particulate Matter	BS EN 13284-1:2002 BS ISO 9096:2003 (ENVPES 924)	A
Testing of Stack Emissions to Atmosphere	<u>Sampling</u> Particulates for analysis of lead-210 and Polonium 210	BS EN 13284-1:2002BS ISO 9606:2003 ENV PES 926	B



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Testing of Stack Emissions to Atmosphere	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u>	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 DD CEN/TS 15675:2007 / BS EN 15259:2007	
	Total Particulate Matter	BS EN 13284-1:2002 (ENVPES 926)	B
	Hydrogen Chloride	BS EN 1911-1:2010 (ENVPES 930)	B
	Hydrogen Fluoride	BS ISO 15713:2006 (ENVPES 944)	B
	Metals	BS EN 14385:2004 (ENVPES 929)	B
	Mercury	BS EN 13211:2001 (ENVPES 934)	B
	Dioxins and Furans	BS EN 1948-1:2006 (ENVPES 928)	B
	Polycyclic Aromatic Hydrocarbons (PAHs)	BS ISO 11338-1:2003 (ENVPES 945)	B
	Sulphur dioxide	BS EN 14791:2005 (ENVPES 937)	B
	<u>Sampling and On-Line Analysis</u>		
	Pressure, Temperature and Velocity (Point Velocity Method)	BS EN 16911-1:2013 (ENVPES 926 using differential pressure device (pitot tube) method)	B
	Water Vapour	BS EN 14790:2005 (ENVPES 941) EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B



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Testing of Stack Emissions to Atmosphere (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 DD CEN/TS 15675:2007 / BS EN 15259:2007	
	Ammonia	EA TGN M22 (ENV PES 949 – FTIR analyser)	B
	Carbon Dioxide*	ISO 12039:2001 (ENVPES 911 - NDIR analyser) EA TGN M22 (ENV PES 949 – FTIR analyser)	B
	Carbon Monoxide*	BS EN 15058:2006 (ENVPES 911 - NDIR analyser) EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B
	Nitrogen Monoxide (NO)*	BS EN 14792:2005 (ENVPES 911 – Chemiluminescence analyser) EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B
	Nitrogen Dioxide (NO ₂)*	EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B
	Nitrous Oxide (N ₂ O)*	EA TGN M22 (ENV PES 949 – FTIR analyser)	B
	Oxides of Nitrogen (NO _x)*	BS EN 14792:2005 (ENVPES 911 – Chemiluminescence analyser)	B
	Oxygen*	BS EN 14789:2005 (ENVPES 911 - Validated Zirconium cell analyser) (ENVPES 942 - Paramagnetic analyser)	B



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Testing of Stack Emissions to Atmosphere (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 DD CEN/TS 15675:2007 / BS EN 15259:2007	
	Sulphur dioxide*	EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B
	Hydrogen Chloride*	EA TGN M22 (ENV PES 949 – Validated FTIR analyser)	B
	Total Gaseous Organic Carbon* (TOC / VOC) (0 to 1000 mg/m ³)	BS EN 12619:2013 (ENVPES 935 - FID Analyser)	B
Stack Emissions - Continuous Emissions Monitoring Systems (CEMS)	QAL 2 and the Annual Surveillance Test (AST) for CEMS	Documented in house procedure ENV PES 952 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 DD CEN/TS 15675:2007/ BS EN 15259:2007	B
END			

* - 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.