



ExMC/710/R  
November 2011

**INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR  
CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE  
IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)**

**Title: Re-assessment Report for the continued acceptance of Sira Test &  
Certification Limited as an Accepted Test Laboratory (ExTL)**

**To: Members of the IECEx Management Committee, ExMC**

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**Introduction**

In accordance with the 5 year re-assessment plan for the surveillance and monitoring of bodies within the IECEx System the following document contains the IECEx Re-assessment Report for Sira Test & Certification Limited to continue as an Accepted Test Laboratory (ExTL).

We are pleased to advise that this assessment was conducted as a Joint IECEx / UKAS assessment in accordance with the IEC/ILAC/IAF Memorandum of Understanding.

This report is issued for endorsement during the 2012 ExMC Calgary Meeting.

*Chris Agius*

**IECEx Secretariat**

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# IECEX ASSESSMENT REPORT FOR Sira Test and Certification Limited(SIRA) IECEX TEST LABORATORY (ExTL)

**Type of Assessment: (please mark)**

**Initial assessment for Candidate ExTL**

**Re-Assessment of ExTL** X

**Scope Extension of ExTL**

## 1. OBJECT AND FIELD OF APPLICATION

### 1.1. *Country:*

United Kingdom

### 1.2. *Name of Candidate TL*

Sira Test & Certification Limited.

### 1.3. *Members of the Assessment Team*

Mr C. Bestwick – UKAS Lead Assessor

Mr J. Munro – IECEx Lead Assessor

Dr A. Zalogin – IECEx Assessor

### 1.4. *Place and Date of Assessment*

Rake Lane, Eccleston, Chester, CH4 9JN

Date: 21-23 June 2010

12 Acorn Industrial Park, Crayford Road, Crayford, Dartford, Kent DA1 4AL

Date: 28-29 June 2010

### 1.5 *Assessment References*

- i) IECEx 02 Third Edition 2006-11 IECEx Scheme rules of procedure
- ii) IECEx Operational Document OD 003 IECEx Assessment procedures
- iii) IECEx Operational Document OD 009 Issuing of CoCs, ExTRs and QARs
- iv) ISO/IEC 17025:2005
- v) IECEx Technical Guidance Documents (TGDs)
- vi) ExTAG Decision Sheets (DS)

### 1.6 *Scope of Application*

Number	Title
60079-0 Edition 5	Explosive atmospheres - Part 0: Equipment - General requirements

Number	Title
60079-1 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
60079-2 Edition 5	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p»
60079-5 Edition 3	Explosive atmospheres - Part 5: Equipment protection by powder filling «q»
60079-6 Edition 3	Explosive atmospheres - Part 6: Equipment protection by oil immersion «o»
60079-7 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
60079-11 Edition 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
60079-13 Edition 1	Equipment protection by pressurized room "p"
60079-15 Edition 4	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
60079-18 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus
60079-25 Edition 2	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems
60079-26 Edition 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
60079-27 Edition 2	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)
60079-28 Edition 1* <sup>1</sup>	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
60079-29-1 Edition 1	Explosive atmospheres - Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases
60079-30-1 Edition 1	Explosive atmospheres – Part 30-1: Electrical resistance trace heating – General and testing requirements
60079-31 Edition 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

Number	Title
61779-1 Edition 1	Electrical apparatus for the detection and measurement of flammable gases - Part 1: General requirements and test methods
61779-2 Edition 1	Performance requirements for group I apparatus indicating a volume fraction up to 5% methane in air
61779-3 Edition 1	Performance requirements for group I apparatus indicating a volume fraction up to 100% methane in air
61779-4 Edition 1	Performance requirements for group II apparatus indicating a volume fraction up to 100% lower explosive limit
61779-5 Edition 1	Performance requirements for group II apparatus indicating a volume fraction up to 100% gas
61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
61241-1 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 1: Protection by enclosures "tD" plus -1
61241-1-1 Edition 2	Part 1-1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by enclosures "pD"
61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD'
61241-18 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"
62013-1 Edition 2	Caplights for use in mines susceptible to firedamp Part 1: General requirements - Construction and testing in relation to the risk of explosion
62086-1 Edition 1	Electrical apparatus for explosive gas atmospheres - Electrical resistance trace heating - Part 1: General and testing requirements

Note

\*1 Assessment only with testing being subcontracted to TUV Nord.

### 1.7 Candidate TL Persons Interviewed

Name	Position
Mr B. Howard	Quality Manager
Mr D. Stubbings	Certification Manager Ex Products
Mr W. Thomas	Certification Manager Ex Quality assurance Management systems
Mr A. C. Smith	Certification Engineer
Mr S. Cork	Laboratory Technical Manager
Mr M. Wilson	Deputy Laboratory Manager (Chester)
Mr R. King	Laboratory Manager (Crayford)

### 1.8 Legal Entity of The Candidate TL

Sira Test & Certification Limited is based at the Chester location and registered at Companies House. It is a separate legal entity from Sira Certification Service. At the time of the assessment the Gas Detector Testing was carried out by Sira Environmental Limited at the Crayford location. Subsequently this operation became part of Sira Test and Certification Ltd.

The legal status of the companies, as checked on Companies House Website is:-

Sira Certification Service is a private company, limited by guarantee (company number 2266287). (In this report also referred to as SCS).

Sira Test and Certification Ltd. is a private company, registered at company house as 5569145. (In this report also referred to as ST&C).

Sira Environmental Ltd. is a private company, registered at company house as 5671254 (In this report also referred to as SEL).

### 1.9 Associated ExCB

Sira Certification Service, Rake Lane, Eccleston, Chester, CH4 9JN

### 1.10 Financial Support

Sira Test & Certification is a wholly owned subsidiary of CSA Certification UK Ltd, which is owned by CSA Group.

The income of Sira Test & Certification Ltd is derived solely from its testing and certification activities. It does not receive any additional financial support.

The last audited accounts for the year ending December 2008 were seen during the visit.

### 1.11 History

Sira Test & Certification Limited and Sira Environmental Limited started as a wholly owned subsidiary of the Sira Group.

From 2005 up until the end of June 2009 the 4 Sira companies, Sira Certification Services, Sira Test and Certification, Sira Environmental Ltd. and Sira Consulting Ltd. were owned by Volvere PLC who are a UK public limited company. In July 2009 the Sira group of companies was brought by CSA Certification UK Ltd which is registered in the UK as 06947589. In turn they are owned by CSA (CSA International of Canada).

## 2. ORGANISATION

Tables below to be initially completed by applicant or body being re-assessed

### 2.1. Names, Titles and Experience of the Senior Executives

Name	Title	Experience
M D Shearman	Managing Director	12 years
D R Stubbings	Certification Manager	16 years
W Thomas	Certification Manager Ex	11 years

Name	Title	Experience
	quality assurance Management systems	
S Cork	Laboratory Technical Manager	31 years
R King	Laboratory Manager (Crayford)	9 Years

## 2.2. Name, Title and Experience of the Quality Management Representative

Name	Title	Experience
B Howard	Quality Manager	21 years

## 2.3. Name and Title of Nominated Principal Contact

Name	Title	Comments
D Stubbings	Certification Manager	

## 2.4. Employees

### Chester Laboratory Staff

Name	Title	Experience
M Wilson	Senior Technician Deputy Laboratory Manager	16 years
+ 4 Technicians		

### ExTL Certification Staff who may perform Ex / ATEX Testing and Assessment

Name	Title	Experience
S. Finch	Consultant Engineer	21 Years
P. Walsh	Consultant Engineer	26 Years
S. Otty	Consultant Engineer	21 Years
K. Spence	Senior Certification Engineer	7 Years
L. Pall	Senior Certification Engineer	16 Years
M. Halliwell	Senior Certification Engineer	7 Years
D. Holton	Senior Certification Engineer	16 Years
B. Allen	Senior Certification Engineer	16 Years
A. Templer	Senior Certification Engineer	21 Years
N. Jones	Senior Certification Engineer	21 Years
A. Ashburner	Senior Certification Engineer	16 Years
D. Hanks	Senior Certification Engineer	16 Years
I. Hulse	Senior Certification	16 Years

Name	Title	Experience
	Engineer	
A. Smith	Senior Certification Engineer	16 Years
+ 5 Certification Engineers		

#### **Crayford Laboratory Staff**

Name	Title	Experience
B. Cooper	Deputy Technical Manager	33 years

### **2.5. Organizational Structure**

See Annexes 1 and 2 for organization charts.

## **3. RESOURCES**

A total of 7 employees are directly employed in the Sira Chester laboratory carrying out Ex / ATEX Testing and Assessments. A further 20 Certification employees at Chester are involved in the Ex / ATEX Testing and Assessments. There is one person, Richard King directly involved in the testing and assessment of Gas detectors at the Crayford site.

There are a further 17 people involved in support and administration activities, training, etc.

## **4. DOCUMENTATION**

### **4.1. Quality Manual**

The Quality Manuals describe the Quality System in the laboratories. Included in the Quality Manuals are descriptions of the organization, its generic policies and objectives relating to quality, and its general operations. The Quality Manuals were reviewed during the re-assessment and found appropriate in meeting the IECEx System requirements.

The ST&C Quality Manual covers the Chester site, and at the time of the assessment visit was at issue 22 dated 15/06/2010.

The SEL Quality Manual covers the Crayford site, and at the time of the assessment visit was at issue 37 dated 18/06/2010.0

### **4.2. Procedures**

The procedures for the Chester Laboratory operations are contained in LOP series. Procedure 100.01, issue 9 dated 15 June 2009 is the General Laboratory Operating Procedure.

The procedures for the Crayford Laboratory operations are contained in the Gas Detector Testing Procedures, currently at issue 19, dated 22 July 2009.

Laboratory Operating Procedures and amendments are issued under the authority of the Technical Manager and the Quality Manager.

#### **4.3. Work Instructions**

The work instructions needed for Chester laboratory testing are retained in the LOP series documents on Proquis. There are a number of ST&C Work Instructions dating from the old Sira Group which are still showing as current on Proquis. A finding was raised regarding this that was subsequently resolved to the satisfaction of the assessment team.

There are a few local Work Instructions at Crayford numbered in the SEL WLxx series. These mainly relate to general ISO 17025 requirements and non ExTL testing

PROQUIS (PE) work instructions are issued under the authority of the Quality Manager and are approved by the relevant Manager (which is dependent on the subject of the work instruction).

#### **4.4. Records**

Documents are stored in electronic and/or paper form.

Quality records such as audit reports, corrective and preventative actions and customer complaints are all kept in the "Proquis" system

Chester equipment and calibration records are stored in paper form in the Quality Department. At Crayford the records are stored in the laboratory in paper form and electronic copies are sent to Chester Quality department for storing on the Proquis system.

Chester training records, such as education certificates, CV's etc are also maintained in paper form by the Quality Department. For the Chester laboratory a competency matrix is maintained in electronic form by the Laboratory Technical Manager. At Crayford individual training records are maintained in paper form by the engineers. Copies of education certificates and general personnel information is held by the SEL Business Manager.

For Chester the policy regarding records is detailed in section 8.1 of LOP 100.01 although there are no specific procedures and a finding regarding this was raised during the visit. This matter was later addressed to the satisfaction of the assessment team.

For Crayford the policy regarding records is detailed in section 13 of the SEL Quality Manual and SEL WI 02.

#### **4.5. Document Change Control**

Document control and change is described in ST&C WI 66 PROQUIS (PE) System – Documentation Control.

Documents such as manuals and standards which regulate the operation of ST&C are controlled by the document control centre, which is administered by the Quality Manager.



All ST&C documents, including forms and publicity material, are subject to a controlled system of updating and amendment.

Most documents are controlled and available within ST&C by a system called PROQUIS. The issue of controlled documents is to the extent necessary to provide ready access for all appropriate personnel.

Control of standards is effected by maintaining a record of all standards held on the standards spreadsheet. Standards are labelled as 'controlled' or 'uncontrolled'.

For the updating of standards Sira subscribes to the BSI "PLUS" updating service for all controlled BS, EN, IEC and ISO standards.

Other controlled documents including UKAS and notified body related documents are updated by direct mailing from the issuing authorities or by checking relevant websites.

#### 4.6. Test Records

At Chester Test records and Test reports, are scanned and stored on the Z:drive of the Sira server once jobs are completed the original paper records are sent to the certification department for inclusion in the certification records. The electronic records are stored on the server by year and then by test number.

At Crayford Test records are recorded in Laboratory Handbooks. These are stored in the laboratory. Copies of signed test reports, are stored in paper form and unsigned copies are stored on the G:drive of the Sira server. All records are cross referenced to the project number.

## 5. TEST REPORTS

### 5.1. Test Reports Issued

Number of test reports issued under the IECEx, national or regional schemes in the preceding four years for each type of protection:

Standards	Title	Number of issued certificates					Total
		2006	2007	2008	2009	2010	
60079-0 Edition 5	Explosive atmospheres - Part 0: Equipment - General requirements						<b>Part 0 included in numbers below</b>
60079-1 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"	37	52	64	58	83	<b>294</b>
60079-2 Edition 5	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p»	-	-	-	-	1	<b>1</b>
60079-5 Edition 3	Explosive atmospheres - Part 5: Equipment protection by powder filling «q»	-	-	-	1	3	<b>4</b>

Standards	Title	Number of issued certificates					
60079-6 Edition 3	Explosive atmospheres - Part 6: Equipment protection by oil immersion «o»	-	-	-	-	-	-
60079-7 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	29	30	34	19	46	<b>158</b>
60079-11 Edition 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	24	24	26	39	42	<b>155</b>
60079-15 Edition 4	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus	3	9	7	6	21	<b>46</b>
60079-18 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus	2	1	1	4	1	<b>9</b>
60079-25 Edition 2	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems	-	-	-	-	-	-
60079-26 Edition 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga	0	5	16	24	26	<b>71</b>
60079-27 Edition 2	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)	-	-	-	-	3	<b>3</b>
60079-28 Edition 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation	-	-	-	1	1	<b>2</b>
60079-29- 1 Edition 1	Explosive atmospheres - Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases	-	-	-	-	-	<b>0</b>
60079-30- 1 Edition 1	Explosive atmospheres – Part 30-1: Electrical resistance trace heating – General and testing requirements	-	-	-	-	2	<b>2</b>
60079-31 Edition 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	-	-	7	39	56	<b>102</b>

Standards	Title	Number of issued certificates					Included in Nos below
61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements						
61241-1 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 1: Protection by enclosures "tD" plus -1	8	29	31	3	22	<b>93</b>
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by pressurisation "pD"	0	0	0	0	0	<b>0</b>
61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD'	0	0	0	0	0	<b>0</b>
61241-18 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"	2	0	0	0	0	<b>2</b>
62013-1 Edition 2	Caplights for use in mines susceptible to firedamp Part 1: General requirements - Construction and testing in relation to the risk of explosion	-	1	-	-	0	<b>1</b>
62013-2 Edition 2	Caplights for use in mines susceptible to firedamp Part 2: Performance and other safety-related matters	-	-	-	-	-	<b>-</b>
61779-1	Part 1: General requirements and Test Methods	-	1	-	-	1	<b>2</b>
61779-4	Part 4: Performance requirements for group II apparatus including up to 100% lower explosive limit.	-	1	-	-	1	<b>2</b>

Note: The above figures are the same as the number of certificates issued as generally there is 1 ExTR associated with each certificate.

Additionally for ATEX Directive projects the following Certificates have been issued:-

ATEX Variations 3834 in total 2006 – 2010 ATEX Prime certificates 870 in the same period (including 317 EXd, 287 EXi, 178 Exe and 112 Exn).

## 6. CALIBRATION

Most equipment is subject to external calibration using UKAS accredited calibration facilities, in accordance with the laboratory quality manual. There is a system in place

to ensure that each month all equipment requiring calibration is identified and sent out for calibration. All equipment checked both at Chester and Crayford was in calibration and there were appropriate records supporting the calibration.

For gas mixing at Chester they have a hydrogen analyser, an acetylene analyser and an analyser for methane/propane/ethylene. The analysers are calibrated annually and subject to zero and span checks whenever testing is done. They do internal dynamic calibration of the PCB transducers used for pressure determination.

The gas mixing systems at Crayford use certified gas mixtures plus three Wosthoff mixing pumps. These are subject to periodic linearity and accuracy checks which also establish traceability.

The same calibration tracking system is utilised for equipment used at Crayford with staff there arranging the calibration. A check sheet is used when the calibrated equipment is received back to ensure appropriate review of the calibration report, prior to the equipment being put into use.

## 7. CONFIDENTIALITY

All work is confidential. Employees sign a confidentiality statement as part of their employment contract.

All work is treated as confidential and employee's contracts incorporate a confidentiality statement as a condition of employment. The work is treated as confidential to that client unless otherwise agreed or as required by law.

Staff will ensure that confidential information is not left visible or easily accessible in areas that may be accessible to visitors.

Any other directors, members of SCS committees, associates and subcontractors, are required to sign a confidentiality agreement (SCS forms SCS/SF/011, 003, 010 or Form 3010).

Signed copied of the contract of employment which includes the confidentiality agreement, were seen for Kevin Spence and Michelle Haliwell.

All members of staff also sign an Associates Agreement with SCS, as SCS has no direct employee's. The Associates Agreement also covers confidentiality, independence and integrity. The signed copies for R. King and A.C. Smith were seen.

## 8. NATIONAL ACCREDITATION

At the time of the assessment Sira held an accreditation according to ISO/IEC 17025, issued by UKAS under the reference 0327N Testing for Chester and 0376N Testing for Crayford, see **Annex 3** for a copy of the Chester accreditation certificate and **Annex 4** for the Crayford accreditation certificate (at the time of the assessment). Subsequently with the change in company structure the certificate 0327N now covers both locations.

The current scope of accreditation is detailed in the UKAS Testing Schedule shown in **Annex 5**.

UKAS accreditation certificates are valid as long as the schedule of accreditation is published on the UKAS Website ([www.ukas.com](http://www.ukas.com)). This means, that they are valid until a possible suspension or withdrawal. The latest ST&C certificate was issued on 11 October 2006 and the last SEL certificate on 23 May 2007.

## **9. RECOGNITION AND AGREEMENTS**

Sira, as SCS and ST&C, maintains recognition agreements with a variety of certification bodies and test laboratories. For IECEx certification, only those that are an IECEx ExCB or ExTL are accepted.

## **10. INTERNAL AUDIT AND PERIODIC REVIEW**

The Quality Manager is responsible for ensuring that an internal audit programme is carried out at least annually to review the organisation's compliance with the relevant accreditations.

Audits are conducted either by the Quality Manager or a suitably qualified and experienced person. The minimum requirement for an internal auditor is that they have attended an appropriate training course or have had at least one years auditing experience.

Audits cover the requirements specified in the Quality Manual and relevant Procedures documents. In addition random audits of any area may be undertaken if the Managing Director or Quality Manager considers them necessary.

The performance of tasks carried out directly by the Quality Manager are audited by a competent person independent of the function being audited although the audit for 2010 had not been scheduled at the time of the assessment visit. This was subsequently resolved to the satisfaction of the assessment team.

The audit programme is managed by using the Audit Module of the Proquis Management System software. Results of audits are recorded in Proquis by the auditor, together with any nonconformities and resulting actions. The system informs the appropriate person of the agreed non conformance/action with an appropriate timescale for completion. The auditor records in Proquis a summary of the audit with general observations, conclusions and recommendations as appropriate. The Quality Manager/auditor will verify completion of the agreed corrective action.

Periodic internal audits are carried out as detailed the ST&C Quality Manual Section 6.1 and SEL quality Manual section 5.1

Management reviews are also conducted and recorded in accordance with section 6.2 and SEL quality Manual section 5.2

Further instructions for planning and documentation of audits are contained in WI69.

A number of audits were reviewed during the visit and in general it was seen that detailed audits are being carried out, appropriate detail is recorded and findings from the audits are addressed in an appropriate manner.

## 11. COMPLAINTS AND APPEALS (Including appeals to IECEx)

All complaints are recorded in the “Proquis” system maintained by the Quality Manager, with each complaint being given a unique reference number. The entry in Proquis is controlled via work instruction ST&C WI68: PROQUIS SYSTEM – Issues & Actions.

Information regarding the complaints and appeals process is published on the Sira web site, <http://www.siracertification.com>

The complaints database was reviewed during the visit. Complaints in the range CCS093 to CCS109 have been logged in the last year. The majority of these relate to MCERTS Certification or the VEGA/DSM Calibration scheme and are outside the scope of this audit.

The policy regarding complaints is detailed in section 7.1 of the ST&C Quality Manual and section 6.1 of the SEL Quality Manual. This also addresses appeals to IECEx.

It was noted that in several cases there was either no or limited, supporting evidence attached to the Proquis complaint record contrary to the complaints procedure. A finding was raised regarding this issue with SIRA undertaking to ensure supporting evidence is maintained for future records.

## 12. INTERLABORATORY COMPARISONS

Since the last IECEx assessment ST&C has participated in the IFM organized IECEE Inter-laboratory comparison program, for measuring the Temperature rise of a Switch to IC 61058, program reference 09e33. All results were within the accepted tolerances for the comparison.

The SEL laboratory participated in a round robin study covering the measurement of Response Time for a series of infrared gas detectors. The round robin was organized by BAM in Germany and was carried out by Sira in November 2007. The testing was performed in accordance with BS EN / IEC 61779-1:2000. Unfortunately the outcome of the round robin was inconclusive since there was a wide spread of results from the participating laboratories that could not be identified as a problem other than an issue with the test specification.

## 13. SPECIAL FACTS TO BE NOTED

### 13.1. *Supporting Documentation*

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat as part of a site assessment report. These include:

- Details of issues raised and how these have been resolved
- Compliance statements relevant to ISO/IEC 17025
- Photos of the facilities
- Notes from the assessors

### 13.2. *Witnessed Tests*

The following tests were witnessed during the assessment visit:

- Flameproof pressure determination to IEC 60079-1
- Use of the spark test apparatus to IEC 60079-11
- Temperature rise

- IP6X/5X test to IEC 60529
- Gas detector tests to IEC 60079-29-1 as follows:
  - 5.4.3.1 and 5.4.3.2 Calibration and adjustment - calibration curve (Group I and II)
  - 5.4.9 Humidity
  - 5.4.10 Air velocity
  - 5.4.16 Time of response
  - 5.4.24.1 Poisons (Group I)

#### 14. COMMENTS (Including issues found during assessment)

The IECEx Re-assessment of the ExCB was performed as a joint assessment of UKAS (annual surveillance assessment) and IECEx.

In accordance with the new concept of collaboration agreed between ILAC and the IEC schemes a single assessment report has been produced covering this visit. The combined report will be used by both IECEx and UKAS. The full report comprises a UKAS Cover page and report covering non-IECEx activities followed by the IECEx ExTL report.

Some issues were found during the assessment. These included lack of provision on forms to show actual gas concentrations for Ex d testing; incorrect methods of correcting results; missing wiper blade for viewing window on dust chamber; restricted availability of interpretation sheets and corrigenda for standards; incorrect air velocity test for IEC 60079-29-1; potential problems with calibration procedure for air flow tunnel; clear identification of gas detectors being tested and gas cylinders used for their tests; clarification of subcontractors for gas detector testing (see also ExCB report); lack of a procedure for using the spark test apparatus for intrinsic safety; and gas mixing procedure not addressing latest standards. All were resolved to the satisfaction of the assessment team.

#### 15. RECOMMENDATION

Based on the re-assessment performed on 21st to 29th June, Sira Test & Certification Limited is recommended for continued acceptance in the IECEx scheme as a IECEx Testing Laboratory (ExTL) according to the scope of the standards listed in this document.

Item relating to UKAS only: The UKAS schedule of accreditation for Sira Test & Certification, 0327N will be extended to include IEC 60079-18:2009 and IEC 60079-15:2010. Additionally evidence was provided of the stability of the new freezer, EC/11, to be able to operate at -80°C. The chart viewed showed operating with a comfortable margin below this temperature. Hence, the scope change to allow test for Ex d enclosures at -80°C is supported. The 0376N accreditation schedule will also need to be updated to exclude vibration testing under note 1

Lead Assessor	IECEx Team Leader	IECEx Expert Assessor
C. Bestwick UKAS	J. Munro IECEx	A. Zalogin IECEx

Date: 15 July 2011





## **References**

Improvement action report – C Bestwick (3 pages) (ExCB and ExTL)  
Improvement action report – Mr J. Munro (4 pages) (ExCB and ExTL)  
Improvement action report – Dr A. Zalogin (2 pages) (ExCB and ExTL)  
Site Assessment Report

## **List of Annexes:**

Annex 1 – Sira Certification ExCB/ExTL Organisation Chart

Annex 2 – Current Sira ExTL Organisation Chart

Annex 3 – UKAS Certificates Reference 0327N Testing for Chester

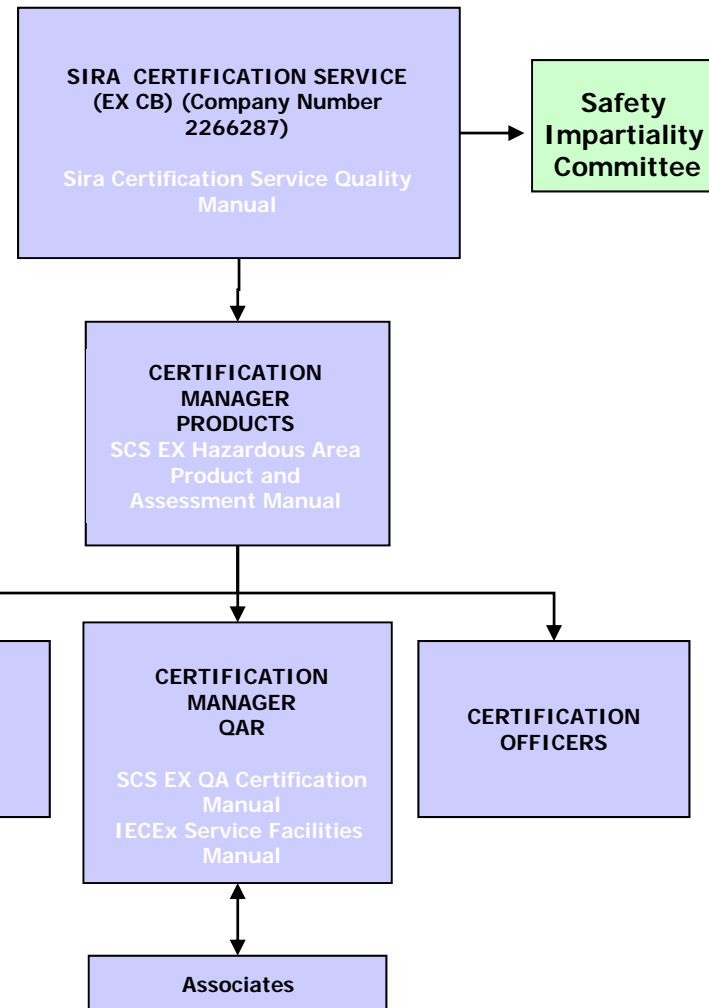
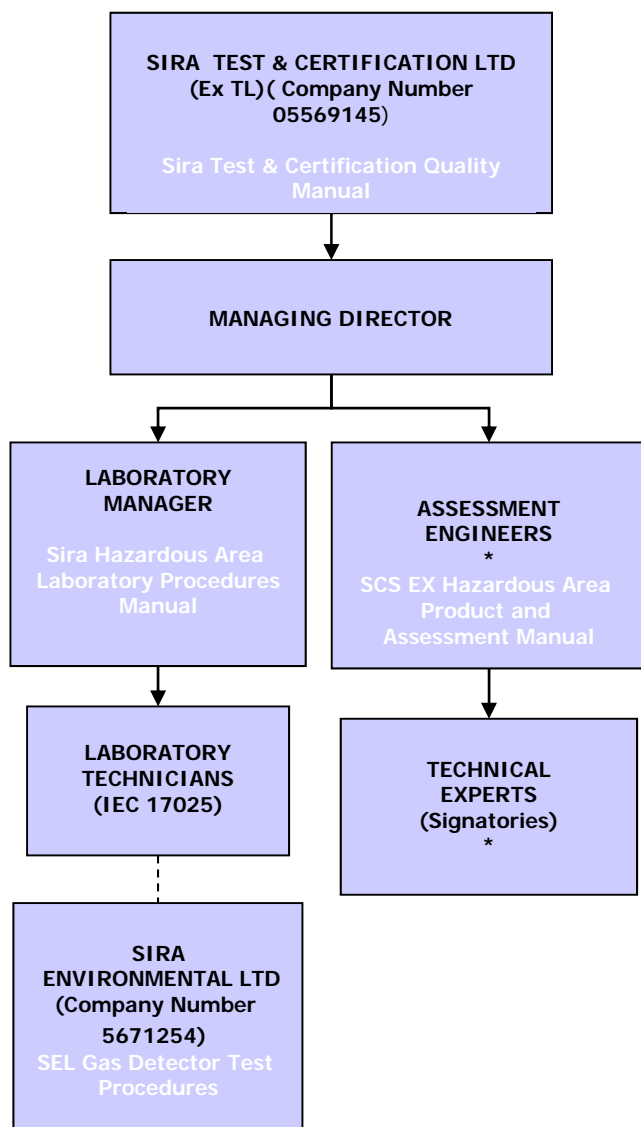
Annex 4 – UKAS Certificates Reference 0376N Testing for Crayford

Annex 5 – Extracts from Current Scope of Accreditation



**ExTL**

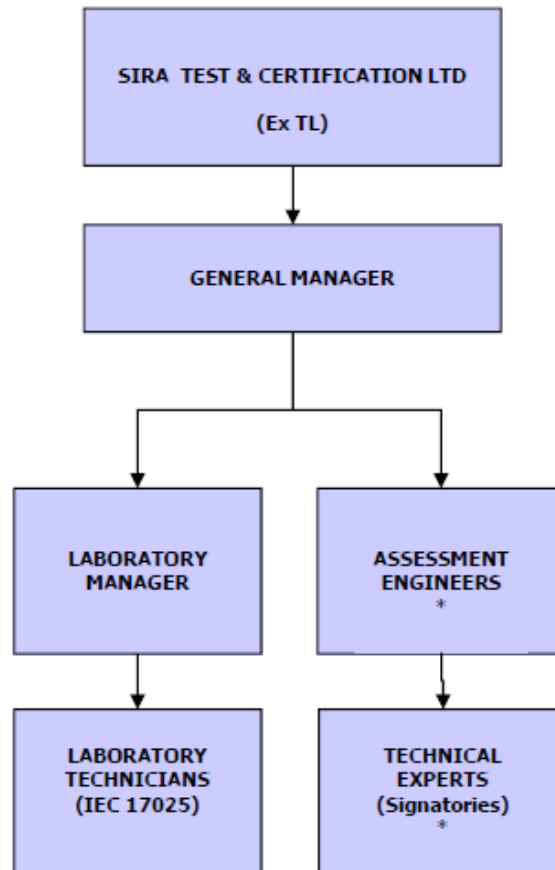
**Annex 1 SIRA CERTIFICATION  
ORGANISATION CHART (IECEx CERTIFICATION)**

**ExCB**

Note: The title defined here (\*) is the role undertaken to illustrate the independence of the checking function and does not reflect the Job Title of the personnel, which is either Certification Engineer or Consultant Engineer. Personnel may fulfil either function depending on their competence

**Annex 2**  
**Current Sira ExTL Organisation Chart**

**SIRA TEST & CERTIFICATION ExTL  
ORGANISATION CHART (IECEx CERTIFICATION)**



Note: The title defined here (\*) is the role undertaken to illustrate the independence of the checking function and does not reflect the Job Title of the personnel, which is either Certification Engineer or Consultant Engineer. Personnel may fulfil either function depending on their competence

**Annex 3**  
**UKAS Certificates Reference 0327N Testing for Chester**

**United Kingdom Accreditation Service**

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**ACCREDITATION CERTIFICATE**



**TESTING LABORATORY**  
**No. 0327**

**SIRA Test & Certification Ltd**

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005  
*General Requirements for the competence of testing and calibration laboratories.*

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated 18 June 2005).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from the UKAS website [www.ukas.org](http://www.ukas.org).

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKAS website indicates that the accreditation is no longer in force.

  
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*Accreditation Manager, United Kingdom Accreditation Service*

**Initial Accreditation date**  
11 November 1985

**This certificate issued on**  
18 August 2006

The Department of Trade and Industry (DTI) has entered into a memorandum of understanding with the United Kingdom Accreditation Service (UKAS) through which UKAS is recognised as the national body responsible for assessing and accrediting the competence of organisations in the fields of calibration, testing, inspection and certification of systems, products and persons.

**Annex 4**  
**UKAS Certificates Reference 0376N Testing for Crayford**

**United Kingdom Accreditation Service**

**ACCREDITATION CERTIFICATE**



**TESTING LABORATORY**  
**No. 0376**

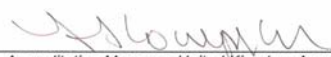
**Sira Environmental Ltd**

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005  
*General Requirements for the competence of testing and calibration laboratories.*

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated 18 June 2005).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from the UKAS website [www.ukas.org](http://www.ukas.org).

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKAS website indicates that the accreditation is no longer in force.



*Accreditation Manager, United Kingdom Accreditation Service*

**Initial Accreditation date**  
**30 June 1987**

**This certificate issued on**  
**23 May 2007**

The Department of Trade and Industry (DTI) has entered into a memorandum of understanding with the United Kingdom Accreditation Service (UKAS) through which UKAS is recognised as the national body responsible for assessing and accrediting the competence of organisations in the fields of calibration, testing, inspection and certification of systems, products and persons

**Annex 5**  
**Extracts from Current Scope of Accreditation**

**Schedule of Accreditation**  
issued by  
**United Kingdom Accreditation Service**  
21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

	<b>Sira Test and Certification Ltd</b>	
<b>0327</b>  Accredited to ISO/IEC 17025:2005	<b>Issue No: 026    Issue date: 01 January 2011</b>	
	<b>Hazardous Area Centre</b> Rake Lane Eccleston Chester CH4 9JN	<b>Contact: Mr S P Cork</b> Tel: +44 (0)1244 670900 Fax: +44 (0)1244 681330 E-Mail: <a href="mailto:steve.cork@siracertification.com">steve.cork@siracertification.com</a> Website: <a href="http://www.siracertification.com">www.siracertification.com</a>
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
<b>Address</b> Hazardous Area Centre Rake Lane Eccleston Chester CH4 9JN  <b>Local contact</b> Mr S P Cork  Tel: +44 (0)1244 670900 Fax: +44 (0)1244 681330 Email: <a href="mailto:steve.cork@siracertification.com">steve.cork@siracertification.com</a> Website: <a href="http://www.siracertification.com">www.siracertification.com</a>	Sections 1 - 2	C
<b>Address</b> 12 Acom Industrial Park Crayford Road Crayford Dartford Kent DA1 4AL  <b>Local contact</b> Mr R Cooper  Tel: +44 (0)1322 520500 Fax: +44 (0)1322 520501 Email: <a href="mailto:bob.cooper@siracertification.com">bob.cooper@siracertification.com</a> Website: <a href="http://www.siracertification.com">www.siracertification.com</a>	Sections 3 - 4	D

 0327 Accredited to ISO/IEC 17025:2005	<p align="center"><b>Schedule of Accreditation</b>  issued by  <b>United Kingdom Accreditation Service</b>  21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK</p>
	<p align="center"><b>Sira Test and Certification Ltd</b>  <b>Issue No: 026    Issue date: 01 January 2011</b></p>
<p align="center">Testing performed by the Organisation at the locations specified</p>	

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<p><b>SECTION 1: Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres</b></p> <p>Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres</p>	<p><b>Electrical Product Tests</b></p> <p>Tests for the General Requirements for Electrical Apparatus for Potentially Explosive Atmospheres or Hazardous (Classified) Locations</p> <p>General Requirements</p> <p>Thermal Stability min temp - 80 °C</p> <p>Max enclosure size for Thermal Stability test 795 x 825 x 800 mm</p>	<p>EN 50014:1997, Amds 1 and 2, (withdrawn)  EN 50014:1992 (withdrawn)  EN 50014:1977, Amds A1 to A5, (withdrawn)  IEC 60079-0:2007  IEC 60079-0:2004 (withdrawn)  IEC 60079-0:2000 (withdrawn)  IEC 60079-0:1998 (withdrawn)  IEC 60079-0:1983 (withdrawn)  Excluding:  Resistance to light on Non-metallic enclosures  Ageing  Chemical Compatibility  Charging tests  (Clause 26.14, 60079-0:2004 and 2007)</p>	C
	<p>Tests for Oil Immersed Apparatus (Exo)</p>	<p>EN 50015:1998  EN 50015:1994 (withdrawn)  EN 50015:1977, Amd A1, (withdrawn)  IEC 60079-6:2007  IEC 60079-6:1995 (withdrawn)</p>	C
	<p>Tests for Pressurised and Purged Apparatus (Exp)</p>	<p>EN 50016:2002 (withdrawn)  EN 50016:1995 (withdrawn)  EN 50016:1977, Amd A1, (withdrawn)  IEC 60079-2:2007  IEC 60079-2:2001 (withdrawn)  IEC 60079-2:1983 (withdrawn)</p>	C

 Accredited to ISO/IEC 17025:2005	<p align="center"><b>Schedule of Accreditation</b>          issued by  <b>United Kingdom Accreditation Service</b>          21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK</p>
	<p align="center"><b>Sira Test and Certification Ltd</b>  <b>Issue No: 026    Issue date: 01 January 2011</b></p>
<p align="center">Testing performed by the Organisation at the locations specified</p>	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>SECTION 1: Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres (cont'd)</b>	<b>Electrical Product Tests (cont'd)</b>  Tests for Sand Filled Apparatus (Exq)	EN 50017:1998 EN 50017:1994 EN 50017:1977, Amd A1, (withdrawn) IEC 60079-5:2007 IEC 60079-5:1997 (withdrawn)	C
	Tests for Apparatus in Flameproof Enclosures (Exd)  For 60079-1 Clause 15.1.2/15.1.3, min temp - 80 °C Clause 15.2, max temp 300 °C	EN 50018:2000 (withdrawn) EN 50018:1994 (withdrawn) EN 50018:1977, Amds A1 to A3, (withdrawn) IEC 60079-1:2007 Excluding: Clause 19.3.2, Flammability test IEC 60079-1:2003 (withdrawn) IEC 60079-1:1971, Amds 1 and 2, (withdrawn) IEC 60079-1A:1975 (withdrawn)	C
	Tests for Increased Safety Apparatus (Exe)	EN 50019:2000 (withdrawn) EN 50019:1994 (withdrawn) EN 50019:1977, Amds A1 to A5, (withdrawn) IEC 60079-7:2006 IEC 60079-7:2001, corrig, (withdrawn) IEC 60079-7:1990, Amds 1 and 2, (withdrawn) Excluding: Mechanical tests for screwed lampholders Interturn Voltage Test as in HD 553 and IEC 60044-6	C



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	<p align="center"><b>Sira Test and Certification Ltd</b>  <b>Issue No: 026    Issue date: 01 January 2011</b></p>
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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>SECTION 1: Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres (cont'd)</b>	<b>Electrical Product Tests (cont'd)</b>  Tests for Increased Safety Apparatus (Exe) (cont'd)	Tests on Secondary Batteries greater than 25 Ah Ventilation of Battery Enclosures Sulphur dioxide test for bi-pin lamp caps/lampholders Vibration test luminaires with bi-pin caps/lampholders Tests for high-voltage machines	C
	Tests for Intrinsically Safe Apparatus, Associated Apparatus and Systems (Exi)	EN 50020:2002 EN 50020:1994, Amd 1, (withdrawn) EN 50020:1977, Amds A1 to A5, (withdrawn) EN 50039:1980 (withdrawn) IEC 60079-11:2006 IEC 60079-11:1999 (withdrawn) IEC 60079-11:1991 (withdrawn)	C
	Tests for Encapsulated Apparatus (Exm)	EN 50028:1987 (withdrawn) IEC 60079-18:2009 IEC 60079-18:2004 IEC 60079-18:1992 (withdrawn)	C
	Tests for Electrical Apparatus for Explosive Atmospheres with Type of Protection n (Exn)	BS 6941:1988 (withdrawn) EN 50021:1999 (obsolescent) IEC 60079-15:2010 IEC 60079-15:2005 IEC 60079-15:2001 IEC 60079-15:1987 (withdrawn) Excluding: Tests for ballasts in circuits with ignitors Mechanical shock for batteries Ignition tests for large high-voltage machines	C




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	<p align="center"><b>Sira Test and Certification Ltd</b>  <b>Issue No: 026    Issue date: 01 January 2011</b></p>
<p align="center">Testing performed by the Organisation at the locations specified</p>	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>SECTION 1: Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres (cont'd)</b>  Intrinsically safe systems	<b>Electrical Product Tests (cont'd)</b>  Construction, safety and marking	IEC 60079-25:2010 IEC 60079-25:2003	C
Special requirements for construction, Test and Marking of Electrical Apparatus of Equipment Group II, Category 1G	Construction, safety and marking	IEC 60079-26:2006 IEC 60079-26:2004 (withdrawn) EN 50284:1999 (withdrawn)	C
Tests for Fieldbus intrinsically safe concept (FISCO)	Construction, safety and marking	IEC 60079-27:2005 IEC TS 60079-27:2002 (withdrawn)	C
Equipment dust ignition protection by enclosure "t"	Construction, safety and marking	IEC 60079-31:2008	C
Tests for Electrical Apparatus with Protection by Enclosure for use in the presence of Combustible Dusts	Construction, safety and marking  Thermal Stability min temp - 80°C  Max enclosure size for Thermal Stability test 795 x 825 x 800 mm	BS 6467:Part 1:1985 (withdrawn) Excluding: Appendix H.2	C
Tests for Electrical Apparatus with Protection by Enclosure for use in the presence of Combustible Dusts  General requirements	Construction, safety and marking	IEC 61241-0:2004 Excluding: Resistance to light Ageing test for material	C

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<p align="center">Testing performed by the Organisation at the locations specified</p>	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>SECTION 1: Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in potentially Explosive Atmospheres (cont'd)</b>  Construction and Testing	<b>Electrical Product Tests (cont'd)</b>  Construction, safety and marking	EN 50281-1-1:1998 Excluding: Clause 6.10 Radiating equipment IEC 61241-1-1:1999	C
Protection by enclosure "tD"	Construction, safety and marking	IEC 61241-1:2004	C
Protection by enclosure "pD"	Construction, safety and marking	IEC 61241-4:2001	C
Protection by enclosure "iD"	Construction, safety and marking	IEC 61241-11:2005	C
Protection by enclosure "mD"	Construction, safety and marking	IEC 61241-18:2004	C
Metering pumps and dispensers to be installed at filling stations and used to dispense liquid fuel	Safety Tests	BS 7117:Part 1:1991, Amds 1 and 2 (withdrawn)	C
Miners Cap Lamps	Safety Tests	EN 50033:1991 IEC 62013-1:2005 IEC 62013-1:1999 Excluding: Clause 10.13.2, Store of dangerous charge	C

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Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<p><b>SECTION 3: INSTRUMENTS FOR MEASURING VEHICLE EXHAUST EMISSIONS</b></p> <p>INSTRUMENTS FOR MEASURING VEHICLE EXHAUST EMISSIONS</p>	<p><b>Performance Tests</b></p> <p>PERFORMANCE TESTS FOR PATTERN APPROVAL</p> <p><b>**RF and EMC Susceptibility</b>  tests carried out at another  UKAS lab which provides the  E-M influence.</p>	<p>OIML International  Recommendation R99  Annex A1 to A7, A9, A10.1 and  A16 to A23</p> <p>Vehicle Inspectorate Specifications:  MOT/05/01/01 Sections 8.5.1 to  8.5.12 and 8.6  MOT Exhaust Gas Analysers  VPB/07/24/20  Excluding RF and EMC  Susceptibility**</p>	<p align="center">D</p> <p align="center">D</p>

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>SECTION 4 : GAS DETECTORS</b>	<b>Performance Tests</b>		
ELECTRICAL APPARATUS FOR THE DETECTION AND MEASUREMENT OF FLAMMABLE GASES			
General requirements and test methods	Performance tests	BS EN 50054:1999* (withdrawn) BS EN 61779-1:2000*	D
Performance requirements for Group I apparatus indicating up to 5 % (V/V) methane in air	Performance tests	BS EN 50055:1999* (withdrawn) BS EN 61779-2:2000*	D
Performance requirements for Group I apparatus indicating up to 100 % (V/V) methane in air	Performance tests	BS EN 50056:1999* (withdrawn) BS EN 61779-3:2000*	D
Performance requirements for Group II apparatus indicating up to 100 % lower explosive limit	Performance tests	BS EN 50057:1999* (withdrawn) BS EN 61779-4:2000*	D
Performance requirements for Group II apparatus indicating up to 100 % (V/V) gas	Performance tests	BS EN 50058:1999* (withdrawn) BS EN 61779-5:2000*	D
Detectors for flammable gases	Performance tests	IEC 60079-29-1:2007*	D
ELECTRICAL APPARATUS USED FOR DETECTION OF COMBUSTIBLE GASES IN DOMESTIC PREMISES			
Test Methods and performance requirements	Performance tests	BS EN 50194-1:2009 BS EN 50194:2000*	D
Specification for carbon monoxide detectors (electrical) for domestic use	Performance tests	BS EN 50291:2001* BS 7860:1996, Amd 1* (withdrawn)	D