**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 Element Materials Technology Warwick Ltd., an Accepted ExCB and an Accepted ExTL within the IECEx Equipment Scheme 02.**

**Circulation to: Members of the IECEx Management Committee, ExMC**

**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 the continued acceptance of Element Materials Technology Warwick Ltd., an Accepted ExCB and an Accepted ExTL within the IECEx Equipment Scheme 02.

This report is hereby submitted for endorsement during the 2022 ExMC Meeting.

***Chris Agius***

**IECEx Secretariat**

|  |  |
| --- | --- |
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IEC System for certification to standards relating to equipment for use in Explosive Atmospheres (IECEx System)

IECEx Assessment Report Form

IECEx assessment report form for use by IECEx assessment teams to report assessments conducted according to the relevant IECEx assessment procedures of:

Operational Document IECEx OD 003-2 for the Certified Equipment Scheme

Operational Document IECEx OD 316-\* for the Certified Service Facility Scheme

Operational Document IECEx OD 422 for the IECEx Conformity Mark Licensing Scheme

Operational Document IECEx OD 501 for the Personnel Competence Scheme

IECEx ExCB/ExTL assessment report for Element Materials Technology Warwick Ltd

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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# Assessment information

## Type of body covered by this assessment:

|  |  |
| --- | --- |
| ExCB for IECEx Certified Equipment Scheme |  |
| ExTL for IECEx Certified Equipment Scheme |  |
| ATF for IECEx Certified Equipment Scheme |  |
| ExCB for IECEx Certified Service Facilities Scheme |  |
| ExCB for IECEx Conformity Mark Licensing System |  |
| ExCB for IECEx Certification of Personnel Competency Scheme |  |

## Type of assessment:

|  |  |
| --- | --- |
| Pre-assessment for candidate body |  |
| Initial assessment for candidate body |  |
| Surveillance |  |
| Re-assessment |  |
| Scope extension |  |

## Details of body

### Country

United Kingdom

### Name of body

Element Materials Technology Warwick Ltd

### Name and title of nominated principal contact

|  |  |  |
| --- | --- | --- |
| Name | Title | E-mail address |
| Simon Barrowcliff | General Manager, Certification and Approvals | simon.barrowcliff@element.com |

## Assessment information

### Members of the assessment team

|  |  |
| --- | --- |
| Name | Role |
| Bernard Piquette | IECEx Lead Assessor |

### Place(s) of assessment

|  |  |
| --- | --- |
| Unit 1 Pendle Place  Skelmersdale, West Lancashire  WN8 9PN, United Kingdom |  |

### Assessment date(s)

In light of the travel restrictions associated with COVID-19, this assessment was conducted as a remote assessment under the provisions of new IECEx OD 060. The assessment plan was adjusted to facilitate a remote assessment with the following key points to be noted:

• Full access to Element Materials Technology Warwick Ltd testing and certification procedures, along with details of test equipment and facilities sufficient to enable the completion of the TCD

• Interviews with testing staff were conducted

• Provisions were made for “live” video streaming to witness tests

The assessment was conducted over the period 27 to 29 April 2021 (3 days)

## Application information and background information on the assessment

Due to problems with travelling caused by the COVID-19 a remote assessment was conducted under the provisions of IECEX OD 060, as agreed with the Secretariat

## Scopes

### ExCB scope for equipment certification scheme

The scope for the ExCB is shown in Annex A.

### ExTL scope

The ExTL scope is the same as for the ExCB.

# Common information

## Legal entity of body

Element Materials Technology Warwick Ltd is registered in the United Kingdom, Companies House number 2536659.

## Financial support

Element Materials Technology Warwick Ltd is a self-supporting, test and certification company. It is a wholly owned subsidiary of Element Materials Technology Ltd who employ 6500 staff at 200 locations across the globe.

## History

Element Materials Technology Warwick Ltd is a multi-disciplinary testing and certification business, employing nearly 200 staff and operating out of six sites in the United Kingdom. It provides testing and certification for Ex, safety, EMC and environmental performance.

In May 2015, TRaC Global Ltd was acquired by Element Materials Technology Ltd. It was originally named TRaC EMC & Safety Ltd until fully integrated into the TRaC Group in 2012 under then owners Bioquell PLC. Throughout TRaC’s existence there has been continuity of procedures and personnel.

Element Materials Technology Warwick Ltd (and former TRaC companies) was a notified body under the ATEX directive from 2003 to 2021, and is now a UKCA approved body for Ex equipment. In conjunction with its notified body in the Netherlands, Element provides UKAS accredited testing and certification services for EX equipment. Element has been a member of the IECEx System as an ExCB and ExTL since 2010.

## Documentation

### Quality manual

The company has an intranet based quality manual covering general operations and testing services to ISO/IEC 9001 and ISO/IEC 17025. In addition it has an ISO/IEC17065 certification manual also based on this intranet. The Element intranet is known as EWASP.

The management system includes all policies and references out to supplementary material and procedures, which are scheduled to be, reviewed during the management review meetings. Changes to the management system following the management review meetings are communicated to the laboratory staff. The policy is issued by top management and includes statements to that address: management commitment to good professional practice to quality, managements statement of laboratory standard of service, purpose of the management system related to quality, a requirement that all personnel familiarize themselves with the quality documentation, management commitment to comply with international standards, and continuous improvement. The management system also identifies the roles and responsibilities of quality manager and the technical manager and any changes that are made to the management system are documented and maintained.

The General Quality Manual and relevant associated quality manuals were checked and found to meet the requirements of the IECEx System.

### Procedures

General operating procedures and EX specific test (XF and XFT series) and certification procedures (CSP) are available on the Element intranet or on local servers.

The documentation was checked and found to meet the IECEx System requirements.

### Work instructions

Work instructions are available on the Element intranet or on local servers. All testing is covered in appropriate work instructions.

They were reviewed and found to meet IECEx requirements

### Records (including test records where relevant)

Test records are made at point of measurement and then scanned into an electronic filing system. The electronic filing system is the official record of testing and assessment. In addition, the ExCB retains electronic certification files.

Records are controlled in accordance with the Document Control procedure QAP-04, which also states the requirement and instruction for backing up all data. The procedure also defines the method for the identification, collection, indexing, access, filing, storage, maintenance and disposal/archiving of quality and technical records. All the records are contained on the company server/share point and are stored and retained in such a way that they are readily retrievable. Procedures were also available for the protection and back-up records stored electronically and to prevent unauthorized access to or amendment of these records.

The laboratory retains records (for 10 years) of original observations from the accredited work, in sufficient detail to establish an audit trail. Information would include test records, test report etc. The laboratory ensures that all observations, data and calculations are recorded at the time they are made and are identifiable to the specific task.

The records storage system was found to meet the requirements of IECEx.

### Document change control

All documents are controlled by revision level with a defined approval process. The document control procedure is QAP-04.

Document Control procedures are available and states clearly who is responsible for authorising and implementing documentation and procedures. Documents issued are approved by authorised personnel. Obsolete documents are kept on the company shared drive, Share Point. Care is taken, however, in ensuring that newly issued procedures are authorised by management, and read and understood by appropriate staff. Authorised copies of appropriate documents are available via the Share Point system. Documents created by the laboratory are uniquely identified, showing the date of issue and revision identification, page numbering, total number of pages and the issuing authorities.

When changes are made to documents the procedures (QAP-04) state that they will be reviewed by the same function that performed the original document review and that all change history is available to be viewed. The changes to the documents are identified by the change history table at the front of each document. Hand amendments are not used by the laboratory.

Test and report signatories document changes were reviewed and deemed to be compliant with their procedures.

Standards are available from an electronic standards library held on a local server and are available to all ExCB and ExTL staff. In addition the ExTL has authorised hard copies of standards.

The document change control system meets the requirements of IECEx.

## Confidentiality

All contractors and members of advisory bodies sign a confidentiality agreement (HR-003). There are procedures for test and certification confidentiality.

There is a policy HR003 for Declaration of confidentiality independence and impartiality, which states the staff will not be influenced by the commercial requirements of the company (also CSP-30 procedure supports this). The agreements are signed again each year as part of the staff appraisal process. Staff are to report to their manager should they think they are being influenced inappropriately. There is a policy / procedure for customer confidentiality and for protecting electronic storage of results. Data stored on the company shared drive is secure and password protected. Backups are run daily. Records have been reviewed during the assessment.

The above was found to meet the requirements for IECEx.

## Communication with public and customers (Hard copy and Electronic)

Element Materials have a website located at <https://www.element.com> on which a considerable amount of information can be found related to ATEX and IECEx.

## Recognitions and agreements

There is an agreement with Lasermet covering the provision of testing of optical radiation products. The scope of the agreement is defined by the UKAS Accreditation schedule.

There is an agreement with Nick Bourne trading as Mentor International that covers the review of QAN/QAR quality audits conducted against EN 80079-34.

There is an agreement with North American Enterprises LLC, and they are principally used for Ex testing in the USA.

## Internal audit

Internal audit is addressed in procedure QAP-02. The internal audit schedule is appropriate for the accredited work to be carried out each year. The format of the audit is also clear and leaves room for detailed notes. The procedure QAP-02 Audits, directs any non-conformances to the QAP06 procedure and the NCRs are to be documented in the NCR register, where investigations are carried out. Audits are performed on each of the Element Materials Technology Warwick Ltd sites, normally once a year and address all elements of the management system, including the testing activities. It is the responsibility of the quality manager to plan and organize these audits,

The internal audits reports have been reviewed and found complying the requirements of IECEx.

## Management review

Management review is governed by procedure QAP-35.

The last management meeting was held on September 16, 2020 and the report was reviewed by the assessment team.

The management review was found to meet the requirements for IECEx.

## Contracting, subcontracting and witness testing

### Contracting

This is addressed in the ISO/IEC 17065 Product Certification Manual

### Subcontracting

Subcontracting is addressed in the ISO/IEC 17025 quality manual. It states that subcontracting will be made to approved, laboratories accredited to ISO/IEC 17025.

Should the laboratory have to subcontract work, they have a procedure for doing this. The Laboratory also has procedure QAP-08 for supplier approval, purchase of goods. The procedure details that the work is to be placed with a competent subcontractor (approved to international standards etc). The laboratory will then advise the customer of the arrangement, but will continue to be responsible to the customer for the subcontractor’s work.

The following tests are, or may be, subcontracted by the body:

|  |  |  |
| --- | --- | --- |
| Standard | Clause | Test |
| IEC 60079-0 | 26.10 | Resistance to light |

More details, including bodies to whom tests will be subcontracted, details of accreditation of those bodies and details of how the subcontracted bodies are checked, are included in the site assessment report.

### Off-site and Witness testing

The Element ExTL has a procedure for off-site and witness testing (XF102). The OD 024 register count about 15 manufacturers.

Documents and reports have been reviewed and found complying the IECEX requirements.

## Training and competence

There is a company training procedure QAP-09 addressing training and competence. This includes specific reference to IECEx.

All staff have individual training records (form 51F-011) and competence is summarised in a training matrix that is kept in Excel. There are separate training matrices for certification personnel.

There is a training plan for all staff. This is shown in matrix form with all training shown and where that training is planning for any staff member. Once the training is done, the matrix is updated to show when it was done. Each staff member undergoes annual appraisal.

The laboratory management ensures the competence of all staff involved with their accredited activities. As part of ensuring this, the laboratory provides appropriate supervision for staff undergoing training, and ensures that they have sufficient education, training and experience. The laboratory's management system contains the current job descriptions for managerial, technical and key support personnel involved in the accredited work. Also the laboratory has on file the relevant authorisation(s), competence, educational and professional qualifications, training, skills and experience of all technical personnel, including contracted personnel. This also shows the date on which authorisation and/or competence was confirmed. For continuous professional development the management formulates goals with respect to the education, training and skills, this is done in the form of annual appraisals.

Details of staff competencies are included in the site assessment report.

The system clearly indicates the competence of ExCB and ExTL staff, and their competency was verified during the assessment as meeting the requirements of IECEx.

## Complaints and appeals (including appeals to IECEx)

For complaints handling there is a QAP-33 procedure for the ExTL and a CSP 032 procedure for the ExCB. These mention the possibility of appealing to the IECEx Appeal Board. A register of complaints is kept on the Intelex intranet quality assurance system.

## Impartiality

Impartiality for the ExTL is addressed in section 4.1 of the ISO/IEC 17025 Quality Manual, and for the ExCB in section 4.2 of the Product Certification Manual. An impartiality committee meets at least two times per year. Reports of this committee have been reviewed during the assessment.

The system was found to meet the requirements of IECEx.

## Active involvement in development of Decision Sheets

It is an informal system between ExTL and ExCB. The ExCB will usually seek feedback from the ExTL team and ExCB will then share their views on the UK IECEx committee.Evidence of contribution have been provided during the assessment.

## Special facts to be noted

None other than those matters identified throughout this report.

## Supporting documentation

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These are included in a site assessment report or provided separately and include:

* Details of issues raised and how these have been resolved
* Checklist for ISO/IEC 17065
* Checklist for ISO/IEC 17025
* Completed Technical Capability Document (TCD)
* Photos of the facilities/tests witnessed are included in the above TCD
* Information on competencies
* Information on contracting/subcontracting
* Assessors’ notes

## Recommendations

Based on the assessment performed on 27 to 29 April 2021 , Element Materials Technology Warwick Ltd is recommended for (continued) acceptance in the IECEx scheme as:

* An ExCB in the IECEx Certified Equipment Scheme
* An ExTL in the IECEx Certified Equipment Scheme

This is according to the scope of the standards listed in this document.

|  |
| --- |
| Bernard PIQUETTE |
| IECEx Lead Assessor |

Date: 2021.09 10

# ExCB for IECEx Certified Equipment Scheme

## Assessment references

### General references

1. IECEx 02 IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure
2. IECEx OD003-2 Assessment, surveillance assessment and re-assessment of ExCBs and ExTLs operating in the IECEx 02, IECEx Certified Equipment Scheme
3. ISO/IEC 80079-34 Explosive atmospheres – Part 34: Application of quality systems for equipment manufacture
4. IECEx OD 009 Issuing of CoCs, ExTRs and QARs
5. IECEx OD 025 Guidelines on the Management of Assessment and Surveillance programs for the assessment of Manufacturer’s Quality Systems in accordance with the IECEx Scheme
6. IECEx OD 026 IECEx Certified Equipment Scheme – Guidelines for the qualification of Lead Auditor and Auditors, in accordance with the IECEx System
7. ISO/IEC 17065 General requirements for bodies operating product certification systems Conformity assessment — Requirements for bodies certifying products, processes and services
8. IECEx OD 107 Harmonised check list for certification bodies ISO/IEC 17065
9. IECEx OD 060 IECEx Guide for Business Continuity – Management of Extraordinary Circumstances or Events Affecting IECEx Certification Schemes and Activities
10. IECEx Technical Capability Document (TCD)
11. ExTAG decision sheets (DSs)

NOTE The latest editions of the above documents were applied, unless otherwise specified

### Additional references applied for this assessment

OD 060 IECEx Guide for Business Continuity – Management of Extraordinary Circumstances or Events Affecting IECEx Certification Schemes and Activities

OD 280 IECEx Certified Equipment Scheme – Guide to Certification of Nonelectrical Equipment and Protective Systems

## ExCB persons interviewed

|  |  |
| --- | --- |
| Name | Position |
| Simon Barrowcliff | General Manager, Certification and Approvals (ExCB) |
| Alan Dearden | Senior Certification Engineer |
| Stephen Winsor | Certification Manager |
| Keith Wright | Quality Manager |
| Brian Lythgoe | Factory Auditor |

## Associated ExTL(s)

The only active ExTL is the internal ExTL.

## Associated certification functions

Element also operates under the IECEE CB scheme.

## National marks and certificates

Element is a UK approved body under the UKCA scheme for Ex equipment (AB 0891). Via its sister company in the Netherlands, Element is also an ATEX Notified body (NB 2812). Prior to 31 December 2020, Element in the UK was also an ATEX Notified body (NB 0891).

## Standards accepted

See Annex A of this report

## National differences to IEC standards

National differences to IEC standards are those for the United Kingdom differences listed in the latest version of the IECEx System Bulletin.

## Organisation

### Names, titles and experience of the senior executives

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience (years) |
| Stephen Winsor | Certification Manager | 20 years |
| Simon Barrowcliff | General Manager, Certification and Approvals (ExCB) | 35 years |

### Name, title and experience of the quality management representative

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience (years) |
| Keith Wright | Quality Manager | 30 years |

### Name and title of signatories for certification

|  |  |  |
| --- | --- | --- |
| Name | Title | Comments |
| Simon Barrowcliff | General Manager, Certification and Approvals (ExCB) | 35 years |
| Alan Dearden | Senior Certification Engineer | 35 years |
| Stephen Winsor | Certification Manager | 20 years |

### Other employees in ExCB activity

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience in Ex (years) |
| Damian Broadley | Senior Factory Auditor | 8 years |
| Brian Lythgoe | Factory Auditor | 5 years |
| Ismail Bashir | Associate Certification Engineer | <1 year |

## Organizational structure

See Annexes B and C.

## Indemnity insurance

Element Material Technology has indemnity insurance with value of 5,000,000 £ which is worldwide and is valid until 27 February 2022. The current certificate was viewed and seen to be satisfactory.

## Resources

Element Material Technology has the necessary resources, including well experienced competent staff and appropriate procedure to carry out the activities of an ExCB.

.

## Committees (such as governing or advisory boards)

The ExCB has an external impartiality safeguarding committee which includes trade association members with direct links to Ex industries in the UK.

The last meeting of the body took place via conference call in 2020. The minutes of the meeting were reviewed and found to meet the requirements of IECEx

## Certification operations

### National approval/certification methods

The ExCB is also an Approved Body under the UKCA Ex Regulations and a UKAS accredited Certification Body.

### Certification policy

Certification Policy is contained within the Product Certification Manual. This policy meets the requirements of IECEx.

### Application for certification

All applications for EX certification are made using form CSF-351. The normal sequence for dealing with applications is as follows: quote from Element salesman, acceptance by client and provision of purchase order, completion and application form by client, contract review by Element, execution of evaluation activities (assessment, testing and manufacturing audit), review and approval of ExTR by ExTL and endorsement by ExCB, review and approval of QAR/QAN by ExCB, and final review and certification decision by ExCB. IECEx certificates are issued by making them 'current' on the IECEx online certification system, together with associated ExTRs and QAR. A PDF copy of IECEx certificate is provided to client with associated reports and electronically stamped certification drawings.

### Certification decision

The certification process is covered by procedure CSP-002 and documented for each project within the CTS/ATS project tracking system. The process has requirements to ensure that anyone who has been involved in the assessment and testing process is not involved in certification. The procedures meet the requirements of IECEx

### Suspension and cancellation of certificates

Termination, reduction, suspension or withdrawal of certification is addressed in Clause 7.11 of the Certification Manual. When a nonconformity with certification requirements is substantiated, either as a result of surveillance or otherwise, Element shall consider and decide upon the appropriate action. For this, the approach is defined in procedure CSP-045. The procedures meet the requirements of IECEx.

## Certificates issued

Number of certificates issued under for the preceding two years for each type of protection. For new applications these should be for national or regional schemes and for currently accepted bodies IECEx certificates should be shown (certificates for other schemes may also be shown):

| Standard numbers | Type of protection or other identifying information | Number of issued certificates (for last 2 years) | | Total |
| --- | --- | --- | --- | --- |
| Apr 2019 to Mar 2020 | Apr 2020 to Mar 2021 |
| IEC 60079-0 | General requirements | 35 | 34 | 69 |
| IEC 60079-1 | Ex d | 11 | 14 | 25 |
| IEC 60078-2 | Ex p | 0 | 3 | 3 |
| IEC 60079-7 | Ex e | 3 | 5 | 8 |
| IEC 60079-11 | Ex i | 24 | 18 | 42 |
| IEC 60079-15 | Ex n | 4 | 2 | 6 |
| IEC 60079-18 | Ex m | 1 | 0 | 1 |
| IEC 60079-26 | EPL Ga | 1 | 2 | 3 |
| IEC 60079-28 | Ex Op | 8 | 6 | 14 |
| IEC 60079-31 | Ex t | 3 | 5 | 8 |
| ISO 80079-36 | Non-electrical general requirements Ex h | 2 | 2 | 4 |
| ISO 80079-37 | Non-electrical Ex c, Ex b, Ex k | 2 | 2 | 4 |
| TS IEC 60079-46 | Ex assemblies | 0 | 2 | 2 |

NOTE Above include certificates to IEC 60079-0 unless otherwise shown

## National accreditation

Element Material Technology has an accreditation from UKAS to ISO/IEC 17065 as a certification body which includes all standards listed in the scope except IEC TS 60079-46 and IEC 60079-6 which should be added to UKAS ISO 17065 flexible scope.

The UKAS (national) accreditation certification for ISO/IEC 17065 is shown in Annex D.

## Assessment of manufacturers and issue of QARs

Assessment of manufacturing is governed by procedure CSP-004.

UKCA for Ex and IECEx QAN/QAR planning is mainly controlled by Damien Broadley and Stephen Winsor. A master list of the issued ATEX / IECEx certificates is maintained on a spreadsheet which shows basic information including who holds the certificate and when the expiry date is. This information is used to initiate the planning of the QAN/QAR audits by initiating contact with the customer to see if the audit is required.

Procedure CSP-048 has been developed to cover the management of extraordinary events including the provisions of OD060.

The procedures and reports reviewed were found to meet the requirements of IECEx.

## Comments (including issues found during assessment)

Issues were raised during the site assessment requiring action. These were cleared to the satisfaction of the assessment team.

These included:

• scope of accreditation

• Surveillance of Certificates

# ExTL for IECEx Certified Equipment Scheme

## Assessment references

### General references

1. IECEx02 IECEx Certified Equipment Scheme covering equipment for use in explosive atmospheres – Rules of Procedure
2. IECEx OD003-2 Assessment, surveillance assessment and re-assessment of ExCBs and ExTLs operating in the IECEx 02, IECEx Certified Equipment Scheme
3. IECEx OD009 Issuing of CoCs, ExTRs and QARs
4. ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories
5. IECEx OD 018 Harmonised check list for testing and calibration laboratories ISO/IEC 17025
6. IECEx TCD 60079, ISO 80079 Series and ISO 16852 Technical Capability Document
7. ExTAG decision sheets (DSs)
8. IECEx OD 202 IECEx Certified Equipment Scheme – IECEx Proficiency Testing Program

NOTE The latest editions of the above documents were applied, unless otherwise specified.

### Additional references applied for this assessment

OD 060 IECEx Guide for Business Continuity – Management of Extraordinary Circumstances or Events Affecting IECEx Certification Schemes and Activities

OD 280 IECEx Certified Equipment Scheme – Guide to Certification of Nonelectrical Equipment and Protective Systems

## ExTL persons interviewed

|  |  |
| --- | --- |
| Name | Position |
| Ewan Gadsby | Operations Manager, Ex |
| Negar Noroozikia | Test Engineer |
| Robert Mclaughlin | Test Engineer |
| Keith Wright | Quality Manager |

## Associated ExCB(s)

The ExTL is integral with the Element Materials Technology Warwick Ltd ExCB . The ExTL is independent of manufacturers, sellers and users of certified products.

## Organisation

### Names, titles and experience of the senior executives

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience (years) |
| Ewan Gadsby | Operations Manager, Ex | 10 years |
| Chris Rouse | General Manager, Connected Technologies (ExTL) | 25 years |

### Name, title and experience of the quality management representative

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience (years) |
| Keith Wright | Quality Manager | 30 years |

### Other employees in ExTL activity

|  |  |  |
| --- | --- | --- |
| Name | Title/responsibility | Experience in Ex (years) |
| Rob Pellizze | Contract Engineer | 25 years |
| Robert Mclaughlin | Test Engineer | 6 years |
| Negar Noroozikia | Test Engineer | 5 years |
| Andy Norris | Test Technician | 8 years |
| Reece Brighouse | Associate Test Engineer | 2 years |

## Organizational structure

The ExTL is part of the testing business at Element Materials Technology. See Annex C.

## Resources

Element Materials Technology has the necessary resources in facilities, equipment and staff to be able to carry out testing to the standards in the scope.

Element Materials Technology maintain a comprehensive competency matrix for the various testing capabilities.

## Test reports issued

Number of test reports (ExTRs) issued under for the preceding two years for each type of protection. For new applications these should be for national or regional schemes and for currently accepted bodies IECEx ExTRs should be shown (test reports for other schemes may also be shown):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Standard numbers | Type of protection or other identifying information | Number of issued reports (ExTRs) (for last 2 years) | | | Total |
| Apr 2019 to Mar 2020 | Apr 2020 to Mar 2021 |  | |
| IEC 60079-0 | General requirements | 35 | 34 | 69 | |
| IEC 60079-1 | Ex d | 11 | 14 | 25 | |
| IEC 60078-2 | Ex p | 0 | 3 | 3 | |
| IEC 60079-7 | Ex e | 3 | 5 | 8 | |
| IEC 60079-11 | Ex i | 24 | 18 | 42 | |
| IEC 60079-15 | Ex n | 4 | 2 | 6 | |
| IEC 60079-18 | Ex m | 1 | 0 | 1 | |
| IEC 60079-26 | EPL Ga | 1 | 2 | 3 | |
| IEC 60079-28 | Ex Op | 8 | 6 | 14 | |
| IEC 60079-31 | Ex t | 3 | 5 | 8 | |
| ISO 80079-36 | Non-electrical general requirements Ex h | 2 | 2 | 4 | |
| ISO 80079-37 | Non-electrical Ex c, Ex b, Ex k | 2 | 2 | 4 | |
| TS IEC 60079-46 | Ex assemblies | 0 | 2 | 2 | |

## National accreditation

Element Materials Technology has accreditation from UKAS to ISO/IEC 17025:2017 to provide testing.

The certificate covers all standards as shown in the scope in this report. except IEC 60079-6 which should be added to UKAS ISO 17025 flexible scope

The UKAS (national) accreditation certification for ISO/IEC 17025 is shown in Annex E.

## Calibration

The laboratory has a system for identifying calibration items, maintains calibration procedures, and handling of test and measurement equipment. The laboratory sends most items out to an accredited calibration laboratory. All equipment is uniquely identified and this is retained throughout the life of the item in the laboratory. The equipment labelling includes the calibration status. Most items have a calibration period of one year, and records are kept for 7 years. The laboratory has appropriate facilities for avoiding deterioration, loss or damage to the calibration item during storage, handling and preparation

The Certification Management System, a selection of calibration certificates as well as calibration tags on the equipment were reviewed during the assessment and found to meet the requirements of IECEx.

## Tests witnessed during the assessment visit

The following tests were witnessed during the assessment visit:

|  |  |  |  |
| --- | --- | --- | --- |
| Standard and edition | Clause number | Test | Comments |
| IEC 60079-0: 2017 General Requirements | 26.13 | Surface resistance test of part of enclosure of non-metallic enclosure | Stripes painted on flat surface, calibrated resistance meter used, method acceptable |
|  | 26.4.5 | Degree of protection (IP) by enclosures | acceptable |
|  | 26.14 | Measurement of capacitance | acceptable |
| IEC 60079-1: 2014 Flameproof enclosures ‘d’ | 15.2.2 / 15.2.3 | Determination of explosion pressure (reference pressure) / Overpressure test | Gas concentration controlled by calibrated O2 analyser  acceptable |
|  | 15.3 | Test for non-transmission of an internal ignition | After the test, Ignition of the outside atmosphere -acceptable |
| IEC 60079-7: 2015 Increased Safety ‘e’ | 6.1 | Dielectric strength | acceptable |
| IEC 60079-11: 2011 Intrinsic Safety ‘i’ | 10.1 | Spark ignition test | STA demonstrated with 21% hydrogen. 95mH inductance checked before test. 24V, 30mA ignition at 29 revolutions, acceptable |
|  | 10.5.3 | Spark ignition and surface temperature of cells and batteries | acceptable |
| IEC 60079-18: 2014 Encapsulation | 8.1.2 | Dielectric strength | Test done using a climatic chamber -acceptable |
| IEC 60079-15: 2017 Type of protection “n” | 11.2.3 | Leakage tests on sealed devices | No bubbles Acceptable |
| IEC 60079-31: 2013 Protection by enclosure “t” | 6.1.2 | Thermal tests | acceptable |

## Participation in IECEx Proficiency Testing Programs

Program: PTB Ex PT Scheme <note if involved in any other program>

|  |  |  |
| --- | --- | --- |
| Year(s) of participation | IECEx Proficiency Testing program | General information about results |
| 2011 | Program 1 "Explosion pressure" | Satisfactory |
| 2011 | Program 2 "Spark ignition" | Satisfactory |
| 2013 | Program 3 "Flame Transmission" | Satisfactory |
| 2013 | Program 4 "Temperature Classification" | Satisfactory |
| 2015 | Program 5 "Electrostatic Charge" | Satisfactory |
| 2015 | Program 6 "Intrinsic Safety" | Satisfactory |
| 2017 | Program 7 "Explosion Pressure" | Satisfactory |
| 2017 | Program 8 "Pressurized Enclosure" | Satisfactory |

## Comments (including issues found during assessment)

Issues were raised during the site assessment requiring action. These were cleared to the satisfaction of the assessment team.

These included:

* scope of accreditation
* internal audit
* work instruction
* filling of ExTR
* test consumables

# Annexes

1. Scope for IECEx Certified Equipment Scheme
   1. Current standards

| Number | Title | Comments |
| --- | --- | --- |
| IEC 60079-0  Edition 7.0 | Explosive atmospheres - Part 0: Equipment - General requirements |  |
| IEC 60079-1  Edition 7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof  enclosures “d” |  |
| IEC 60079-2  Edition 6.0 | Explosive atmospheres - Part 2: Equipment protection by pressurized  enclosure “p’ |  |
| IEC 60079-6  Edition 4.1 | Explosive atmospheres - Part 6: Equipment protection by oil immersion “o” |  |
| IEC 60079-7  Edition 5.1 | Explosive atmospheres - Part 7: Equipment protection by increased  safety "e" |  |
| IEC 60079-11  Edition 6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i” |  |
| IEC 60079-15  Edition 5.0 | Explosive atmospheres – Part 15: Equipment protection by type of protection "n" |  |
| IEC 60079-18  Edition 4.1 | Explosive atmospheres – Part 18: Equipment protection by encapsulation “m” |  |
| IEC 60079-26  Edition 3.0 | Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga |  |
| IEC 60079-28  Edition 2.0 | Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation |  |
| IEC 60079-31  Edition 2.0 | Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t" |  |
| IS0 80079-36  Edition 1.0 | Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements |  |
| ISO 80079-37  Edition 1.0 | Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres – Non electrical type of protection constructional safety ”c” control of ignition source ”b”, liquid immersion ”k” |  |
| IEC TS 60079-46  Edition 1.0 | Explosive atmospheres – Part 46 - Equipment assemblies |  |

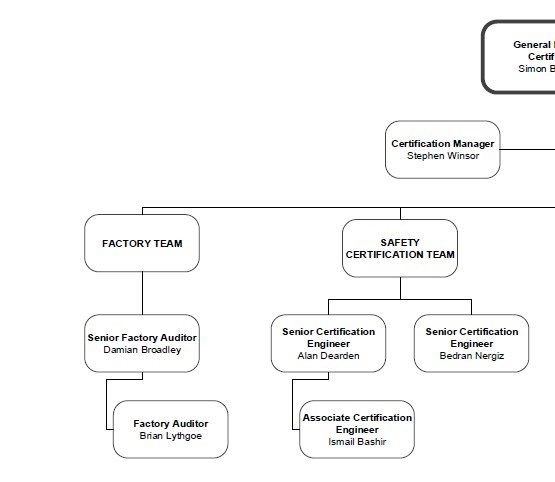
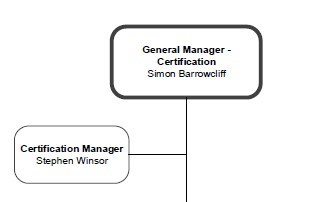
* 1. Superseded standards

The following superseded standards may form part of a body’s scope, generally for historical reasons.

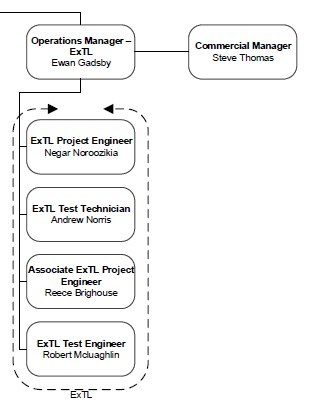
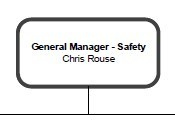
| Number | Title | Comments |
| --- | --- | --- |
| IEC 60079-27  Edition 2.0 | Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO) |  |
| IEC 61241-0  Edition 1.0 | Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements |  |
| IEC 61241-1  Edition 1.0 | Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosure “tD” |  |
| IEC 61241-4  Edition 1.0 | Electrical apparatus for use in the presence of combustible dust - Part 4: Protection by pressurization "pD" |  |
| IEC 61241-11  Edition 1.0 | Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD' |  |
| IEC 61241-18  Edition 1.0 | Electrical apparatus for use in the presence of combustible dust - Part 18: Protection by encapsulation "mD" |  |
| IECEx DS2015/001A  2015 10 09 | Equipment assemblies |  |

1. Overall Organisation Chart
2. Organisation Chart of ExCB/ExTL/ATF

**ExCB**



**ExTL**



1. Accreditation Certificate for ISO/IEC 17065



1. Accreditation Certificate for ISO/IEC 17025

