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

**TITLE: IECEx Assessment Report for the acceptance of** **SIRIM QAS International Sdn. Bhd. , to become an Accepted Ex Certification Body, ExCB, within the IECEx Equipment Scheme, 02.**

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

**INTRODUCTION**

This document contains the IECEx Assessment Report for the acceptance of SIRIM QAS International Sdn. Bhd, SIRIM, which is currently an Approved IECEx Certification Body(ExCB) in the IECEx Certified Service Facility Scheme,03, and an Accepted Ex Certification Body (ExCB) for the IECEx 05 Certificate of Personnel Competencies Scheme (CoPC) to also become an IECEx Certification Body within the IECEx Scheme, 02.

This document provides a report of the formal IECEx assessment of SIRIM and is now issued for voting by ExMC.

***This document is hereby submitted for ExMC approval via correspondence using the IECEx on-line voting system.  ExMC Members are requested to submit their vote via the IECEx On-line*** [***Ballot System***](https://www.iecex.com/ballot) ***by the closing date 21 04 16***

***Please refer to OD 050 for guidance on the “IECEx On-line voting system.”***

***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 IECEx Assessment Procedures of

1. Operational Document IECEx OD003-2 for the Certified Equipment Scheme
2. Operational Document IECEx OD316-5 for the Certified Service Facility Scheme
3. Operational Document IECEx OD422 for the IECEx Conformity Mark Licensing System

IECEx ExCB/ExTL assessment report for SIRIM

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 |  |
| ExCB for IECEx Certified Service Facilities Scheme |  |
| ExCB for IECEx Conformity Mark Licensing System |  |

NOTE 1 ExCB - IECEx Certification Body

NOTE 2 ExTL - IECEx Testing Laboratory

## Type of assessment:

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

## Details of body

### Country

Malaysia

### Name of body

SIRIM QAS International Sdn. Bhd.

### Name and title of nominated principal contact

|  |  |  |
| --- | --- | --- |
| Name | Title | E-mail address |
| Ariza Binti Mohd Yusof (Mrs) | Head, Electrical & Electronic Certification and Inspection Section (ECIS) | arizamy@sirim.my |

## Assessment information

### Members of the assessment team

|  |  |
| --- | --- |
| Name  | Role  |
| Dr Jim Munro | IECEx Lead Assessor |

### Place(s) of assessment

Assessment was done remotely using Microsoft Teams for the following location.

|  |  |
| --- | --- |
| SIRIM QAS International Sdn. Bhd | Building 8, SIRIM ComplexNo. 1, Persiaran Dato’ Menteri,Section 2, 40700 Shah Alam,Selangor. |

### Assessment date(s)

Remote assessment conducted according to IECEx OD 060 dates were 24-26 August 2020, plus follow up reviews.

## Application information and background information on the assessment

The application from SIRIM was initially reviewed by the IECEx Secretariat before the assessment was planned.

SIRIM first applied to become an ExCB in the IECEx 02 Scheme on 13 September 2019. They elected to have a pre-assessment done first and this was done 20 to 21 November 2019 on site. As a result of that pre-assessment they submitted a revised application form on 29 January 2020 to change their proposed scope and to introduce a second ExTL to allow them to meet that scope.

Due to travel restrictions because of COVID-19, the provisions of OD 060 were utilised to carry out the initial assessment remotely with a combination of offline review of documentation and online meetings using Microsoft Teams.

In addition, SIRIM has been accepted as an ExCB in other IECEx schemes, so they have previously been looked at as part of those schemes. The following shows those schemes and the scope of SIRIM for the schemes.

**Certified Service Facility Scheme - IECEx 03**

SIRIM has been accepted in this Scheme since 2011. The following are the two standards covered.

* IEC 60079-17: Part 17: Electrical installations inspection and maintenance; and
* IEC 60079-19: Part 19: Equipment repair, overhaul and reclamation

SIRIM is the only IECEx body that has been accepted to date for IEC 60079-17.

Scope:

* 03-4 Program Inspection and maintenance (IEC60079-17)
* 03-5 Program Repair Overhaul and reclamation (IEC60079-19)
* Flameproof Enclosure "d"
* Increased Safety "e"
* Intrinsic Safety "i"
* Oil Filled "o"
* Powder filling 'q'
* Encapsulation "m"
* Other
* Pressurisation "p"
* Type of Protection "n"

**IECEx Scheme for Certification of Personnel Competencies (CoPC) – IECEx 05**

SIRIM has been accepted in this Scheme since 2013.

Scope:

* Ex 000: Basic knowledge and awareness
* Ex 001: Apply basic principles of protection in explosive atmospheres
* Ex 002: Perform classification of hazardous areas
* Ex 003: Install explosion-protected equipment and wiring systems
* Ex 004: Maintain equipment in explosive atmospheres
* Ex 005: Overhaul and repair of explosion-protected equipment
* Ex 006: Test electrical installations in or associated with explosive atmospheres
* Ex 007: Perform visual & close inspection of electrical installations in or associated with explosive atmospheres
* Ex 008: Perform detailed inspection of electrical installations in or associated with explosive atmospheres
* Ex 009: Design electrical installations in or associated with explosive atmospheres
* Ex 010: Perform audit inspection of electrical installations in or associated with explosive atmospheres

Staff involved in the above schemes will also be involved in the proposed new ExCB for IECEx 02 and so already have significant knowledge and experience in IECEx schemes, Ex equipment and standards for Ex equipment.

##  Scopes

### ExCB scope for equipment certification scheme

The following is the recommended scope for SIRIM:

| **Number**  | **Title**  | **Comments, eg if scope change** |
| --- | --- | --- |
| IEC 60079-0 Edition 7.0 | Explosive atmospheres - Part 0: Equipment - General requirements  |  |
| IEC 60079-1Edition 7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproofenclosures “d” |  |
| IEC 60079-2 Edition 6.0 | Explosive atmospheres - Part 2: Equipment protection by pressurizedenclosure “p’ |  |
| IEC 60079-7Edition 5.1 | Explosive atmospheres - Part 7: Equipment protection by increasedsafety "e" |  |
| IEC 60079-11Edition 6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i” |  |
| IEC 60079-13Edition 2.0 | Explosive atmospheres - Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v" |  |
| IEC 60079-15Edition 5.0 | Explosive atmospheres – Part 15: Equipment protection by type of protection "n" |  |
| IEC 60079-18Edition 4.1 | Explosive atmospheres – Part 18: Equipment protection by encapsulation “m” |  |
| IEC 60079-25Edition 3.0 | Explosive atmospheres – Part 25: Intrinsically safe electrical systems |  |
| IS0 80079-36Edition 1.0 | Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements |  |
| ISO 80079-37Edition 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 60079-46Edition 1.0 | Explosive atmospheres – Part 46 - Equipment assemblies |  |

Scope is proposed to be for Group II only.

NOTE 1 Standards shown with an asterisk (\*) are superseded standards

NOTE 2 Unless otherwise indicated, earlier editions of standards (even if with a different number) are considered to be covered in the above scope for the purposes of the assessment.

### ExTL scope

The following are the existing scopes for the two proposed ExTLs:

**TIIS, Japan**

IEC 60079-0: Part 0: Equipment - General requirements

IEC 60079-1: Part 1: Equipment protection by flameproof enclosures 'd'

IEC 60079-2: Part 2: Equipment protection by pressurized enclosures 'p'

IEC 60079-6: Part 6: Equipment protection by oil immersion 'o'

IEC 60079-7: Part 7: Equipment protection by increased safety 'e'

IEC 60079-11: Part 11: Equipment protection by intrinsic safety 'i'

IEC 60079-15: Part 15: Equipment protection by type of protection 'n'

IEC 60079-18: Part 18: Equipment protection by encapsulation “m”

IEC 60079-25: Part 25: Intrinsically safe electrical systems

IEC 60079-26: Part 26: Equipment with equipment protection level (EPL) Ga

IEC 60079-28: Part 28: Protection of equipment and transmission systems using optical radiation

IEC 60079-30-1: Part 30-1: Electrical resistance trace heating - General and testing requirements

IEC/IEEE 60079-30-1: Part 30-1: Electrical resistance trace heating - General and testing requirements

IEC 60079-31: Part 31: Equipment dust ignition protection by enclosure 't'

IEC 62784: Vacuum cleaners and dust extractors providing equipment protection level Dc for the collection of combustible dusts - Particular requirements

**Karandikar, India**

IEC 60079-0: Part 0: Equipment - General requirements

IEC 60079-1: Part 1: Equipment protection by flameproof enclosures 'd'

IEC 60079-2: Part 2: Equipment protection by pressurized enclosures 'p'

IEC 60079-5: Part 5: Equipment protection by powder filling 'q'

IEC 60079-6: Part 6: Equipment protection by oil immersion 'o'

IEC 60079-7: Part 7: Equipment protection by increased safety 'e'

IEC 60079-11: Part 11: Equipment protection by intrinsic safety 'i'

IEC 60079-13: Part 13: Equipment protection by pressurized room "p" and artificially ventilated room "v"

IEC 60079-15: Part 15: Equipment protection by type of protection 'n'

IEC 60079-18: Part 18: Equipment protection by encapsulation “m”

IEC 60079-25: Part 25: Intrinsically safe electrical systems

IEC 60079-26: Part 26: Equipment with equipment protection level (EPL) Ga

IEC 60079-28: Part 28: Protection of equipment and transmission systems using optical radiation

IEC 60079-30-1: Part 30-1: Electrical resistance trace heating - General and testing requirements

IEC/IEEE 60079-30-1: Part 30-1: Electrical resistance trace heating - General and testing requirements

IEC 60079-31: Part 31: Equipment dust ignition protection by enclosure 't'

IEC/TS 60079-46: Edition 1 Explosive atmospheres - Part 46: Equipment assemblies

ISO 80079-36: Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements

ISO 80079-37: Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"

# Common information

## Legal entity of body

SIRIM QAS International Sdn. Bhd. (Company No 410334 - X) is a private limited liability company incorporated under the Companies Act 1965 on 18 November 1996 and is wholly owned by subsidiary of SIRIM Berhad. SIRIM Berhad is wholly owned by the Government of Malaysia and also incorporated under the Companies Act 1965. A certified copy of the certification of incorporation for change of name in 2011 was reviewed. The registration of the company on the Registrar of Companies Malaysia website was checked and found to be “EXISTING”.

## Financial support

SIRIM operates as for-profit organisation. A dividend is paid to the Government. The “Reports and Financial Statements” dated December 2019 were reviewed during the assessment and indicated that SIRIM is a financially viable and profitable operation.

## History

SIRIM is the largest and oldest certification, inspection and testing body in Malaysia. SIRIM was incorporated as a Malaysian company in 1996. However, it has been involved in testing, inspection and certification since the early 1970s when such services were offered by a division of the Standards and Industrial Research Institute of Malaysia, SIRIM.

SIRIM has been operating ExCBs in other IECEx Schemes since 2011. See more details in 1.5.

## Documentation

### Quality manual

SIRIM operates a comprehensive Quality Management System supported by quality manuals and procedures. There is a high level Corporate Quality Manual that sits above other quality manuals for each department.

At the date of the online assessment, the relevant department manual was the Product Certification Scheme Quality Manual – PCS/QM which was at Issue 13 Revision 0, dated 1 July 2020. This manual focusses on compliance with ISO/IEC 17065.

### Procedures

There are a range of Common Quality System Procedures referred to in the quality manual relevant to the requirements of ISO/IEC 17065. These are prefixed with “CQS/PRO”. Many of these are referred to later in this document.

The following internal SIRIM operational documents are specific to the IECEx 02 Scheme and are supported by forms where needed.

EQP/PRO/01 – Procedure for handling enquiries, applications and contract review

EQP/PRO/02 – Procedure for the Issuing of IECEx Test and Assessment Report (ExTR)

EQP/PRO/03 – Procedures for the Issuing of IECEx Quality Assessment Reports (QAR)

EQP/PRO/04 – Procedures for the Issuing of IECEx Certificates of Conformity (CoC)

EQP/PRO/05 – Procedures for IECEx Unit Verification

EQP/PRO/06 – Procedures for Online Registration for IECEx Certificate of Conformity (IECEx CoC, ExTR and QAR

EQP/PRO/07 –Procedures for Surveillance Audits – Maintaining an IECEx Certificate of Conformity

EQP/PRO/08 –Procedure for the Processing of Changes to Issued IECEx Certificate of Conformity

EQP/PRO/09 –Procedure for Suspension, Cancellation and Reinstatement of Certificates of Conformity

EQP/PRO/10 –Procedure for Competence of Auditors and Technical Experts for IECEx Certified Equipment Scheme

### Work instructions

SIRIM Work Instructions relating to the IECEx 02 Equipment Scheme are incorporated into their Procedures which were found to be comprehensive and cover IECEx requirements.

### Records (including test records where relevant)

The record system includes both electronic and hard copy records with approximately 80 % in electronic format.

A pilot customer application was reviewed. This demonstrated the use of proposed IECEx records, including the application form, contract review and development of a test plan. The records shown were scans of hard copy records showing the stamp of the SIRIM person involved. It is proposed to then progress this as a job once acceptance has been obtained from IECEx.

At the time of the online assessment, the system didn’t show how archiving of records occurs or retention periods both to be in accordance with OD 207. Procedures were subsequently revised to address this issue and were found to then meet the requirements of IECEx.

### Document change control

Document change control is addressed in CQS/PRO/01 *Document and record control.* Only the master copy is kept in hard copy. All documents available to staff are only available in an electronic version.

There are three levels of documents; 1,2 and 3 – see procedures CQS – common quality procedures. P – procedure. DOC – ref documents. FOR – form.

Every department has its own master list and distribution list. They also retain one hard copy master copy.

There are different approval levels, depending on nature of document.

All electronic documents are protected against change by those using them.

Access to documents is via an online system called DOCUFLO. Access to relevant documents can be controlled through this system. Staff get a notification when a document changes. They can only get access to the latest document.

The documentation system was found to meet the requirements of ISO/IEC 17065 and IECEx.

## Confidentiality

SIRIM maintains confidentiality in accordance with ISO/IEC 17065 with a signed *Undertaking of Confidentiality and Impartiality* forms. There is a form for internal staff (CQS-FOR-05-1a) and another one for external contractors (CQS-FOR-05-1b). The form is signed once, but everyone involved in a project is required to declare a conflict of interest at the beginning of the project. The system is defined in *Procedure for Maintenance of Confidentiality and Impartiality* – CQS/PRO/05.

Examples of signed forms for staff, contractors and the Certification Advisory Committee were viewed.

The system was found to meet the requirements of ISO/IEC 17065 and IECEx.

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

SIRIM and their technical staff issue various publications and papers across their operations. The official SIRIM QAS Website is <http://www.sirim-qas.com.my/>.

## Recognitions and agreements

Through the various accreditations and participation in the IECEE-CB Scheme, SIRIM’s certification activities are recognised for the purpose of obtaining national certification in various countries. As there is no separate National Scheme for Certification of Ex Equipment, IECEX Certificates of Conformity are acceptable in Malaysia.

## Internal audit

SIRIM operate an Internal Audit process according to *Internal Audit Procedure* – CQS/PRO/02. There are a number of relevant forms for internal audits including those for reports and the documenting of NCRs.

Audits are planning annually early in the year as an audit programme. The programme for 2020 was viewed at and appeared to be comprehensive.

The audit plan is agreed with the relevant section. There is a system of qualifying internal auditors. Internal auditors are drawn from product certification auditors who have a technical knowledge. Each area gets audited once a year.

A review was made by the assessor of the last audit which was undertaken by Zakaria Mohamad Nor and Fauziah Binti Ahmad (Head of Quality, Occupational Safety, Health & Environment Section) on 16 July 2020. This audit targeted the IECEx 02 scheme as set up ready for the IECEx assessment and included reference to the pre-assessment. No NCRs or formal observations were raised. But there was a summary of things being done well and areas for improvement.

The audit programme shows that they are also auditing the IECEx O3 and 05 IECEx Schemes.

There is a form for NCRs, CQS-FOR-02. There are target dates of 15 days for major and 30 days for minor for resolving NCRs. Currently progress of all NCRs is tracked manually and there is a report on that progress to the management, including the CEO. A new electronic system for the whole organisation is under development.

## Management review

SIRIM conducts a Management Review meeting at least once annually to review the quality system of SIRIM QAS International Sdn. Bhd according to *Management Review Procedure – CQS/PRO/09*.

Management Review takes part separately in each of the departments. The outcomes of each Management Review meeting are reported to the management committee which is headed by the CEO and which sits every month. The management review meetings for each department take at least a day and a half.

The last management review meeting for this department, Product, Certification and Inspection Department (PCID), was done remotely using Microsoft Teams due to COVID-19 as people were working from home. The meeting took place on 27 April and 1 May 2020. It was chaired by the Senior General Manager. There was a comprehensive attendance at the meeting. The minutes for the meeting (amounting to 17 pages) was reviewed by the assessor. The Quality Objective of obtaining IECEx 02 included in the other objectives. There was a report on progress to obtaining that objective.

The systems looks comprehensive and meets the requirements of ISO/IEC 17065 and IECEx.

## Contracting, subcontracting and witness testing

### Contracting

SIRIM is planning to use two external contractors to assist as experts for the auditing of Ex manufacturers. Both staff have signed confidentiality and non-disclosure agreements and are included in the SIRIM Ex competency matrix.

The assignment of external contractors is addressed in EQP PRO 01 which contains the following statement: ‘The assignment is based on the List of Approved IECEx Auditors or List of IECEx Approved Technical Expert/Contractors being maintained by the Technical Section, and as according to the “Procedure for Competency of IECEx Auditor” defined in EQP/PRO/10.’

### Subcontracting

At the time of the online assessment, subcontracting by the ExTL was not addressed in a relevant procedure, noting that the ExCB has a responsibility to gain the agreement of the customer. Procedures were subsequently revised to address this issue and were found to then meet the requirements of IECEx.

### Witness testing

At the time of the online assessment, witness testing was not addressed in a relevant procedure. Procedures were subsequently revised to address this issue and included relevant references to OD 024. They were found to then meet the requirements of IECEx.

## Training and competence

Training and competence requirements for SIRIM IECEx auditors are detailed in EQP/PRO/10 and in EQP/DOC/10-1 C*riteria for qualification of auditors for iecex certified equipment scheme.* The requirements are based on IECEx OD 026. The auditors, including lead auditors, used are already experienced auditors in other product certification schemes. The accreditation body witnesses auditors each year as part of the assessment process for accreditation. An example of an accreditation body report was viewed during the assessment. At the time of the online assessment no lead auditors had been appointed. Subsequently two lead auditors were appointed and thus addressing this issue to the satisfaction of the assessment team.

All staff bring Ex and IECEx experience through their involvement in the IECEx 03 and 05 schemes. To further develop this experience and make it relevant to the IECE 02 scheme, a training program has been implemented involving inhouse and external training. The external training has included

 training of staff at the proposed TIIS ExTL and similar training with the Karandikar ExTL was done remotely on 3-5 August 2020 due to the COVID-19 restrictions on travel.

Muhamad Kamal Bin Sabran and Muhammad Nazif Bin Zakaria are the only two members of staff appointed as ExTR reviewers. They have also been appointed as QAR reviewers. They have many years of Ex experience and are both used in the accepted IECEx ExCBs for IECEx 03 and IECEx 05.

Interviews were carried by the assessor with a selection of the staff and contractors planned for activities of the proposed ExCB, taking into account the Ex competency matrix, which includes details for standards for which staff were deemed competent. Staff were able to demonstrate knowledge of most standards in the scope, but a need for additional training and together with some reduction in scope was discussed. As a result of this SIRIM reduced its scope and had its staff undertake an intensive two-day training course on the remaining standards in the scope. This addressed this issue to the satisfaction of the assessment team.

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

## Complaints and appeals (including appeals to IECEx)

SIRIM operates an appeals process in accordance CQS/PRO/03 which meets the requirements of ISO/IEC 17065. The process is also referred to in the quality manual.

Customers are advised of their right of appeal to SIRIM on the corporate website. To clarify the situation regarding their right of appeal to IEC, their procedures were revised to specify that if the appeal remains unsolved, the Secretary of the Appeal Panel will advise the appellant of their right of appeal to the IEC CAB Board of Appeal. This meets the requirements of IECEx as well as ISO/IEC 17065.

## Impartiality

SIRIM has identified and analysed the threats to impartiality for the IECEx 02 Certified Equipment Scheme and presented it to the Management Review meeting.

SIRIM does not carry out activities, such as consulting, that are likely to impact on impartiality.

The main mechanism for addressing impartiality is through the Certification Advisory Committee for which there are more details in 3.12.

## Commenting on ExTAG Documents

During the process it was noted that there was an issue regarding no clear process to ensure SIRIM will provide comment on draft ExTAG documents. Their procedures were subsequently revised to include such as process and resolved the issue to the satisfaction of the assessment team.

## Special facts to be noted

Irrespective of the status of their national accreditation (See Clause 3.15), it is recommended that that a surveillance visit takes place approximately 12 months after acceptance of SIRIM as an ExCB for IECEx02. It is suggested that the timing of the assessment be coordinated with IECEx activities so that the first two certificates to be issued can be reviewed, even if only in draft form. If possible, it would be preferable for this visit to occur on site.

## 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
* Assessor’s notes

## Recommendations

Based on the assessment performed on 24-26 August 2020, SIRIM is recommended for acceptance in the IECEx scheme as:

* An ExCB in the IECEx Certified Equipment Scheme

This is according to the scope of the standards listed in this document, subject to resolution of the issues found during the assessment).

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| --- |
| **Dr Jim Munro** |
| IECEx Lead Assessor |

Date: 11 February 2021

# ExCB 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. 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 Edition 1, Explosive atmospheres – Part 34: Application of quality systems for equipment manufacture
4. OD009 Issuing of CoCs, ExTRs and QARs
5. IECEx Document 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. OD0026 IECEx Certified Equipment Scheme – Guidelines for the qualification of Lead Auditor and Auditors, in accordance with the IECEx System
7. ISO/IEC 17065: 2012, Edition 1, General requirements for bodies operating product certification systems Conformity assessment — Requirements for bodies certifying products, processes and services
8. IECEx Technical Capability Document (TCD)
9. ExTAG decision sheets (DSs)

NOTE The latest editions of the above documents were applied

### Additional references applied for this assessment

OD 280 IECEx Certified Equipment Scheme –Guide to Certification of Non-electrical Equipment and Protective Systems

## Candidate ExCB persons interviewed

|  |  |
| --- | --- |
| Name | Position |
| Muhammad Nazif Zakaria | Group Leader |
| Muhamad Kamal Sabran | Group Leader |
| Muhammad Azhar Md. Aris | Senior Auditor |
| Mohd Hamizi Mohd Samsi | Senior Auditor |
| Abdul Wahid Jaafar (Petronas) | Principal Engineer |
| Abd Manan Ismail (Petronas) | Principal Engineer |

## Associated ExTL(s)

SIRIM is planning to work with two ExTLs as follows:

* Technology Institution of Industrial Safety (TIIS) in Japan
* Karandikar Laboratory PVT. LTD. in India

Copies of signed agreements with each of the two bodies was provided. These were reviewed and found to meet the requirements of IECEx.

SIRIM undertook an onsite review of the TIIS as a proposed ExTL in December 2019. Due to current travel restrictions, Karandikar were checked via a number of online sessions and will be subject to an onsite visit when travel is possible. It is planned to repeat these processes in the future. As noted elsewhere, these visits are also being used as a means to improve the knowledge of SIRIM staff in relation to Ex standards.

## Associated certification functions

As noted earlier, SIRIM operates as an IECEx ExCB in the IECEx 03 and 05 schemes.

It also operates in the IECEE scheme. The section of SIRIM making this application operates this.

SIRIM operate a large number of certification schemes for Management Systems, Product Certification and Personnel Certification. These schemes utilise Malaysian standards, Regional standards, such as EN standards, and international standards.

## National marks and certificates

At present there are no detailed national laws or regulations in Malaysia addressing acceptance of certified Ex equipment for use in explosive atmospheres. However, OH&S laws do allow prosecutions to be taken where accidents occur in such locations. Hence IECEx certified equipment is permitted direct to market but is not mandated.

There is one major multi-national company that has a policy of implementing IECEx widely within its operations covering equipment, repair, competency and installation. This is proving to be a driver in adoption of IECEx in Malaysia and for SIRIM to provide IECEx certification services.

As a result of the above, although SIRIM operates as a national certification body in other areas for equipment, it does not currently operate as a certification body for Ex equipment because there is no local scheme to operate under. However, once accepted as an IECEx ExCB it will be in a position to offer IECEx certificates to manufacturers seeking to use their Ex products in Malaysia and those products will be accepted direct to market in Malaysia.

SIRIM have indicated that they are pursuing discussions with regulators with a view to making IECEx certification mandatory.

## Standards accepted

See Clause 1.6 of this report.

## National differences to IEC standards

Malaysia accepts the IEC Ex standards without modification. This is shown in the latest version of the IECEx Scheme Bulletin. This approach also facilitates their proposal to have IECEx as the only Ex certification scheme in Malaysia.

## Organisation

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience |
| Mohd Azanuddin Salleh | Chief Executive Officer  | >20 years |
| Fauziah Fadzil | Senior General Manager | >20 years |
| Ariza Binti Mohd Yusof (Mrs) | Head, Electrical & Electronic Certification and Inspection Section (ECIS) | 17 years |

###

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience  |
| Chen Seng Hock | Head, Technical SectionProduct Certification and Inspection Department | >20 years |
| Fauziah Binti Ahmad | Head, Quality, Occupational Safety, Health & Environment Section (QOSHE) | >20 years |

###

### Name and title of signatories for certification

|  |  |  |
| --- | --- | --- |
| Name | Title | Comments |
| Muhammad Nazif Zakaria | Group Leader and auditor | 10 years in Ex |
| Muhamad Kamal Sabran | Group Leader and auditor | 10 years in Ex |

###

### Other employees in ExCB activity

|  |  |  |
| --- | --- | --- |
| Name | Title | Responsibility and Experience in Ex |
| Muhammad Azhar Md. Aris | Auditor | 8 years |
| Mohd Hamizi Mohd Samsi | Auditor | 5 years |
| Abdul Wahid Jaafar | External Technical expert | >15 years |
| Abd Manan Ismail | External Technical expert | >20 years |

SIRIM uses the title “auditor” to designate any one on staff involved in the certification process, not just those involved in auditing manufacturers, although one of their roles may involve auditing of manufacturers. Technical experts are likely to be used in audits of manufacturers (see below).

The technical staff and operations of SIRIM Certification activities are supported by a range of SIRIM support services including administration, legal and finance.

## Organizational structure

Annex A shows the overall structure of SIRIM. The ExCB operation falls within the Product Certification and Inspection Department (PCID), Electrical & Electronic Certification and Inspection Section (ECIS).

The structure of the ExCB and its relationship to the ExTLs is shown an organisation chart in Annex B.

## Indemnity insurance

SIRIM holds professional indemnity insurance for RM17,000,000, valid until 30 June 2021. The certificate was reviewed during the assessment. The IECEx Certified Equipment Scheme appears on the schedule in the insurance document.

SIRIM also holds public liability insurance valid until 30 June 2021.

## Resources

The assessment team identified the following SIRIM ExCB operational internal staff and external contractors as having the appropriate competence for the IECEx 02 Certified Equipment Scheme requirements for the scope of standards shown in this report. These people are already auditors for IECEx 03.

**Internal Ex staff**

Muhammad Nazif Zakaria

Muhamad Kamal Sabran

Muhammad Azhar Md. Aris

Mohd Hamizi Mohd Samsi

**External experts**

Abdul Wahid Jaafar

Abd Manan Ismail

These external experts will also work with a lead auditor from SIRIM when auditing manufacturers.

## Committees (such as governing or advisory boards)

Impartiality is primarily addressed via the Certification Advisory Committee, the operation of which is covered in Procedure CQS PRO 08. The committee covers ISO/IEC 17065, 17021 and 17024. The board of SIRIM appoints the chairman. The composition includes a wide range of interests such as government agencies, industry associations, and consumers or users. Competencies are established for members. It is a very large committee because it covers so many schemes. The committee also has an appeal role.

The last meeting before the assessment was held on 3 December 2019. The minutes of the meeting were viewed during the assessment.

The meeting considered reports on SIRIM IECEx accepted ExCBs and an impartiality analysis from each department. A similar analysis has been carried out for IECEx 02 drawing on experience from other schemes. This including assessing a possible risk with use of contract auditors.

The use of this committee for impartiality meets the requirements of ISO/IEC 17065 and IECEx.

There is also a Board of SIRIM QAS International Sdn. Bhd.

## Certification operations

### National approval/certification methods

As noted elsewhere, there are currently no systems for issuing Ex certificates or Ex approvals in Malaysia.

### Certification policy

There is a quality policy with associated quality objectives both of which make reference to certification. The policy and objectives are included in the Corporate Quality Manual.

### Application for certification

The assessment team found the SIRIM application procedures (Document EQP/PRO/01) to meet the requirements of the IECEx 02 Scheme.

Application form EQP/FOR/01-1 is used for applicants seeking IECEx certification, ExTRs and QARs. The form includes appropriate information to enable a contract review to be performed.

The application process is addressed in Document EQP/PRO/01 P*rocedure for handling enquiries, applications and contract review*. This is supported by other procedures from the list shown in 2.4.

### Certification decision

EQP/PRO/04 P*rocedures for the issuing of IECEx certificates of conformity* addresses the process of issuing IECEx certificates based on OD 009 and clearly shows when the certification decision is taken in Step 11 by indicating that the decision is considered to be taken as defined by ISO/IEC 17065 when the IECEx certificate is made current on the website. The Certification Manager/ Deputy Certification Manager are shown as having this responsibility. Prior to this process the final ExTR and QAR are reviewed, and a Certification Panel reviews and approves the recommendations for granting certification, renewal of certification and extending the scope of certification. The role of the certification Panel is addressed in the Quality Manual and in EQP/DOC/10-2 *Certification Panel for IECEx 02 Certified Equipment Scheme*

### Suspension and cancellation of certificates

The SIRIM QM refers to “termination, reduction, suspension or withdrawal of certification” in 7.11 and notes that it will take actions in accordance with the certification scheme.

The process for “Cancellation, Suspension and Withdrawal of Certification” for IECEx Certified Ex Equipment is also addressed in procedure EQP/PRO/09. It includes appropriate reference to the IECEx 02 Rules and OD 209. It addresses the need to recommend on suspension/ cancellation/ reinstatement to IECEx to update the status on the website. There is a form for making this recommendation, EQP/FOR/09-1 and a notification form to the IECEx CoC holder, EQP/FOR/09-2. The Certification Panel shown above also has a role in this process.

The process meets the requirements for IECEx and uses appropriate IECEx terminology which is slightly different to that in ISO/IEC 17065.

## Certificates issued

As SIRIM has not previously operated a scheme for certification of Ex Equipment, there are no certificate numbers to be shown in this clause.

However, as an indication of activity and competence of SIRIM in IECEx, a review was made of certificates issued under the other IECEx Schemes for which they have been accepted, ie IECEx 03 and IECEx 05.

For IECEx 03, at the time of the assessment approximately 13 certificates (many including later issues) had been issued, including techniques Ex d, Ex e, Ex n, Ex m, Ex o, Ex q and Ex i.

For IECEx 05, 540 certificates had been issued.

So, although SIRIM have not been involved in Ex equipment certification, they can demonstrate experience and hence knowledge of relevant IEC standards and the IECEx System.

## National accreditation

SIRIM hold various national and international accreditations by Standards Malaysia across their various certification activities. It is also an accepted NCB (for certification) and CBTL (for testing) for the IECEE-CB Scheme.

It holds national accreditation from Standards Malaysia for ISO/IEC 17065 (Accreditation Number PC 05102004 CB01) as shown in Annex C. The accreditation body has a program of witnessing SIRIM doing assessments of external bodies.

Currently the accreditation does not cover Ex products. So, while Ex is not in the accreditation it is expected that IECEx surveillance visits will be required.

NOTE The national accreditation is checked annually by the IECEx Secretariat.

## Assessment of manufacturers and issue of QARs

SIRIM have procedures for Issuing of QARs as described in EQP/PRO/03 supported by a suite of appropriate forms. They will bring to this scheme significant experience from doing audits for IECEx 03 and for local schemes not related to Ex equipment.

## Comments (including issues found during assessment)

Issues were found during the assessment process, some of which are addressed earlier in this report. The issues included:

* Clarification in their procedures of their relationship with their ExTLs, for example on the application of OD 024
* Application of OD 207 regarding archiving records and retention periods
* The need to have at least one staff member designated as a lead auditor
* Clarification in the procedures for final review and certification decision
* Addressing the process for appeals to IEC
* Inclusion of procedures for Preventive Action
* Ensuring appropriate competence of staff

All issues were resolved to the satisfaction of the assessment team.

# Annexes

See Contents.

1. Overall Organisation Chart

**SIRIM QAS International Organisation Chart**



1. Organisation Chart of ExCB and Relationship with ExTLs

SIRIM uses the title “auditor” to designate anyone involved in the certification process, not just those involved in auditing manufacturers. Technical experts are externally contracted staff whose functions are likely to include auditing of manufacturers.

**ELECTRICAL & ELECTRONIC CERTIFICATION AND INSPECTION SECTION (ECIS)**

**(IECEx 02 CERTIFIED EQUIPMENT SCHEME)**

TECHNICAL EXPERTS

* **ABDUL WAHID BIN JAAFAR**
* **ABD MANAN BIN ISMAIL**

AUDITORS

* **MUHAMAD KAMAL SABRAN**
* **MUHAMMAD NAZIF ZAKARIA**
* **MUHAMMAD AZHAR MD ARIS**
* **MOHD HAMIZI MOHD SAMSI**

CERTIFICATION MANAGERS / DEPUTY CERTIFICATION MANAGERS

* **MUHAMAD KAMAL SABRAN**
* **MUHAMMAD NAZIF ZAKARIA**

HEAD

ELECTRICAL & ELECTRONICS

CERTIFICATION & INSPECTION SECTION

**ARIZA MOHD YUSOF**

SENIOR GENERAL MANAGER

PRODUCT CERTIFICATION & INSPECTION

DEPARTMENT

**FAUZIAH FADZIL**

TECHNOLOGY INSTITUTION OF INDUSTRIAL SAFETY (TIIS)

KARANDIKAR LABORATORIES PVT. LTD.

GROUP LEADERS

* **MUHAMAD KAMAL SABRAN**
* **MUHAMMAD NAZIF ZAKARIA**

ADMIN ASSISTANT

* **NORAINI CHE AHMAT**
* **YASMIN MOHD SHUKRI**
1. Accreditation Certificate for ISO/IEC 17065

