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

**TITLE: IECEx Assessment Report for an extension of scope for TÜV Rheinland Industrie Service GmbH, TUVR, an Accepted Certification Body (ExCB), and an Accepted Ex Testing Laboratory (ExTL), within the IECEx System Equipment Scheme 02, to include, IEC 60079-29-1 in their scope.**

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

**INTRODUCTION**

This document contains the IECEx Assessment Report for TÜV Rheinland Industrie Service GmbH, an Accepted Certification Body (ExCB), and an Accepted Ex Testing Laboratory, ExTL, within the IECEx System, Equipment Scheme 02, to include IEC 60079-29-1 within their scope.

| Number | Title |
| --- | --- |
| IEC 60079-29-1  Edition 2.0 | Explosive atmospheres - Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases |

The report is hereby submitted for voting by the 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 2020 09 17***

***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 TÜV Rheinland

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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# Assessment information

## Type of Body covered by this assessment: <retain appropriate marks>

|  |  |
| --- | --- |
| 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: <retain appropriate marks>

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

## Details of body

### Country

Germany

### Name of body

TÜV Rheinland Industrie Service GmbH

### Name and title of nominated principal contact

|  |  |  |
| --- | --- | --- |
| Name | Title | E-mail address |
| Klauspeter Graffi | Head of Certification Body | graffik@de.tuv.com |

## Assessment information

### Members of the assessment team

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

### Place(s) of assessment

|  |  |
| --- | --- |
| Am Grauen Stein  51105 Köln  Germany |  |

### 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 TUV Rheinland 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 of 3rd June 2020 and 9th June 9, 2020.

## Application information and background information on the assessment

Information relevant to the Secretariat review process: Remote assessment conducted under the provisions of IECEX OD 060, as agreed with the Secretariat

## Scopes

### Additional Standards for ExCB scope for equipment certification scheme

| Number | Title | Comments, eg if scope change |
| --- | --- | --- |
| IEC 60079-29-1  Edition 2.0 | Explosive atmospheres - Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases | Scope Extension |

### ExTL scope

The ExTL scope is the same as for the ExCB.

# Common information

## Legal entity of body

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Financial support

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## History

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Documentation

### Quality manual

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that TÜV Rheinland’s quality manual also cover the new standard listed under the scope extension request.

### Procedures

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that TÜV Rleinland’s procedures also cover the new standard listed under the scope extension request..

### Work instructions

QMA 3.103.02 -82 cover the new standard listed under the scope extension request.

### Records (including test records where relevant)

The record of the witnessed test for IEC 60079-29-1 was reviewed and found complying the IECEx requirements.

### Document change control

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Confidentiality

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

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

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Recognitions and agreements

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Internal audit

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that the audit plan for 2020 also cover the new standard listed under the scope extension request.

## Management review

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that the procedures also cover the new standard listed under the scope extension request.

## Contracting, subcontracting and witness testing

### Contracting

There is no contracting used for these standards.

### Subcontracting

There is no subcontracting used for these standards.

### Witness testing

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Training and competence

Evidence was provided of appropriate training. In addition, the competency matrices relevant to the ExCB, the ExTL were viewed and found to be appropriate.

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

## Complaints and appeals (including appeals to IECEx)

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Impartiality

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Commenting on ExTAG Documents

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Special facts to be noted

The assessment has been conducted using a video conference system;

## 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
* Completed Technical Capability Document (TCD)
* Photos of the facilities/tests witnessed are included in the above TCD
* Assessors’ notes

## Recommendations

Based on the assessment performed on 3 and 9 June 2020, TÜV Rheinland Industrie Service GmbH 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 (including the extension of scope), (subject to resolution of the issues found during the assessment).

|  |
| --- |
| Bernard Piquette |
| IECEx Lead Assessor |

Date: August 4, 2020

# 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

NOTE To be added by assessment team. For example ODs for non-electrical or Ex s where applicable.

## Candidate ExCB persons interviewed

|  |  |
| --- | --- |
| Name | Position |
| Mr Klauspeter Graffi | Head of ExCB |
| Mr Christian Mehrhoff | Assigned Certifier Head of Business Unit |
| Mr Steffen Kruse | Expert |
| Mr Wolf Rückwart | Senior Expert |
| Mr. Christian Lechtenböhmer | Head of ExTL |
|  |  |
|  |  |

## Associated ExTL(s)

The ExTL is integral with the ExCB.

## Associated certification functions

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## National marks and certificates

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Standards accepted

See clause 1.6 of this report

## National differences to IEC standards

National differences to IEC standards are those for the German differences listed in the latest version of the IECEx Scheme Bulletin.

## Organisation

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience |
| Mr Klauspeter Graffi | Head of ExCB | > 15 years |

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience |
| Dr. K. U. Harder | Global Officer Quality Manager | > 1 year |

### Name and title of signatories for certification

|  |  |  |
| --- | --- | --- |
| Name | Title | Comments |
| Mr Klauspeter Graffi | Head of ExCB | > 15 years |
| Mr Christian Mehrhoff | Assigned Certifier Head of Business Unit | > 1 year |
| Mr. Andreas Maschke | Deputy Head of ExCB | > 15 years |

### Other employees in ExCB activity

|  |  |  |
| --- | --- | --- |
| Name | Title | Responsibility and Experience in Ex |
| Mr Ralf Biegalla | Auditor | > 20 years |
| Mr Peter Grote | Auditor | > 15 years |
| Mr Gianluca Marradi (Italy) | Auditor | > 5 years |
| Mr Hubbig (USA) | Auditor | > 7 years |
| Mr Holger Wegener | Auditor | > 15 years |
| Ms Anke Weichert | Auditor | > 13 years |
| Mr Zhang, Xiaolong (China) | Auditor | > 7 years |
| Mr Guruprasad BR (India) | Auditor | > 3 years |

## Organizational structure

See Annex A

## Indemnity insurance

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Resources

Adequate staffing resources are available.

## Committees (such as governing or advisory boards)

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Certification operations

### National approval/certification methods

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

### Certification policy

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

### Application for certification

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that the procedures also cover the new standards listed under the scope extension request.

### Certification decision

While covered in the assessment reported in ExMC/1219/DV, it was confirmed that the procedures also cover the new standards listed under the scope extension request.

### Suspension and cancellation of certificates

Not part of this assessment as this is a scope extension assessment. This was covered in the last assessment; refer to Assessment Report ExMC/1219/DV.

## Certificates issued

Number of certificates issued under for the preceding four 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): <Table to be initially completed by body being assessed>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Standard numbers | Type of protection or other identifying information | Number of issued certificates (for last 4 years) | | | | Total |
|  |  | 2016 | 2017 | 2018 | 2019 |  |
| IEC 60079-29-1 | Performance requirements of gas detectors | 0 | 0 | 0 | 3 | 3 |
|  |  |  |  |  |  |  |

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

## National accreditation

TÜV Rheinland has DAKKS accreditation to ISO/IEC 17065 as a certification body. The certificate is valid until May 2023 and a copy is shown at Annex B of this report.

## Assessment of manufacturers and issue of QARs

TÜV Rheinland carries out QAR assessments to support IECEx Certification and national standards.

## Comments (including issues found during assessment)

The staff interviewed had a good understanding of the standard. There was one issue however related to the competence matrix. This issue was resolved to the satisfaction of the assessor.

# 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 17025:2005 Edition 2, General requirements for the competence of testing and calibration laboratories
5. IECEx Technical Capability Document (TCD)
6. ExTAG decision sheets (DSs)
7. OD 202 IECEx Certified Equipment Scheme – IECEx Proficiency Testing Program

NOTE The latest editions of the above documents were applied.

### Additional references applied for this assessment

There are no additional references

NOTE To be added by assessment team. For example ODs for non-electrical or Ex s where applicable.

## Candidate ExTL persons interviewed

|  |  |
| --- | --- |
| Name | Position |
| Mr Wolf Rückwart | Senior Expert Head of Business Unit for Laboratories |
| Mr Dirk Wilczek | Technician |
| Mr Steffen Kruse | Expert |

## Associated ExCB(s)

The ExTL is integral with the ExCB .

## Organisation

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience |
| Mr Wolf Rückwart | Senior Expert Head of Business Unit for Laboratories | >25 years |

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

|  |  |  |
| --- | --- | --- |
| Name | Title | Experience |
| Dr. K. U. Harder | Global Officer Quality Manager | > 1 year |

### Other employees in ExTL activity

|  |  |  |
| --- | --- | --- |
| Name | Title/responsibility | Experience in Ex |
| Mr Dirk Wilczek | Technician | >14 years |
| Mr Steffen Kruse | Expert | >1 year |

## Organizational structure

See Annex A

## Resources

Adequate staffing resources are available. Test equipment is available for all tests in the standards. The environmental conditions in the laboratory are appropriate for the testing. Details of the above are documented in the Technical Capability Document which has been updated for this scope extension.

## Test reports issued

Same as for the ExCB (See 3.14)

## National accreditation

TÜV Rheinland has DAKKS accreditation to ISO/IEC 17025 as a Testing Laboratory. The certificate is available on web site of Dakks and a copy is shown at Annex C of this report.

## Calibration

All equipment viewed for the test witnessed were in calibration.

## Tests witnessed during the assessment visit

Live video streaming was used to witness the following tests as part of the assessment:

|  |  |  |  |
| --- | --- | --- | --- |
| Standard and edition | Clause number | Test | Comments |
| IEC 60079-29-1:2016 | 5.4.15 | Time of response for an apparatus sampling by diffusion |  |

Test reports for national purpose have been reviewed and found complying the standard.

## Participation in IECEx Proficiency Testing Programs

There is currently no relevant proficiency testing program for IEC 60079-29-1

## Comments (including issues found during assessment)

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

These included:

• competence matrix

• Temperature of the test gas

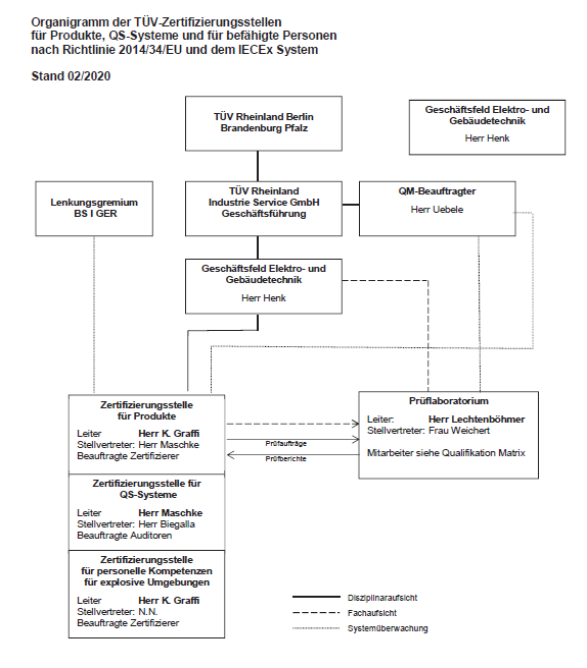
# Annexes

See Contents. (add/modify or delete annexes as necessary). Please note the following instructions for the IEC template:

NOTE When creating a new annex **DO NOT** type the word Annex, just create a new empty page and then apply the styles ANNEX title to the first (empty) line. The word "Annex" followed by the letter "A" or "B", etc will automatically appear.

**TIP:** When typing annex titles, separate the lines of the title by "shift+return"

1. Organisation Chart of ExCB and ExTL



1. Accreditation Certificate for ISO/IEC 17065



1. Accreditation Certificate for ISO/IEC 17025

