



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

Circulation to: Ex Management Committee, ExMC

TITLE: IECEx Re-Assessment Report for the continued acceptance of the Slovenian Institute of Quality and Metrology, SIQ Ljubljana, as an Accepted Ex Test Laboratory (ExTL) and an Extension of Scope to include the following Standards, IEC 60079-31 (Dusts), IEC 60079-35-1 and IEC 62013-1 (Caplights) within their scope.

INTRODUCTION

This document contains the IECEx scheduled 5 Year Re-assessment Report for SIQ, an Accepted IECEx Test Laboratory, (ExTL). During the re-assessment visit an assessment for an Extension of Scope to include IEC60079-31, 60079-35-1 and 62013-1 was also carried out.

ExMC Members are asked to vote on the IECEx Assessment Team's recommendation for the scope extension of the Accepted ExTL, SIQ, to include the following Standards, IEC 60079-31,(Dusts) IEC 60079-35-1 and IEC 62013-1 (Caplights) within their scope.

Please complete and return the completed voting form, separate Word Document, for the scope extension to the Secretariat by –

2012 12 31

**Your speedy response to the voting process will be very much appreciated.
Contact details:**

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IECEX ASSESSMENT REPORT FOR Slovenian Institute of Quality and Metrology (SIQ Ljubljana) (IECEX TEST LABORATORY ExTL)

Type of Assessment: (please mark)

Initial assessment for Candidate ExTL

Re-Assessment of ExTL X

Scope Extension of ExTL X

1. OBJECT AND FIELD OF APPLICATION

1.1. *Country:*

SLOVENIA

1.2. *Name of Candidate TL*

Slovenian Institute of Quality and Metrology (SIQ Ljubljana)

1.3. *Members of the Assessment Team*

Xu Jianping, Team Leader
Herbert Peters, Expert Assessor

1.4. *Place and Date of Assessment*

Slovenian Institute of Quality and Metrology (SIQ Ljubljana)

Trzaska cesta 2
SI-1000 Ljubljana
SLOVENIA
and
Podvine 36,
SI-1410 Zagorje ob Savi,

19th - 20th April, 2012

1.5. *Assessment References*

- i) IECEx 02 IECEx Certified Equipment Scheme - rules of procedure
- ii) IECEx OD 003 IECEx Assessment procedures
- iii) IECEx OD 009 Issuing of CoCs, ExTRs and QARs
- iv) ISO/IEC 17025:2005
- v) IECEx Technical Guidance Documents (TGDs)



- vi) ExTAG decision sheets (DSs)
- vii) SIQ's application of scope for the re-assessment by email dated 1 March 2012 and 19 April 2012

1.6. Scope of Assessment

Number	Title
60079-0 Edition 6	Explosive atmospheres - Part 0: Equipment - General requirements
60079-1 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
60079-7 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
60079-11 Edition 6	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
60079-18 Edition 3	Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"
60079-31 Edition 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" Scope extension
62013-1 Edition 2	Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion Scope extension
60079-35-1 Edition 1	Explosive atmospheres - Part 35-1: Caplights for use in mines susceptible to firedamp - General requirements - Construction and testing in relation to the risk of explosion Scope extension

1.7. Candidate TL Persons Interviewed

Name	Position
Igor Likar	Managing Director
Alja Pregl	Certification and Quality Manager
Andrej Rakuša	Technical leader of Ex laboratory

1.8. Legal Entity of The Candidate TL

SIQ was founded at the end of 1992, as the successor of the Institute of Quality and Metrology (IKM) by the Contract on foundation. SIQ is a public, non-profit-distributing institution founded according to the law on institutions (OG 12/92-1).

1.9. Associated ExCB

The associated ExCB is integral with the ExTL at same site of SIQ Ljubljana, and has same legal identity. the Ex d testing facility is located in Podvine 36, SI-1410 Zagorje ob Savi, a part of premises of Slovenian Institute of Quality and Metrology (SIQ). It is about 60 km away from the SIQ Ljubljana and was assessed by the IECEx Assessment Team and found to meet IECEx requirements.

1.10. **Financial Support**

As a professional, independent and impartial institution, SIQ is a self-funding organization relying on the income from its testing, calibration and certification of electrical products, assessment of management systems as well as relevant training to fund its operating and investment costs. There is no financial support from government and/or other social organizations.

1.11. **History**

SIQ was founded in 1992 to succeed IKM (Institute of Quality and Metrology) with the transfer of all goods, including staff, values, rights and obligations agreed between SIQ and IKM (ratified by IKM Council on 1993-01-18). A total of over 45 years involvement in testing and certification of Electrical products, and metrology at the same premises in Ljubljana. Ex testing was commenced in the mid 1990s. Since 2002, SIQ has been becoming as an ExCB and ExTL of IECEX certified equipment scheme.

2. ORGANISATION

2.1. Names, Titles and Experience of the Senior Executives

Name	Title	Experience
Igor Likar	Managing Director	32 years at SIQ, 17 years in Ex
Alja Pregl	Certification & Quality Manager	10 years as quality manager, 5 years as certification manager
Zoran Svetik	Director of PMT (testing and measurement technologies) department	29 years at SIQ, 6 years in Ex. Detailed in CR104 (for products), also in TDEx02

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

Name	Title	Experience
Alja Pregl	Certification & Quality Manager	10 years as quality manager, 5 years as certification manager

2.3. Name and Title of Nominated Principal Contact

Name	Title	Comments
Igor Likar	Managing Director	Tel: +386 1 4778 100 Fax: +381 1 4778 444 Email: igor.likar@siq.si

2.4. Employees

Name	Title	Experience
Andrej Lukšič	Ex Test Engineer	11 years in Ex
Andrej Rakuša	Technical Leader of Ex Laboratory, Test Engineer	6 years in Ex; 2 years for auditor
Matej Debenc	Ex Test Engineer	5 years in Ex; 1.5 years for auditor
Štefan Krek	Ex Test Engineer	2 years in Ex
Franc Cencelj	Ex Test Engineer	44 years in Ex

Note: Refer to clause 3 of this report.

2.5. Organizational Structure

The overall organizational chart is shown in Annex 1.

3. RESOURCES

With exception of the subcontracted test items as indicated in the ExCB assessment report, SIQ is well equipped with necessary testing facilities. The Ex d testing facility is located in Podvine 36, SI-1410 Zagorje ob Savi, a part of premises of Slovenian Institute of Quality and Metrology (SIQ). It is about 60 km away from the SIQ Ljubljana.

There is an extensive range of procedures for support of the operation at SIQ. The total size of SIQ is just over 100 people. Nine of these have some involvement with the Ex certification and testing, in which six staff are qualified as Ex test engineers and ExTR reviewers. Because there is little Ex business currently, the staff working in ExTL also work in ExCB as ExTR approvers, manufacturer auditors, reviewers/approvers of QARs.

At the time of site assessment the assessment team noted that for compliance with the separation between testing and certification there is no proper procedure being in place to ensure that the ExTL staff do not serve on projects that they have been involved in the ExCB. This issue has been subsequently resolved to the satisfaction of the assessment team and meets IECEX requirements.

4. DOCUMENTATION

4.1. Quality Manual

Quality Manual with identification number SR001, addresses all the major quality requirements with cross reference tables for all the relevant international or regional standards. The manual is issued in Slovene and English. This latest version has the number SR001E. The Manual is available in an electronic version on the SIQ intranet and is regarded as the valid version for use.

4.2. Procedures

There are a significant number of detailed procedures dealing with the operation at SIQ. All these procedures are referenced and electronically linked in the above Quality



Manual at the end of each chapter and also within the document. Again these documents are available on the intranet.

The procedure CD306E relating to IECEx operation was reviewed during the site assessment, and found that the procedure not properly referenced to all the relevant IECEx rules, procedures, operational documents and decision sheets. This deficiency has been subsequently resolved to the satisfaction of the assessment team and meets the IECEx requirements.

4.3. Work Instructions

In addition there are work instructions/test procedures available and a range of other documentation such as guides. All those documents are accessible via a comprehensive menu system on the intranet.

The assessment noted that there are about over 10 test procedures relating to Ex field. Examples of the procedures were reviewed, and noted that the procedure TN 5214/P07 Testing on Intrinsic Safe Circuits with Spark Apparatus was referenced to an old EN standard only. This issue has been subsequently resolved.

4.4. Records

SIQ establishes suitable procedures dealing with quality records. All critical records are in hard copy, especially in the Explosion Protection Department, although increasingly SIQ is receiving documentation in electronic form. All records are retained for a minimum of 10 years at SIQ according to the procedure TD007E-13 Test Records and Test Reports.

Example of the project archive was reviewed, and found that the records are detailed, and information is sufficient to the satisfaction of the assessment team.

4.5. Document Change Control

Documents are all subject to a change control procedure. The detail is specified in Clause 4.5.9 of Quality Manual, which includes regular checks of those being used. Only documents published on the intranet are regarded as controlled for the purpose of staff use. Two hard copies of each document are signed and retained. When a document is revised an indication, such as a marginal bar, is included in the document to show where changes have occurred.

The use of the correct standard is controlled through having forms that are released according to the appropriate edition of the standard to be used. In the case of the IECEx Scheme these forms will be used in conjunction with the ExTRs. SIQ is involved with committee work for the IEC standards and so are aware when IEC standards are being changed.

4.6. Test Records

See clause 4.4 of this report.



5. TEST REPORTS

5.1. Test Reports Issued

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

Standards	Title	Number of issued test reports				Total
		2009	2010	2011	2012	
60079-0	Explosive atmospheres - Part 0: Equipment - General requirements	Part 0 included in numbers below and in addition to that (partial tests)				
			1	6	2	9
60079-1	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"	4	5	3	2	14
60079-7	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	0	2	3	2	7
60079-11	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	0	0	3	2	5
60079-18	Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"	0	1	2	0	3
60079-31	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"	0	0	0	0	0
62013-1	Caplights for use in mines susceptible to firedamp - Part 1: General requirements - Construction and testing in relation to the risk of explosion	0	0	0	0	0
60079-35-1	Explosive atmospheres - Part 35-1: Caplights for use in mines susceptible to firedamp - General requirements - Construction and testing in relation to the risk of explosion	0	0	0	0	0

6. CALIBRATION

There is a general policy on calibration specified in clause 7.7 of quality manual, and the detailed process is described in MD002E Calibration and test equipment. SIQ operates as a calibration laboratory. Majority of measuring equipment is calibrated in their accredited laboratories. Each piece of measuring equipment has valid calibration status. In some cases prior to use equipment is compared to calibrated equipment to check if readings are in prescribed range.



The details regarding calibration of equipment is stated in internal document TNEx12, where type and period of calibration is stated for each piece of equipment in use.

Examples of calibration certificates were reviewed and satisfactory.

7. CONFIDENTIALITY

There is a statement in quality manual that stipulates all personnel including the internal staff as well as the outside members of Boards listed in clause 4 of this report are required to sign an agreement on declaration of confidentiality (Statutory Statement). Personnel are also trained to ensure they follow the confidentiality requirements to protect the integrity and reputation of the business. Examples of the written agreement and training records were reviewed and satisfactory.

8. NATIONAL ACCREDITATION

SIQ holds a national accreditation for testing laboratory (LP-009) according to SIST EN ISO/IEC 17025:2005 from Slovenian Accreditation (SA), a member of ILAC for calibration and testing.

In the past the accreditations for testing (DAP-PL-3419.00) in the Ex field were achieved from DAP in Germany. According to the new EU Decree all accreditations in the Ex field were transposed to Slovenian Accreditation (SA), a signatory of Multilateral Agreements of the European Co-operations of Accreditation (EA).

The current SA accreditation certificate for testing laboratory of SIQ is attached in Annex 2 of this report. It is noted that the accreditation scope covers all the standards listed in Clause 1.6 of this report.

9. RECOGNITION AND AGREEMENTS

SIQ has a wide range of recognitions and agreements, mainly including:

- Notified Body under ATEX Directive and other 9 Directives
- IECEE CB Scheme as an NCB and CBTL
- European certification scheme (ENEC)
- Member of IQNet for management systems
- Member of the European CENELEC Certification Agreement

10. INTERNAL AUDIT AND PERIODIC REVIEW

The requirements for internal audit are specified in general procedure SN012 Internal Audits. Auditing is done at least once a year. The plan of internal audit is normally released at the middle of April. The latest audit was conducted on 15 July 2011. It covers two audits, one is so-called vertical audit which is technical and the other is so-called horizontal covering general requirements of the relevant standards. There is quite a large number of staff trained and accepted for internal auditing. A comprehensive chart (SN018) shows their qualifications, training and areas that they are considered competent to audit.

The detailed processes on management review are contained in clause 4.10 of Quality Manual. The management review is specified to conduct once a year. The latest



meeting of management review was held on 22 March 2012. A documented report on management review was viewed and satisfactory.

11. COMPLAINTS AND APPEALS (Including appeals to IECEx)

Complaints are collected in each department and dealt with in accordance with procedure SN029 which also covers appeals. In addition there is a procedure CR105E that covers appeals against the decisions taken by the Certification Commission. SIQ has a Board of Appeals to which all appeals go. It was advised that there has not been any appeals in the Ex area since last IECEx assessment. The assessment team noted that there is no particular document on information for customers/applicants that includes a part on their rights of appeals to IECEx secretariat. This deficiency has been subsequently resolved.

12. SPECIAL FACTS TO BE NOTED

12.1. Supporting Documentation

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

- Details of issues raised and how these have been resolved
- Checklist for ISO/IEC 17025
- Completed TGDs for IEC 60079-0, -1, -7, -11 and -18 and dust standards
- Photos of the facilities and configurations of witness tests
- Competence matrix
- List of subcontractors

12.2. Tests Witnessed

The following tests were witnessed during the re-assessment visit:

- IP54 test to IEC60529
- Flameproof Pressure determination for any group
- Flammability test
- Temperature rise, preferably of an Ex e junction box
- Maximum temperature test on Ex m equipment

The assessment team concluded that all of the tests witnessed were successfully conducted or demonstrated in accordance with requirements of the standards and by appropriately trained and competent testing staff with required instrumentation and facilities.

13. COMMENTS (Including issues found during assessment)

A number of issues mentioned above, were raised during this re-assessment and reported to SIQ at the end of this assessment. Subsequently all the issues relating with ExTL have been resolved to the satisfaction of the assessment team and have been found to meet IECEx requirements.



Details of issues and how these have been resolved are listed in Annex B of the site assessment report.

14. RECOMMENDATION

Based on the re-assessment performed from 19th to 20th April 2012, SIQ is recommended for continued acceptance in the IECEx System as an IECEx Testing Laboratory (ExTL) according to the scope of the standards listed in Clause 1.6 of this document.

Lead Assessor
Xu Jianping

Expert Assessor
Herbert Peters

Date: 20 October 2012

List of Annexes:

1. Overall Organization Chart of SIQ
2. Accreditation Certificate according to ISO/IEC 17025

Annex 2: Accreditation Certificate according to ISO/IEC 17025



**SLOVENSKA
AKREDITACIJA**



LP-009

**akreditacijska listina
accreditation certificate**

**Slovenski inštitut za kakovost in meroslovje,
Ljubljana**

Tržaška cesta 2, 1000 Ljubljana
Preskusne in merilne tehnologije; Področje elektromagnetike

Organizacija je akreditirana pri Slovenski akreditaciji (SA), kot preskuševalni laboratorij. S to listino se priznava izpolnjevanje zahtev standarda

SIST EN ISO/IEC 17025:2005

za dejavnosti, ki so opisane v prilogi te listine, označeni z isto številko.

Datum podelitve akreditacije: 23. oktober 2000

Akreditacija je veljavna, če akreditirani organ v celoti izpolnjuje zahteve za akreditacijo, kar SA ugotavlja s postopki nadzora. Veljavnost akreditacije je mogoče preveriti na spletni strani SA, www.sa.gov.si.

Slovenska akreditacija je podpisnica sporazumov o medsebojnem priznavanju akreditacij na področju kalibracijskih in preskuševalnih laboratorijev pri Evropskem združenju za akreditacijo (EA) in pri Mednarodnem združenju za akreditiranje laboratorijev (ILAC).

The above entity has been accredited by Slovenian Accreditation (SA) as a testing laboratory. This is to signify compliance with the requirements of the SIST EN ISO/IEC 17025:2005 for the approved scope of accreditation as described in the Annex hereto marked with the same number.

Initial accreditation date: 23. oktober 2000

This accreditation shall remain in force provided that the accredited body fully complies with the accreditation requirements, which is determined by SA through surveillance. Information on current accreditation status is available at the SA website, www.sa.gov.si.

Slovenian Accreditation (SA) is a signatory of the Multilateral Agreements of the European Co-operation for Accreditation (EA) and International Laboratory Accreditation Co-operation (ILAC) for calibration and testing.

Ljubljana, 6. maj 2008



**SLOVENSKA
AKREDITACIJA**

Direktor
dr. Boštjan Godec

