



INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC SCHEME FOR CERTIFICATION TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT FOR EXPLOSIVE ATMOSPHERES (IECEx SCHEME)

Title: IECEx Assessment Report for the acceptance of *SIQ, Slovenia* as an Accepted Ex Test Laboratory (ExTL) within the IECEx Scheme

This document contains the IECEx Assessment Report for *SIQ*

Following assessment, including a site assessment, the Assessment team recommends acceptance of *SIQ* as an Ex Test Laboratory (ExTL) within the IECEx Scheme. Signed copies of the assessment report held by the secretariat.

This report has been issued for consideration during the next ExMC Meeting being held in Seoul October 2002 under Item 8 of Draft Agenda ExMC/127/DA.

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IECEX ASSESSMENT REPORT FORM (TEST LABORATORY – ExTL)

Type of Assessment:

Initial Assessment for Candidate ACB

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Surveillance Assessment for existing ACB

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1. OBJECT AND FIELD OF APPLICATION

1.1 *Country:* Slovenia

1.2 *Name of Candidate TL*

Slovenian Institute of Quality and Metrology (SIQ)

1.3 *Members Of The Assessment Team*

Mr R. Turton (EECS, GB) Team Leader

Dr U. Johannsmeyer (PTB, DE)

Mr C. Agius (IECEX Secretary)

1.4 *Place And Date Of Assessment*

Trzaska cesta 2

1000 Ljubljana

Slovenia

Site Assessors:

Mr C. Agius Lead Assessor

Dr U. Johannsmeyer

Following a review of all documentation submitted, a site assessment was conducted on 16 and 17 April 2002. A copy of the Site Assessment Report (without attachments) is included as Annex B.

1.5 *Assessment References*

Document:

- i) IECEx 02 First Edition 1995-03
- ii) IECEx Operational Document OD/003
- iii) ISO/IEC Guide 25: 1990
- iv) IECEx Technical Guidance Documents
- iv) ExTL application documents

1.6 Scope Of Application

Product Category

Standard

During the on-site visit the scope of application was reviewed and the following new scope agreed between SIQ and the site assessment team:

Product Category

Standard

General Requirements

IEC 60079-0

Flameproof Enclosures

IEC 60079-1 Excluding enclosures with plastic material

Intrinsic safety

IEC 60079-11

Increased Safety

IEC 60079-7 Excluding motors and batteries

Encapsulation

IEC 60079-18

Non Sparking

IEC 60079-15

1.7 Candidate TL Persons Interviewed

Name

Position

Mr Igor Likar

Managing Director

Mr Vojko Koron

Certification Manager

Mr Zdravko Kramar

Manager Ex Department

Mr Aleš Arnsek

Testing Engineer

Mr Franc Cencelj

Testing Engineer

Mr Andrej Luksic

Trainee Testing Engineer

1.8 Legal Entity Of The Candidate TL

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 ACB

Names of ACB

Address

SIQ has an integral ACB

Same Address

1.12 Financial Support

Self Funding

1.13 History

Founded in 1992 to succeed IKM 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 40 years involvement in testing and certification of Electrical products.

1.14 Relevant Standards

Equipment CENELEC Standards

2. ORGANISATION

2.1 Names, Titles And Experience Of The Senior Executives

Name	Title	Experience
Mr Igor Likar	Managing Director	Senior Management, more than 15 years experience in standards and certification
Mr Vojko Koron	Certification Manager	8 years experience in Quality and Certification
Mr Zdravko Kramar	Head Ex Department	More than 10 years experience in Ex testing and certification

2.2 Name, Title And Experience Of The Quality Management Representative

Name	Title	Experience
Mr Vojko Koron	Certification Manager	More than 10 years in the quality field, with formal training in Quality Management Systems, including lead assessor training

2.3 Name And Title Of Nominated Principal Contact

Name	Title
Mr Igor Likar	Managing Director

2.4 Employees

A total of 6 employees are involved in the Ex Testing operations, including Manager Ex Department and Quality Manager. Employees involved in Ex testing were assessed during the completion of IECEx Technical Guidance Documents. These completed Technical Guidance Documents have been forwarded to the IECEx Secretariat for record keeping purposes.

2.5 Organisational Structure

See Annex A of ExMC/134/R

3. RESOURCES

Total number of SIQ employees is 70. Of this 4 staff are involved in Ex Testing.

During the on-site assessment the team confirmed the availability of equipment and facilities, as defined by the IECEx Technical Guidance Documents, to conduct testing and assessment for the scope of work recommended by the Assessment Team.

4. TEST METHODS

4.1 Procedures

The on-site assessment confirmed availability of suitable and adequate test procedures and work instructions for testing. These were reviewed while compiling the TGDs

4.2 Staff Work Instructions

Same result as for 4.1 above

5. TEST REPORTS AND RECORDS

5.1 Test Reports Issued

The following table sets out the number and types of Ex TestReports issued by SIQ

Type of protection	Number of partial tests	Number of Completed tests
d	939	1
e	1201	2
i	834	4
O	3	0
p	12	0
q	4	0
m	246	2
n	0*	0*
s	53	0

* Note: equipment in type n protection was not allowed to be put in use in Slovenia in the past 2 years

5.2 Test Records

The SIQ Quality System requires retention of records, indefinitely. Records are a combination of paper copies and electronic media, however the SIQ record retention system ensures identification of records and protection of records in appropriate and secure environment.

6. CALIBRATION

As part of the Quality Management System, a sound and robust system of calibration is maintained. Calibration is conducted, internally for some instruments (by the SIQ Metrology Lab) and externally by accredited calibration facilities.

7. DOCUMENTATION

7.1 *Quality Manual*

The SIQ Quality Manual has been reviewed during the site assessment and found to fully comply with IECEx requirements. To clarify the difference between testing and certification, under the requirements of IECEx and that conducted as part of national accreditation, SIQ has developed a separate document CD 306 "Certification within the IECEx Scheme". This new document has been successfully reviewed for compliance with IECEx requirements.

7.2 *Document Change Control*

Controlled as part of the Quality Management System.

8. CONFIDENTIALITY

All SIQ staff are subjected to the strict confidentiality requirements of the SIQ organisation.

Access to test areas by non-SIQ staff is strictly regulated.

9. NATIONAL ACCREDITATION

Slovenian Accreditation SA for

- Testing for electrical safety
- Certification of Ex products (Copy of certificate, annex C)
- Type A Inspection Body
- Testing of Ex products
- Certification for electrical safety

German DAP for:

- Certification of Ex products
- Testing of Ex products
- Type A Inspection Body - Ex

Russian GOST R for:

- EMC and NIR testing

SWEDAC for:

- ISO 9000 QMS Certification
- ISO 14000 EMS Certification

SIQ are also the holder of two national measurement standards for:

- Time and frequency and Electric current

10. RECOGNITION AND AGREEMENTS

IECEE CB Scheme

CB-FCS Agreement

CENELEC Certification Agreement, CCA

IQNET

Keymark

ENEC

CCA-EMC

11. INTERNAL AUDIT AND PERIODIC REVIEW

As part of the Quality System, SIQ conduct regular internal audits in addition to a review of the management system.

12. COMPLAINTS MECHANISM

Complaints are dealt with as part of the Quality System and include the recording of complaints, and reviewing the timely nature and effectiveness in their dealing by SIQ Staff. Complaints are reviewed by the Board of Certification Body.

13. SPECIAL FACTS TO BE NOTED

Over 40 years experience in the field of Electrical testing

14. COMMENTS

In accordance with the IECEx Assessment procedures, IECEx Technical Guidance Documents were compiled.

Issues raised during the site assessment have been satisfactorily addressed. Refer to site assessment report Annex B of ExMC/134/R.

During the site assessment the issue of subcontracting of testing was not clear and raised as an issue by the site assessment team. Since the site assessment, SIQ have amended Document CD 306 to prevent subcontracting being conducted by a body outside the IECEx Scheme.

15. RECOMMENDATION

In similar fashion to the ACB application, the Assessment Team recommends

1. Immediate acceptance of SIQ as an IECEx Accepted Certification Body for:-
 - Ex i
 - Ex m
 - Ex n
 - Ex e (excluding Batteries and Motors)
2. Extension of the scope to include Ex d (excluding enclosures with plastic materials), on completion of the following:-
 - Completion of the refurbishment of Flameproof test facilities at Zagorje; and
 - Satisfactory review of the new Ex d facilities by a member of the Assessment Team

LIST OF ANNEXES

A – Accreditation certificate.

Also refer to Annexes A and B of ExMC/134/R for Organisation Chart and copy of Site Assessment Report Summary.

Mr R Turton
Team Leader

Dr U Johannsmeyer

Mr C Agius

Annex A

DAP Deutsches Akkreditierungssystem Prüfwesen GmbH

represented in the

Deutschen Akkreditierungsrat



Accreditation

The DAP Deutsches Akkreditierungssystem Prüfwesen GmbH herewith confirms that the
Slovenian Institute of Quality and Metrology (SIQ)

Tržaška cesta 2
SI-1000 Ljubljana, Slovenia

with its

Explosion protection department

at the locations

Tržaška cesta 2
SI-1000 Ljubljana

Podvine 36
SI-1410 Zagorje ob Savi

is competent under the terms of ISO/IEC 17025:1999 for carrying out tests in the areas of
electrical and non-electrical equipment, protective systems, devices and components
intended for use in potentially explosive atmospheres in equipment groups I and II,
categories M1, M2, 1, 2 and 3

for the testing fields listed in the annex.

The laboratory has proved with its testing activities that it operates a quality management
system which complies with the requirements of the ISO 9002:1994 standard.

The accreditation is valid from 20-12-2000 to 19-12-2005.

DAR-Registration number: DAP-PL-3419.00

Berlin, 20-12-2000

Bern

Dr.-Ing. K. Berner
Managing Director
DAP Deutsches Akkreditierungssystem
Prüfwesen GmbH

Wittler

Dr.-Ing. M. Wittler
Technical expert for DAP GmbH
Deutsche Montan Technologie GmbH
Dortmund

See notes overleaf.

1st issue

Annex A**DAP Deutsches Akkreditierungssystem Prüfwesen GmbH**

Shareholder: VMPA, DGZfP, DVS, GL, LGA, VdTÜV

Annex to the Accreditation Certificate DAP-PL-3419.00

Period of validity: 20-12-2000 till 19-12-2005

Certificate holder: **Slovenian Institute of Quality and Metrology (SIQ)**Tržaška cesta 2
SI-1000 Ljubljana
Slovenia

for its

Explosion protection department

at the locations

Tržaška cesta 2
SI-1000 LjubljanaPodvine 36
SI-1410 Zagorje ob SaviTests in the fields: **electrical and non-electrical equipment, protective systems, devices and components intended for use in potentially explosive atmospheres in equipment groups I and II, categories M1, M2, 1, 2 and 3**abbreviations used: **see last page****1. Decree on technical requirements for apparatus used in potentially explosive atmospheres (Official Gazette of the Republic of Slovenia No. 46/98)**SIST EN 50014:1999
(EN 50014:1992) **Electrical apparatus for potentially explosive atmospheres - General requirements**SIST EN 50015:1995
(EN 50015:1994) **Electrical apparatus for potentially explosive atmospheres - Oil-immersion „o“**SIST EN 50016:1995
+ A1:1995
(EN 50016:1977
+ A1:1979) **Electrical apparatus for potentially explosive atmospheres; Pressurized apparatus „p“**SIST EN 50017:1995
(EN 50017:1994) **Electrical apparatus for potentially explosive atmospheres - Powder filling „q“**SIST EN 50018:1995
(EN 50018:1994) **Electrical apparatus for potentially explosive atmospheres - Flameproof enclosures „d“**

Annex A

Annex to the Accreditation Certificate DAP-PL-3419.00

SIST EN 50019:1999 (EN 50019:1994)	Electrical apparatus for potentially explosive atmospheres - Increased safety „e”
SIST EN 50020:1999 (EN 50020:1994)	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety „i”
SIST EN 50021:2000 (EN 50021:1999)	Electrical apparatus for potentially explosive atmospheres - Type of protection „n”
SIST EN 50028:1999 (EN 50028:1987)	Electrical apparatus for potentially explosive atmospheres; encapsulation „m”
SIST EN 50033:1997 (EN 50033:1991)	Electrical apparatus for potentially explosive atmospheres; caplights for mines susceptible to firedamp
SIST EN 50039:1995 (EN 50039:1980)	Electrical apparatus for potentially explosive atmospheres; intrinsically safe electrical systems „i”
SIST EN 50050:1996 (EN 50050:1986)	Electrical apparatus for potentially explosive atmospheres; electrostatic hand-held spraying equipment
SIST EN 1127-1:1998 (EN 1127-1:1997)	Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology
SIST EN 20284:1997 (EN 20284:1993)	Conveyor belts - Electrical conductivity - Specification and method of test (ISO 284:1982)
SIST IEC 61241-1-1: 1998 (IEC 61241-1-1:1993)	Electrical apparatus for use in the presence of combustible dust - Part 1: Electrical apparatus protected by enclosures - Section 1: Specification for apparatus
IEC 93:1980	Methods and tests for volume resistivity and surface resistivity of solid electrical insulating materials

2. Decree on Explosion Protection (enforcement of the requirements of the Directives 94/9/EC and 1992/92/EC, Official Gazette of the Republic of Slovenia No. 102/00)

SIST EN 50014:2000 A1:2000 + A2:2000 (EN 50014:1997 + A1:1999 + A2:1999)	Electrical apparatus for potentially explosive atmospheres - General requirements
SIST EN 50015:2000 (EN 50015:1998)	Electrical apparatus for potentially explosive atmospheres - Oil-immersion „o”
EN 50016:1995 + prA1:1998	Electrical apparatus for potentially explosive atmospheres; Pressurized apparatus „p”
SIST EN 50017:2000 (EN 50017:1998)	Electrical apparatus for potentially explosive atmospheres - Powder filling „q”



Annex A

Annex to the Accreditation Certificate DAP-PL-3419.00

SIST EN 50018:1995 (EN 50018:1994)	Electrical apparatus for potentially explosive atmospheres - Flameproof enclosures „q“
EN 50018:2000	Electrical apparatus for potentially explosive atmospheres - Flameproof enclosures „d“
SIST EN 50019:1999 (EN 50019:1994)	Electrical apparatus for potentially explosive atmospheres - Increased safety „e“
EN 50019:2000	Electrical apparatus for potentially explosive atmospheres - Increased safety „e“
SIST EN 50020:1999 (EN 50020:1994)	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety „i“
prEN 50020:2000	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety „i“
SIST EN 50021:2000 (EN 50021:1999)	Electrical apparatus for potentially explosive atmospheres - Type of protection „n“
SIST EN 50028:1999 (EN 50028:1987)	Electrical apparatus for potentially explosive atmospheres - Encapsulation „m“
SIST EN 50033:1997 (EN 50033:1991)	Electrical apparatus for potentially explosive atmospheres - Caplights for mines susceptible to firedamp
SIST EN 50039:1995 (EN 50039:1980)	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety „i“ systems
SIST EN 50050:1996 (EN 50050:1986)	Electrical apparatus for potentially explosive atmospheres - Electrostatic hand-held spraying equipment
SIST EN 50281-1-1:2000 EN 50281-1-1:1998	Electrical apparatus for use in the presence of combustible dust - Part 1-1: Electrical apparatus protected by enclosures - Construction and testing
SIST EN 50284:2000 (EN 50284:1999)	Special requirements for construction, test and marking of electrical apparatus of equipment group II, category 1 G
SIST EN 1127-1:1998 (EN 1127-1:1997)	Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology
SIST EN 20284:1997 (EN 20284:1993)	Conveyor belts - Electrical conductivity -Specification and method of test (ISO 284:1982)
prEN 13463-1:1999	Non-electrical equipment for potentially explosive atmospheres - Part 1: Basic methodology and requirements
IEC 93:1980	Methods and test for volume resistivity and surface resistivity of solid electrical insulating materials



Annex A**Annex to the Accreditation Certificate DAP-PL-3419.00****abbreviations used:**

DGZfP	German Society of Non-Destructive Testing
DVS	German Welding Society
EN	European Standard
GL	Germanischer Lloyd AG
IEC	International Electrotechnical Commission
SIQ	Slovenian Institute of Quality and Metrology
SIST	Slovenian National Standard
TN	Testing procedure of the SIQ
VdTÜV	Association of Technical Inspection Agencies
VMPA	Association of Material Testing Institutions

The approved signatories for *all* fields of testing are:

Bojan Pečavar	Dipl.-Ing.
Matjaž Podboj	Dipl.-Ing.
Zoran Svetik	Dipl.-Ing.
Dr. Zdravko Kramar	Doctor of Chemical Science
Franc Cencej	Engineer
Dr. Aleš Amšek	Doctor of Physical Science

