



ExMC/415/DV
December 2007

**INTERNATIONAL ELECTROTECHNICAL COMMISSION SCHEME FOR
CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR
EXPLOSIVE ATMOSPHERES (IECEx SCHEME)**

Circulation to: Ex Management Committee

**Title: IECEx Re-assessment Report for SIQ, Accepted Ex Test Laboratory
(ExTL), and a request for extension to scope**

INTRODUCTION

This document contains the IECEx Re-assessment Report for SIQ, Accepted Ex Test Laboratory (ExTL). During the re-assessment visit an assessment for an extension of scope was also carried out.

ExMC Members are asked to consider SIQ's request for an extension of scope.

Please complete and return the completed voting form to the Secretariat by
2008 01 18

Your speedy response to the voting process will be very much appreciated.

Chris Agius
IECEx Secretariat

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December 2007

IECEX RE-ASSESSMENT REPORT FOR SIQ IECEX TEST LABORATORY (ExTL)

Type of Assessment:

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)

1.3. Members of the Assessment Team

Jim Munro – Team Leader, Chairman IECEx Panel of Assessors
Theo Pijpker- KEMA, IECEx Assessor

1.4. Place and Date of Assessment

Trzaska cesta 2
1000 Ljubljana
Slovenia
and
Podvine 36
SI-1410 Zagorje ob Savi.
Slovenia
(for Ex d testing)

24-26 April 2007 (4 man-days)

1.5. Assessment References

- i) IECEx 02 Third Edition 11 2006 IECEx Scheme Rules of procedure
- ii) IECEx Operational Document OD/003/V1 IECEx Assessment Procedures
- iii) IECEx Operational Document OD/009/V1 Issuing of CoCs, ExTRs and QARs
- iv) ISO/IEC 17025:2005
- v) IECEx Technical Guidance Documents (TGDs)
- vi) ExTAG Decision Sheets (DSs)

1.6. *Scope of Application*

Number	Title
60079-0	Electrical apparatus for explosive gas atmospheres Part 0: General requirements Update to Edition 4
60079-7	Explosive atmospheres Part 7: Equipment protection by increased safety "e" (Excluding electric motors and batteries) Update to Edition 4
60079-11	Electrical apparatus for explosive gas atmospheres Part 11: Intrinsic safety 'i' Update to Edition 5
60079-18	Electrical apparatus for explosive gas atmospheres Part 18: Encapsulation 'm' Update to Edition 2

The above includes update to latest editions as shown.

Extension

Number	Title
60079-1	Electrical apparatus for explosive gas atmospheres Part 1: Construction and verification test of flameproof enclosures of electrical apparatus

Withdrawal

SIQ has indicated its intention to withdraw from having the following standard in its scope.

Number	Title
60079-15	Electrical apparatus for explosive gas atmospheres Part 15: Electrical apparatus with type of protection 'n' (Non-Sparking)

1.7. *Candidate TL Persons Interviewed*

Igor Likar	Managing Director
Zdravko Kramar	Head of Ex Department
Aleš Arnšek	Senior Test Engineer
Andrej Lukšič	Test Engineer
Alja Pregl	Quality Manager

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 ExCB*

The ExTL is integral with the ExCB at the site in Ljubljana.

1.10. *Financial Support*

There is no financial support. SIQ is a self-funding organization.



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1.11. History

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). There is a total of over 40 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.

2. ORGANISATION

2.1. Names, Titles and Experience of the Senior Executives

Name	Title	Experience
Zdravko Kramar SIQ,	Head of Department	14 years in
Franc Cencelj 14 in	Senior Test Engineer	most with Ex 40 years in Ex, SIQ

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

Name	Title	Experience
Alja Pregl	Quality Manager	5 years as Quality Manager

2.3. Name and Title of Nominated Principal Contact

Name	Title	Contact
Igor Likar	Managing Director	

2.4. Employees

Name	Title	Experience
Aleš Arnšek	Senior Test Engineer	10 years in SIQ in Ex
Andrej Lukšič	Test Engineer	6 years in SIQ in Ex
Andrej Rakuša	Test Engineer	1 year in SIQ in Ex

2.5. Organizational Structure

The organizational structure is shown in Annex 1 and the administrative structure is shown in Annex 2.

3. RESOURCES

The total size of SIQ is just over 100 people. Five of these are directly involved with Ex testing while additional resources are available in other departments.

The laboratory is well equipped with the capability to do nearly all the tests in the standards in its scope. SIQ indicated that they will be subcontracting the resistance to light test and the small component test of IEC 60079-0 to CESI which is an accepted ExCB and ExTL within the Scheme.



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The flameproof testing facility is very new and was commissioned in December 2006. It has one autoclave and two other configurations that can be used for testing. It has a computer controlled gas-mixing and pressure measurement system which was designed by PTB.

There is an extensive range of procedures for the operation at SIQ.

4. DOCUMENTATION

4.1. Quality Manual

There is a Quality Manual, SR001 that 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 latter 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. Test Methods/Procedures

In addition to the above manual 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.

In addition there are work instructions available on the intranet and a range of other documentation such as guides.

All the above documents are accessible via a comprehensive menu system on the intranet.

4.3. Test 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.

4.4. Document Change Control

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.

5. TEST REPORTS

5.1. Test Reports Issued

There have been no IECEx ExTRs issued by SIQ since it was accepted into the Scheme.



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The major area of Ex activity by SIQ in that time has been in inspections associated with end user premises, including plans, area classification, installation and maintenance.

However, it has issued 6 ATEX certificates in the last three years covering protection types Ex d, Ex e, Ex i and Ex m. One of the certificates was for caplights. There were 6 test reports issued to support those certificates.

6. CALIBRATION

SIQ has a well equipped calibration laboratory, especially for electrical parameters. It is sufficiently expert to hold national calibration standards for time and frequency, and electric current. Hence all electrical equipment is calibrated in SIQ. Where equipment is calibrated externally, SIQ use laboratories holding accreditation. All equipment calibration requirements are kept track of in a data base in the calibration department. Some additional calibration was requested of the pressure measurement system for Ex d pressure determination and this was subsequently done.

7. CONFIDENTIALITY

All staff are required to sign a document GN138 which is a declaration of confidentiality. Staff are also trained to ensure they follow the confidentiality requirements to protect the integrity and reputation of the business. An example of a signed agreement was viewed.

8. NATIONAL ACCREDITATION

SIQ have national accreditation for laboratory accreditation from DAP in Germany for the certification and testing in the Ex field. They used to also have accreditation from the Slovenian accreditation but now only maintain this in the Ex field for inspection. The DAP Certificate, DAP-PL-3419.00 is attached at Annex 3 with the scope at Annex 4.

9. RECOGNITION AND AGREEMENTS

SIQ has a wide range of recognitions and agreements. More detail is included in the associated ExCB report.

10. INTERNAL AUDIT AND PERIODIC REVIEW

For internal audit a plan is released at the end of May. One is a vertical which is a technical and the other is horizontal covering general requirements of the relevant standards. Examples of both were viewed. Auditing is done at least once a year. Details of the process are contained in procedures SN012. There is quite a large number of staff trained and accepted for internal auditing. A comprehensive chart shows their qualifications, training and areas that they are considered competent to audit.

The last management review meeting was held on 11 April 2007. The report for this meeting was under preparation at the time of the assessment but a report from the previous meeting was viewed and also an example of a report from one of the departments to the latest meeting. Both were very comprehensive.



11. COMPLAINTS AND APPEALS (Including appeals to IECEx)

Complaints are collected in each department and dealt with 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. There is also a document on information for customers/applicants that includes a part on their rights of appeal.

There has only ever been one appeal and this was not in the Ex area.

At the time of the assessment there was no provision in the above procedures to cover the provision for appeals to the IECEx Scheme or to advise the customers that this is available, but this was subsequently addressed in revision of the procedures.

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:

- The site assessment report with details of issues raised and how these have been resolved
- Completed technical guidance notes (TGDs) for Ex i, d, m and e
- Photos of the facilities

12.2. *Testing Demonstrated*

The following tests were demonstrated by SIQ during the re-assessment:

- Pressure determination test to IEC 60079-1 using acetylene and hydrogen.
- Test for non-transmission of flame to IEC 60079-1 using hydrogen.
- Temperature rise of a luminaire.
- Dust test to IEC 60529 for IP6X.

SIQ was able to demonstrate its competence in each of the above tests.

13. COMMENTS (Including issues found during assessment)

Some issues were found during the assessment, that included calibration, record keeping, location of spark plugs for Ex d testing, performance of the dust testing chamber, and use of decision sheets and operational documents.

Details of these and how they were resolved to the satisfaction of the assessor are contained in the site report.

The assessment team found that due to the lack of IECEx ExTRs being produced it was difficult to fully assess the ability of SIQ to produce these in compliance with the Scheme rules and procedures.

14. RECOMMENDATION

Based on the re-assessment performed on 24 to 26 April 2007, SIQ is recommended for continued acceptance in the IECEx scheme as a Testing Laboratory (ExTL)



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according to the scope of the standards listed in this document, including the extension of scope.

Due to the lack of documents issued so far, it is recommended that the first ExTR for Ex d and the first ExTR for Ex i be reviewed.

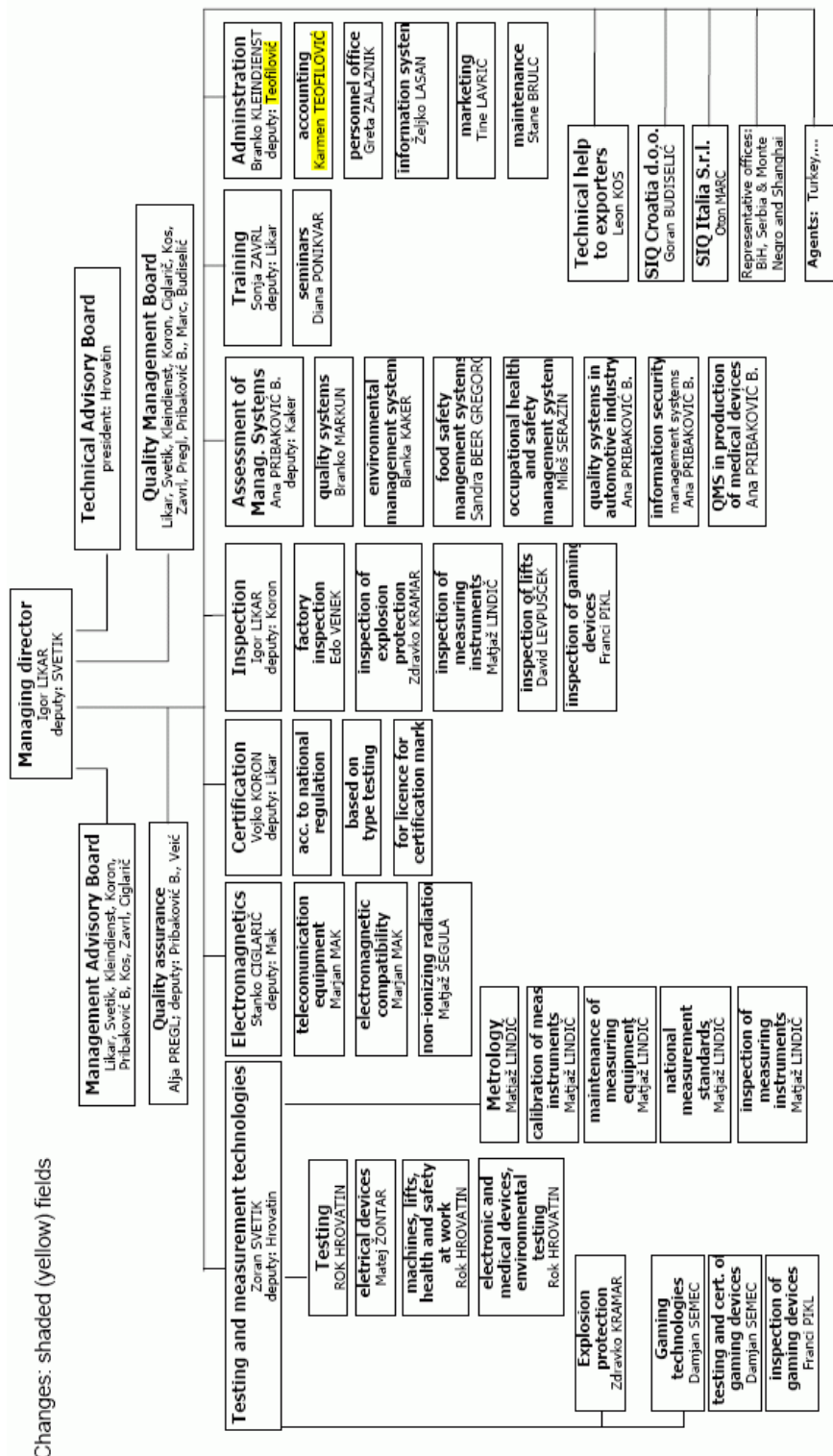
Jim Munro
Team Leader

Theo Pijpker
Expert Assessor

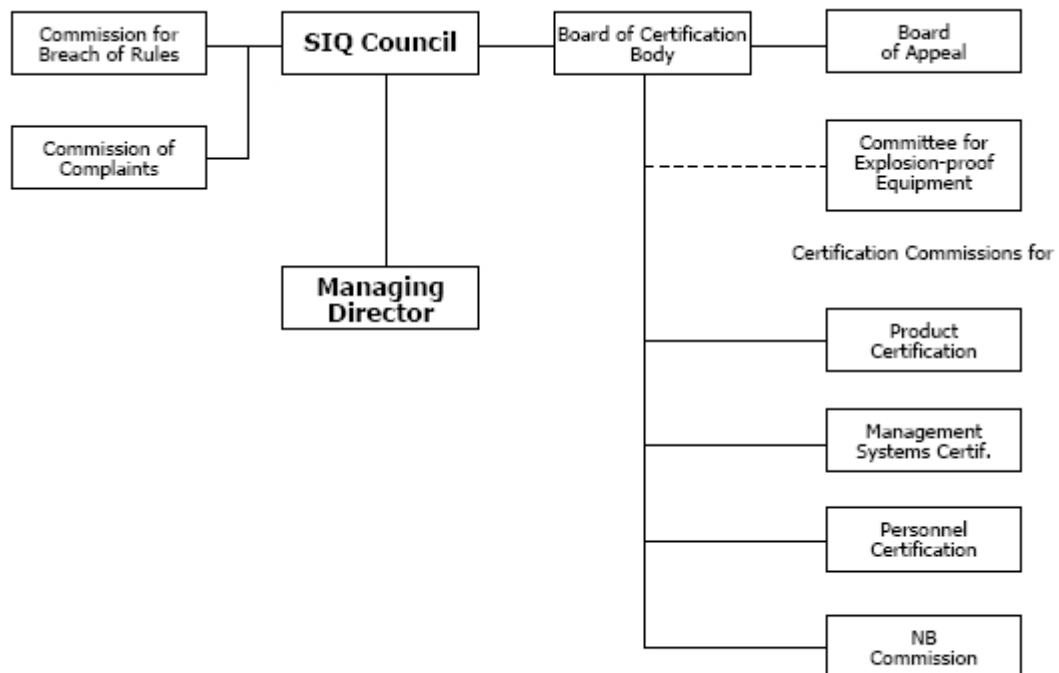
Date: 28 August 2007

List of Annexes:

1. Organizational Diagram of SIQ
2. Administrative Structure of SIQ
3. Accreditation Certificate for SIQ for ISO/IEC 17025
4. Scope of Accreditation Certificate

Annex 1
Organizational Diagram of SIQ

Annex 2
Administrative Structure of SIQ



Annex 3
Accreditation Certificate for SIQ for ISO/IEC 17025

DAP Deutsches Akkreditierungssystem Prüfwesen GmbH
Signatory to the Multilateral Agreement of EA for Mutual Recognition
and to the Mutual Recognition Arrangement of ILAC
represented in the

Deutscher AkkreditierungsRat



Accreditation

The DAP Deutsches Akkreditierungssystem Prüfwesen GmbH herewith confirms that the

Slovenian Institute of Quality and Metrology (SIQ)

Tržaška cesta 2
1000 Ljubljana
Slovenia

with its

Explosion Protection Department

at the locations

Tržaška cesta 2
1000 Ljubljana
Slovenia

Podvine 36
1410 Zagorje ob Savi
Slovenia

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the fields 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

in accordance with the test methods listed in the annex.
The accreditation is valid from 2007-03-01 to 2010-04-09.
DAR registration number: **DAP-PL-3419.00**
Berlin, 2007-03-01

P. P. Valtner
Univ.-Prof. Dr.-Ing. habil. K. Ziegler
Managing Director
DAP Deutsches Akkreditierungssystem
Prüfwesen GmbH



See notes overleaf.

2nd issue



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Annex 4
Scope of Accreditation Certificate

DAP Deutsches Akkreditierungssystem Prüfwesen GmbH

Annex to the Accreditation Certificate DAP-PL-3419.00
nach DIN EN ISO/IEC 17025:2005

Period of validity: 2007-03-01 to 2010-04-09

Certificate holder: **Slovenian Institute of Quality and Metrology (SIQ)**

Tržaška cesta 2
1000 Ljubljana
Slovenia

for its

Explosion Protection Department

at the locations

Tržaška cesta 2
1000 Ljubljana
Slovenia

Podvine 36
1410 Zagorje ob Savi
Slovenia

Tests 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



SIST EN 1127-1:1998
(EN 1127-1:1997-08)

Explosive atmospheres – Explosion prevention and protection;
Part 1: Basic concepts and methodology

prEN 1127-1
2004-12

Explosive atmospheres – Explosion prevention and protection;
Part 1: Basic concepts and methodology

SIST EN 1127-2:2002
(EN 1127-2:2002-04)

Explosive atmospheres – Explosion prevention and protection;
Part 2: Basic concepts and methodology for mining

prEN 1710
2003-03

Equipment and components intended for use in potentially
explosive atmospheres in mines

SIST EN 1755:2001
(EN 1755:2000-02)

Safety of industrial trucks, Operation in potentially explosive
atmospheres – Use in flammable gas, vapour, mist and dust

SIST EN 13463-1:2002
(EN 13463-1:2001-11)

Non-electrical equipment for potentially explosive
atmospheres – Part 1: Basic methodology and requirements

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EN 13463-2 2004-11	Non-electrical equipment for use in potentially explosive atmospheres – Part 2: Protection by flow restricting enclosure „fr“
prEN 13463-3 2002-08	Non-electrical equipment for use in potentially explosive atmospheres – Part 3: Protection by flameproof enclosure „d“
SIST EN 13463-5:2004 (EN 13463-5:2003-12)	Non-electrical equipment for potentially explosive atmospheres – Part 5: Protection by constructional safety „c“
prEN 13463-6 2002-08	Non-electrical equipment for use in potentially explosive atmospheres – Part 6: Protection by control of ignition source „s“
SIST EN 13463-8:2003 (EN 13463-8:2003-09)	Non-electrical equipment for potentially explosive atmospheres – Part 8: Protection by liquid immersion „k“
prEN 14373 2002-03	Explosion suppression systems
prEN 14460 2002-04	Explosion resistant equipment
OSIST prEN 14986:2004 (prEN 14986:2004-06)	Design of fans working in potentially explosive atmospheres
SIST EN 20284:1997 (EN 20284:1993-03)	Conveyor belts – Electrical conductivity – Specification and method of test (ISO 284 : 1982)
SIST EN 50014:2000 A1:2000 A2:2000 (EN 50014:1997-06 EN 50014 A1:1999-02 EN 50014 A2:1999-02)	Electrical apparatus for potentially explosive atmospheres – General requirements
SIST EN 50015:2000 (EN 50015:1998-09)	Electrical apparatus for potentially explosive atmospheres – Oil immersion „o“
SIST EN 50016:2003 (EN 50016:2002-07)	Electrical apparatus for potentially explosive atmospheres – Pressurized apparatus „p“
SIST EN 50017:2000 (EN 50017:1998-09)	Electrical apparatus for potentially explosive atmospheres – Powder filling „q“
SIST EN 50018:2001 A1:2003 (EN 50018:2000-11 EN 50018 A1:2002-09)	Electrical apparatus for potentially explosive atmospheres – Flameproof enclosures „d“
SIST EN 50019:2000 (EN 50019:2000-07)	Electrical apparatus for potentially explosive atmospheres – Increased safety „e“
SIST EN 50020:2003 (EN 50020:2002-06)	Electrical apparatus for potentially explosive atmospheres – Intrinsic safety „i“



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SIST EN 50021:2000 (EN 50021:1999-04)	Electrical apparatus for potentially explosive atmospheres – Type of protection „n“
SIST EN 50028:1999 (EN 50028:1987-02)	Electrical apparatus for potentially explosive atmospheres – Encapsulation „m“
SIST EN 50033:1997 (EN 50033:1991-03)	Electrical apparatus for potentially explosive atmospheres – Caplights for mines susceptible to firedamp
SIST EN 50050:2002 (EN 50050:2001-09)	Electrical apparatus for potentially explosive atmospheres – Electrostatic hand-held spraying equipment
SIST EN 50281-1-1:2000 A1:2002 (EN 50281-1-1:1998-09 EN 50281-1-1 A1:2002-05)	Electrical apparatus for use in the presence of combustible dust – Part 1-1: Electrical apparatus protected by enclosures – Construction and testing
SIST EN 50281-1-2:2000 A1:2002 (EN 50281-1-2:1998-09 EN 50281-1-2 A1:2002-05)	Electrical apparatus for use in the presence combustible dust Part 1-2: Electrical apparatus protected by enclosures – Selection, installation and maintenance
SIST EN 50284:2000 (EN 50284:1999-04)	Special requirements for construction, test and marking of electrical apparatus of equipment group II, Category 1 G
SIST EN 50303:2000 (EN 50303:2000-07)	Group I, Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust
SIST-TP CLC/TR 50404:2003 (CLC/TR 50404:2003-06)	Electrostatics – Code of practice for the avoidance of hazards due to static electricity
CLC/TR 50427 2004-12	Assessment of inadvertent ignition of flammable atmospheres by radio-frequency radiation – Guide
SIST EN 60079-0:2004 (EN 60079-0:2004-03)	Electrical apparatus for explosive gas atmospheres – Part 0: General requirements
SIST EN 60079-1:2004 (EN 60079-1:2004-03)	Electrical apparatus for explosive gas atmospheres – Part 1: Flameproof enclosures „d“
SIST EN 60079-7:2003 (EN 60079-7:2003-08)	Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety „e“
SIST EN 60079-15:2004 (EN 60079-15:2003)	Electrical apparatus for explosive gas atmospheres – Part 15: Type of protection „n“
SIST EN 60079-18:2004 (EN 60079-18:2004-04)	Electrical apparatus for explosive gas atmospheres – Part 18: Construction, test and marking of type of protection encapsulation „m“ electrical apparatus
SIST EN 60079-25:2004 (EN 60079-25:2004-01)	Electrical apparatus for explosive gas atmospheres Intrinsically safe systems



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EN 60079-26: 2004-12	Electrical apparatus for explosive gas atmospheres – Part 26: Construction, test and marking of Group II Zone 0 electrical apparatus
OSIST prEN 60079-27: 2004 (prEN 60079-27:2004-03)	Electrical apparatus for explosive gas atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)
IEC 60093 1980-06	Methods and test for volume resistivity and surface resistivity of solid electrical insulating materials
prEN 61241-0 2004-03	Electrical apparatus for use in the presence of combustible dust – Part 0: General requirements
EN 61241-1 2004-06	Electrical apparatus for use in the presence of combustible dust – Part 1: Protection by enclosures „ID”
SIST EN 61241-2-2:2001 (EN 61241-2-2:1995-08)	Electrical apparatus for use in the presence of combustible dust – Part 2: Test methods – Section 2: Method for determining the electrical resistivity of dust in layers
prEN 61241-4 2004-04	Electrical apparatus for use in the presence of combustible dust – Part 4: Type of protection „pD”
EN 61241-10 2004-07	Electrical apparatus for use in the presence of combustible dust – Part 10: Classification of areas where combustible dusts are or may be present
OSIST prEN 61241- 11:2004 (prEN 61241-11:2004-02)	Electrical apparatus for use in the presence of combustible dust – Part 11: Intrinsically safe apparatus „ID”
EN 61241-14 2004-09	Electrical apparatus for use in the presence of combustible dust – Part 14: Selection and installation
OSIST prEN 61241- 17:2004 (prEN 61241-17:2004-11)	Electrical apparatus for use in the presence of combustible dust – Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)
EN 61241-18 2004-11	Electrical apparatus for use in the presence of combustible dust – Part 18: Protection by encapsulation „mD”





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Annex to the Accreditation Certificate DAP-PL-3419.00

abbreviations used:

CLC/TR	Cenelec/Technical Report
EN	European Standard
IEC	International Electrotechnical Commission
OSIST	Draft of Slovenian National Standard
prEN	Draft of European Standard
SIST	Slovenian National Standard
SIST-TP	Slovenian National Standard-Technical Report

According to the requirements of the legislator, this accreditation does not replace the recognition or approval procedure of the responsible authority.

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

Zoran Svetik	Director of Testing and Measurement Technologies
Dr. Zdravko Kramer	Doctor of Chemical Science
Franc Cencelj	Test Engineer
Dr. Aleš Amšek	Doctor of Physical Science



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