



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

Ex Management Committee, ExMC

**TITLE: IECEx Assessment Report for acceptance of *Fyzikálně technický
zkušební ústav (Physical Technical Testing Institute) (FTZU)* as an
IECEx Test Laboratory (ExTL)**

INTRODUCTION

This document contains the IECEx Assessment Report for the acceptance of *Fyzikálně technický zkušební ústav (Physical Technical Testing Institute) (FTZU)* - as an IECEx Test Laboratory (ExTL) within the IECEx Scheme.

Please consider this report, which is hereby issued for approval during the ExMC meeting to be held in Shanghai in September 2006.

Any comment relating to this report should be forwarded to the Secretariat prior to the meeting

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IECEx Secretariat

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IECEx Assessment Report For FTZU Czech Republic (IECEx TEST LABORATORY)

Type of Assessment:

Initial assessment for Candidate ExTL

X

1. OBJECT AND FIELD OF APPLICATION

1.1 *Country:*

Czech Republic

1.2 *Name of Candidate TL*

Fyzikálně technický zkušební ústav (Physical Technical Testing Institute - FTZU)

1.3 *Members of the Assessment Team*

Jim Munro, Lead Assessor
Alexander Zalogin, Assessor
Wolf Dill, Assessor

1.4 *Place And Date Of Assessment*

Fyzikálně technický zkušební ústav (FTZU)
Pikartská 7, 716 07 Ostrava – Radvanice
Czech Republic

14-16 June 2006

1.5 *Assessment References*

Document:

- i) IECEx 02 Second Edition
- ii) IECEx Operational Document OD/003
- iii) IECEx Operational Document OD/009
- iv) ISO/IEC 17025:1999
- v) IECEx Technical Guidance Documents
- vi) ExTAG decision sheets
- vii) ExTL application documents 6 March 2006



1.6 Scope of Application

Product Category	Standard
General Requirements	IEC 60079-0
Flameproof Enclosures "d"	IEC 60079-1
Pressurised Enclosures "p"	IEC 60079-2
Powder Filling "q"	IEC 60079-5
Oil Immersion "o"	IEC 60079-6
Increased Safety "e"	IEC 60079-7
Intrinsic Safety "i"	IEC 60079-11
Type "n" Protection	IEC 60079-15
Type "m" Protection (encapsulation)	IEC 60079-18
Intrinsically Safe Systems	IEC 60079-25
Group II Zone "0" Electrical Apparatus	IEC 60079-26
Fieldbus, FISCO & FNICO	IEC 60079-27
Combustible dust - General requirements	IEC 61241-0
Apparatus for combustible dust atmospheres	IEC 61241-1-1
Combustible dust - Protection by Enclosures tD"	IEC 61241-1
Combustible dust – Type of protection "pD"	IEC 61241-4
Combustible dust – Type of protection "iD"	IEC 61241-11
Combustible dust – Type of protection "mD"	IEC 61241-18
Gas detectors – Part 1	IEC 61779-1
Gas detectors – Part 2	IEC 61779-2
Gas detectors – Part 3	IEC 61779-3
Gas detectors – Part 4	IEC 61779-4
Gas detectors – Part 5	IEC 61779-5
Caplamps	IEC 62013-1
Trace heating	IEC 62086-1

1.7 Candidate TL Persons Interviewed

Jaromir Hruby	Director
Jaroslav Sindler	Vice-Director
Josef Krupica	Head of Test Laboratory
Jan Pohludka	Quality Manager
Jan Just	Test Engineer
Jaromir Moravec	Test Engineer

A number of other test engineers and technicians were also interviewed.

1.8 Legal Entity Of The Candidate TL

FTZU (Physical Technical Testing Institute) is a government owned company. It is a registered company with number 005 77 880. It operates similar to any company and pays tax on its profits, with its profits generally being used to improve and expand its facilities.

1.9 Associated ExCB

The ExTL is integral with the ExCB. There are procedures to ensure appropriate separation of the roles of the ExCB and ExTL.



1.10 Financial Support

There is no financial support. FTZU relies on income from its activities to finance its operation.

1.11 History

The operation was originally established in 1952 with the first 'National Testing and Approval Authority' established in 1968. In 1991 the testing and approval department was separated from the Mining Research Institute to become and independent Physical Technical Testing Institute based at Ostrava-Radvanice. It was formally registered as a company on 27 December 1990, No. 005 77 880.

In 1997 FTZU was awarded a statute of National Authorized Body No. AO 210 to the new law regulation (Act No.22/1997 Coll.) for technical requirements for products.

In 2001 it became a Notified Body No.NB 1026 for 94/9/EC Directive (ATEX100).

2. ORGANISATION

2.1 Names, Titles and Experience of the Senior Executives

Jaromir Hruby	Director	20 Years
Jaroslav Sindler	Vice-Director	37 Years
	Head of Certification Body	
Josef Krupica	Head of Testing Laboratories	38 Years

2.2 Name, Title and Experience of the Quality Management Representative

Jan Pohludka	Quality Manager	19 years
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2.3 Name and Title of Nominated Principal Contact

Jaromir Hruby	Director
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2.4 Employees

Within the laboratory in addition to management there are 10 professional experts, and two technicians. Most of the staff have many years of experience in Ex testing and their competence was verified as part of the assessment process.

2.5 Organisational Structure

See Annex A

3. RESOURCES

FTZU is resourced with a staff with many years of experience and a very good knowledge of hazardous area testing. It has excellent test facilities covering nearly all of the tests contained in the standards covered in the scope. Annex C shows some of the test equipment used at FTZU as displayed on their website.

4. TEST METHODS

FTZU have a comprehensive range of test protocols/work instructions covering the tests that they carry out. There are detailed test proformas available on the computer system which are to be completed for the testing.

5. TEST REPORTS AND RECORDS

5.1 Test Reports Issued

Type of protection	2004	2005
Flameproof enclosure	93	65
Increased safety	17	12
Intrinsically safe apparatus	112	65
Pressurisation	8	4
Type of protection "n"	16	17
Encapsulation "m"	9	13
Electrical apparatus for use in the presence of combustible dust	22	25
Gas detectors	8	7
Miner's caplights	5	5
Electrical trace heating	2	-

The above report numbers are the same as for the certificates. This is because FTZU issue one report for each certificate regardless of the number of protection techniques. For each certificate there may be a number of internal test reports for the physical tests done. These may also be made available to the applicant if requested.

5.2 Test Records

As addressed in 12.2 of the Quality Manual each engineer has a test diary into which all data is recorded that is not recorded elsewhere. A sample of such a diary was reviewed and found to be satisfactory.

6. CALIBRATION

Approximately 80% of calibration is done externally by the Czech Metrological Institute or accredited laboratories. The FTZU calibration laboratory is well equipped with appropriate standards and calibration apparatus. The climatic conditions are well controlled. There is a detailed equipment database and system for keeping track of calibration and when instruments fall due for calibration.

All critical instruments used for testing that were checked were found to be in calibration. Calibrated check gases are used for checking gas chromatograph used for gas mixing in the flameproof testing area. It was advised that these are replaced every 12 months in accordance with the calibration certificate.



7. DOCUMENTATION

7.1 *Quality Manual*

There is a comprehensive quality manual for the testing body and a separate one for the certification body. The ExTL manual was updated after the assessment to include all necessary requirements for the IECEx Scheme.

7.2 *Document Change Control*

Responsible personnel perform the document change control process to Director's Order 1/97. There are hard copies of documents that are subject to individual control when changes are made; for example there are 5 copies of the Testing Laboratory Quality Manual. A book is used to record what has happened with the distribution of copies for the two quality manuals. An electronic master copy of each document is also available to staff.

A record of standards issued to each person is maintained. Generally staff work with Czech translations of the standards. FTZU advised that these systems will be used for IEC standards when producing EXTRs where the IEC standards are different to those already in use.

IECEx Decision sheets are on the computer server and available to staff. Translations are also made of each decision sheet and imbedded within the text. A similar approach is used for other IECEx documents including TGDs, EXTRs, ODs etc. At the time of the assessment there was no procedure to cover this approach including how it will be kept up to date and accessed. This was subsequently rectified to the satisfaction of the Assessment Team.

8. CONFIDENTIALITY

There are orders on access to certification area and test area. All records are required to be kept confidential. Details are covered in Clause 4.1,8 of the ExTL Quality Manual. All employees are required to sign a declaration of confidentiality as part of their employment contract. A sample of such a declaration was viewed.

There is a directive 2/1991 that covers controls for access of visitors and customers. There is a control at the front gate for the site (which includes other companies and the research institute) and also at FTZU reception. There is a security patrol in the evenings for the whole site.

9. NATIONAL ACCREDITATION

FTZU hold national accreditation as a testing body from the Czech Accreditation Institute No 041/2006. This is valid until 28 January 2011. It states that Mr Josef Krupica shall act on behalf of the accredited testing laboratory and Mr Josef Krupica, Ing Jaromir Hruby and Mr Ladislav Byrsky shall be responsible for the correctness of the relevant test report. A copy of the accreditation is shown at Annex B. The accreditation is issued for the physical tests included in the standards and does not cover assessment aspects of the standards.



10. RECOGNITION AND AGREEMENTS

FTZU do not use tests from external laboratories but have agreements to provide tests to other laboratories in the Czech Republic. There is also such an agreement with SQS in Zagreb.

11. INTERNAL AUDIT AND PERIODIC REVIEW

An internal audit program is prepared for each year. FTZU's auditors perform audits. Extraordinary audits may also be performed. The audits for 2005 were carried out in the fourth quarter. The reports from these audits, together with a summary report were viewed.

12. COMPLAINTS MECHANISM

Clause 4.8 of the testing laboratory quality manual covers complaints. The Director has the responsibility for resolving complaints. At the time of assessment there was no mention of the appeals process that applies in the IECEx Scheme. This was subsequently rectified to the satisfaction of the Assessment Team.

13. SPECIAL FACTS TO BE NOTED

None

14. COMMENTS

Some minor issues were found during the assessment with IECEx procedures, transport/safe handling of instruments, test records and calibration. These were all subsequently rectified to the satisfaction of the Assessment Team.

FTZU was found to be a very well resourced operation with a comprehensive range of equipment, staff with many years of experience and a mature quality system.

15. RECOMMENDATION

Based on the initial assessment performed on 14 to 16 June 2006 FTZU is recommended for acceptance into the IECEx scheme as a Testing Laboratory (ExTL) according to the scope of the standards listed in this document, subject to resolution of the issues listed above.

Jim Munro
Lead Assessor

Alexander Zalogin
Assessor

Wolf Dill
Assessor

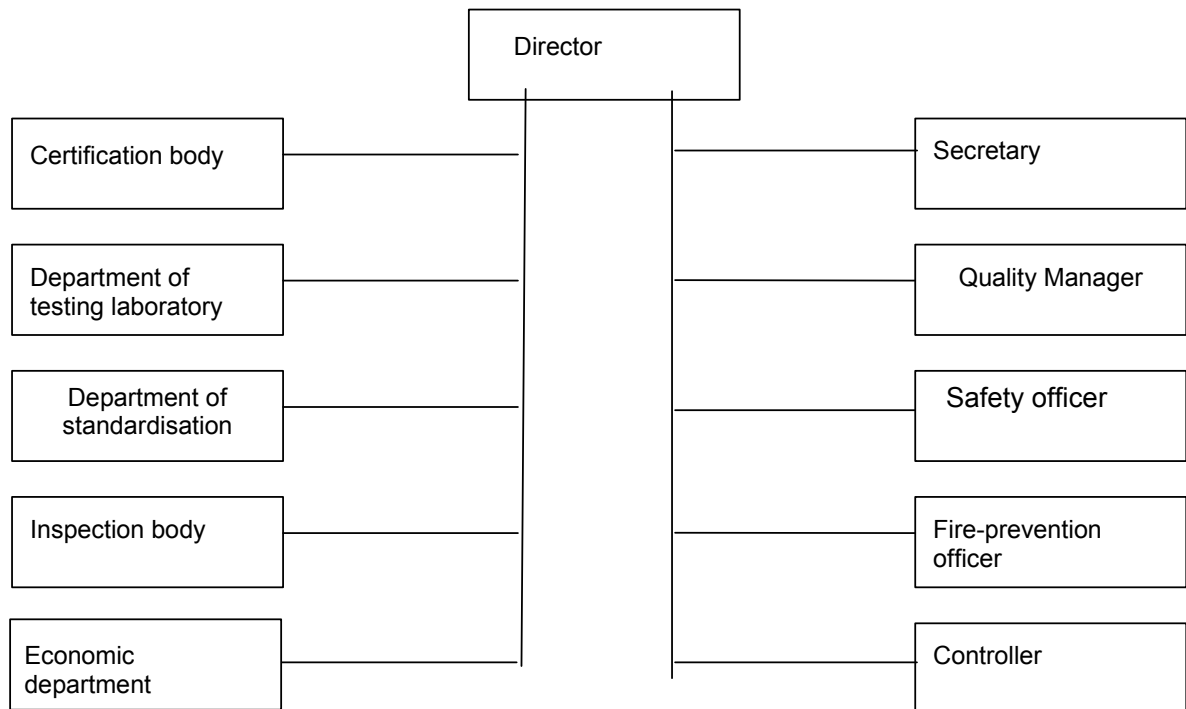
28 June 2006

Annexes

- Annex A: FTZU Organisation Chart
Annex B: FTZU testing body accreditation from Czech Accreditation Institute which is ILAC accredited
Annex C: Test equipment used at FTZU as displayed on their website

ANNEX A

FTZU Organisational structure





Czech Accreditation Institute
Public Service Company
110 00 Praha 1 - Nové Město, Opletalova 41

issues this

CERTIFICATE OF ACCREDITATION

No. 041 / 2006

to

Testing Laboratory No. 1019

FYZIKÁLNĚ TECHNICKÝ ZKUŠEBNÍ ÚSTAV, státní podnik
Zkušební laboratoř
Pikartská 7, 716 07 Ostrava - Radvanice

Scope of accreditation:

Testing of equipment and protective systems for the rooms with risk of explosion; testing of electric equipment, gas analysers, oxygen meters, electrostatic properties of materials; testing of electromagnetic resistance of electric equipment to the extent as specified in the appendix to this Certificate which is attached in the Czech language.

Mr. Josef Krupica shall act on behalf of the accredited testing laboratory, and Mr. Josef Krupica, Ing. Jaromír Hrubý and Mr. Ladislav Byrský shall be responsible for the correctness of relevant test reports.

This Certificate of Accreditation has been issued by Czech Accreditation Institute, Public Service Company, on the basis of assessment of fulfilment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025

and after having found that the testing laboratory has been qualified for objective and independent testing to the extent of the scope of accreditation.

In its activities, performed within the scope and for the period of validity of this Certificate, the holder of this Certificate is entitled to use the identification "Accredited Testing Laboratory No. 1019" next to its name (including official stamp) provided it observes all relevant regulations relating to the activity of accredited testing laboratory including regulations issued by Czech Accreditation Institute, Public Service Company.

Should it be proved that the holder of this Certificate fails to meet the accreditation criteria decisive for the issue hereof and the obligations conditioning accreditation, Czech Accreditation Institute, Public Service Company, may either suspend the validity of or withdraw or change this Certificate.

This Certificate is valid until: **28 February 2011**

Prague: 31 January 2006



Jiří Ružička
Director
Czech Accreditation Institute
Public Service Company

Instruction:

The holder can enter a written caveat against this Certificate, provided it concerns the scope of accreditation, in 10 days from the receipt hereof. Timely submitted caveat has no dilatory effect.

Annex C

FTZU – Photos of facilities (from Website)



Test of I.S. equipment



Measurement of High Voltage by electrostatic voltmeter



Dynamic pressure sensor of explosion pressure



Chamber for explosion test of electrostatic paint guns



Surface resistance measurement of plastic materials



Measurement of High resistance



Vector wattmeter



System for the measurement of temperature by contact method



High voltage dielectric test



High current sources



Test chamber for test of flameproof enclosure



Test arrangement for flameproof enclosures



FTIR gas analyzer and oxygen analyzer



Test chamber for test of gas detectors



Dust chamber for IP protection test



Dynamometers for tests of electric motors



High Resistance meter



Gas chromatograph for the gas concentration measurement



Micro IRHD meter



Oxygen analyzer



Microohm
meter



Explosion pressure measurement system



length measurement calibration bench



RLC bridge meter



Explosion pressure measurement system



Torsion meter



Shaker machine



Test Assembly for test of flameproof enclosure



Explosion test chamber



IS circuit sparking apparatus



Climatic chamber



Pressure chamber for test of IPx8



Explosion test chamber with the temperature regulation from -30 up to 80 °C



EMC test chamber



ESD Meter