



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

**Title: Re-assessment Report for continued acceptance of Physikalisch-  
Technische Bundesanstalt (PTB) as Ex Test Laboratory (ExTL)**

**To: Members of the IECEx Management Committee, ExMC**

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**Introduction**

This document contains the IECEx Re-assessment Report for Physikalisch-Technische Bundesanstalt (PTB) of Germany as an Ex Test Laboratory in accordance with the 5-year re-assessment plan for the surveillance and monitoring of bodies under the IECEx Scheme.

This Report is issued for endorsement at the 2005 ExMC Buxton Meeting.

*Chris Agius*  
*IECEx Secretariat*

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# IECEx RE-ASSESSMENT REPORT FORM

## For ExTL

### (Accepted Ex Testing Laboratory)

#### 1. OBJECT AND FIELD OF APPLICATION

1.1 **Country:** *Germany*

1.2 **Name of Candidate ExTL:** *PTB*

1.3 **Members of the Assessment Team**  
*Jim Munro – Lead assessor*  
*Heinz Berger - Assessor*

1.4 **Place and Date of Assessment**  
*PTB*  
*Bundesalle 100, d-38116*  
*Braunschweig, Germany*  
*2-3 September 2004*

#### 1.5 **Assessment References**

Documents:

- i) IECEx 02 Second Edition
- ii) IECEx Operational Document OD/009/V1
- iii) ISO/IEC 17025
- iv) IECEx Technical Guidance Documents

#### 1.6 **Current Scope of Acceptance**

Product Category	Standard
General Requirements	IEC 60079-0
Flameproof Enclosures "d"	IEC 60079-1
Pressurised Enclosures "p"	IEC 60079-2
Sand-filled Apparatus "q"	IEC 60079-5
Oil-immersed Apparatus "o"	IEC 60079-6
Increased Safety "e"	IEC 60079-7
Intrinsic Safety "i"	IEC 60079-11
Electrical Apparatus with Type of Protection "n"	IEC 60079-15
Encapsulation "m"	IEC 60079-18
Apparatus for combustible dusts	IEC 61241-1-1

#### 1.7 **Any Changes in Scope**

The following changes of scope were requested:

Product Category	Standard
Intrinsically Safe Systems	IEC 60079-25
Group II Zone "O" Electrical Apparatus	IEC 60079-26
Field bus Intrinsically Safety concept (FISCO)	IEC 60079-27
Resistance Trace heating (General requirements)	IEC 62086-1
Combustible dust - General requirements	IEC 61241-0
Combustible dust - Protection by Enclosures "tD"	IEC 61241-1
Combustible dust – Type of protection "pD"	IEC 61241-4
Combustible dust – Type of protection "mD"	IEC 61241-18

### 1.8 *Candidate ExTL Persons Interviewed*

Name	Position
Hans Wehinger	Head of Certification Body
Uwe Klausmeyer	Head of Department 3.5 "Flame Transmission Processes"
Ulrich Johannesmeyer	Head of Department 3.6 "Intrinsic Safety"
Frank Lienesch	Head of WG "explosion Protected Drive-Systems"
Wolfgang Ellwardt	Department 3.6 Expert on Ex p

### 1.9 *Any changes in Legal Status of the ExTL*

No change: Governmental Body of the Federal Republic of Germany

### 1.10 *Associated Certifying ExCBs*

PTB Division 3, Departments 3.4, 3.5, 3.6, 3.7 (see organisational structure Annex A)

### 1.11 *Financial Support*

PTB has the financial stability and resources required for the operation of the IECEx CB.

## 2. ORGANISATION

### 2.1 *Names, Titles and Experience of the Senior Executives*

Name	Title	Experience
Hans Wehinger	Head of Certification Body	23 Years

### 2.2 *Name, Title and Experience of the Quality Management Representative*

Name	Title	Experience
Uwe Klausmeyer	Head of Department 3.5 "Flame Transmission Processes"	20 years
Ulrich Johannesmeyer	Head of Department 3.6 "Intrinsic Safety"	30 years
Frank Lienesch	Head of WG "explosion Protected Drive-Systems"	8 years

### 2.3 *Name and Title of Nominated Principal Contact*

Name	Title	Comments
Uwe Klausmeyer	As above	

### 2.4 *Other Employees in ExTL activity*

Name	Title	Responsibility
Wolfgang Ellwardt	Department 3.6 Expert on Ex p	

### 2.5 *Organisational Structure (Including Changes since Last Assessment)*

See Annex A

## 3. RESOURCES

There are 32 engineers involved in the testing activity. The test facilities are of excellent standard.

## 4. TEST METHODS

### 4.1 *Procedures*

There are comprehensive procedures at the organisation and department all available via the PTB network.

#### 4.2 Staff Work Instructions

Much of the work has been placed on a computerised system to limit the potential for variation in the approach.

## 5. TEST REPORTS AND RECORDS

IECEx Certificates or ExTRs issued during the past 2 years:

Protection Type	IECEx	Other than IECEx (e.g. ATEX)
flameproof d	2	197
intrinsic safety i	9	153
increased safety e	6	510
powder filled q	none	9
encapsulated m	2	15
type (zone 2) xn	none	50
pressurised p	none	20
Apparatus for Dusts	none	100

There are a lot of other activities in Ex not fitting to the table above.

## 6. ACCREDITATION

PTB holds accreditation to ISO IEC 17025 from UL (based in the USA) and ZLS (the German accreditation body): see Annexes B and C.

## 7. CALIBRATION

The organisation of PTB is the peak body on Germany for metrology and hence there are significant facilities available. However, there is also a lot in calibration done within the Department. All equipment checked was in calibration and subject to appropriate calibration methods.

## 8. DOCUMENTATION

### 8.1 Quality Manual

PTB maintains a comprehensive quality manual.

### 8.2 Document Change Control

The document is based on the authoritative document being on the server.

## 9. INTERNAL AUDIT AND PERIODIC REVIEW

According to PTB Procedure number QM-VA-02. The 2004 Internal Audits were performed between June and September. The records were appropriately filed and open issues were checked based on a fixed schedule.

## 10. COMPLAINTS

According to PTB Procedure number QM-VA-14. The supervising institution is a department in the Federal Ministry of Economy and Labor.

## 11. REVIEW OF ISSUED EXTRS BY ASSESSMENT TEAM

A sample of ExTRs was reviewed covering techniques Ex d, i. e and m. There were no significant issues raised.



## **12. FINDINGS FROM THE ASSESSMENT**

The laboratory was found to have very experienced, competent staff, excellent facilities, and appropriate management structures and procedures.

Several issues were found during the assessment and reported to PTB. These were resolved to the satisfaction of the IECEx Assessment Team. A record of these issues, including subsequent actions, has been provided to the IECEx Secretariat.

## **13. RECOMMENDATIONS**

Based on the results of the re-Assessment performed during September 2 – 3, 2004, the assessment team recommends continuation of acceptance of PTB as an IECEx TL with a scope as shown in Section 1.6 and additional standards listed in Section 1.7 of this report.

### **LIST OF ANNEXES**

Annex A: Division 3 Organization Chart

Annex B: UL Accreditation Certificate

Annex C: ZLS Accreditation Certificate

**Jim Munro**  
**Lead Assessor**

**Heinz Berger**  
**Expert Assessor**

**14 January 2005**

**Annex A**    **Abteilung 3 - Chemische Physik und Explosionsschutz**  
Hemminger

<b>3.1 Metrologie in der Chemie</b>	<b>3.2 Analytische Messtechnik und Druck</b>	<b>3.3 Chemisch- physikalische Stoffeigen- schaften</b>	<b>3.4 Grundlagen des Explosions- schutzes</b>	<b>3.5 Zünddurch- schlags- prozesse</b>	<b>3.6 System- und Eigensicher- heit</b>	<b>3.7 Zündquellen sicherheit</b>
Güttler	Ulbig	Bauer	Bothe	Klausmeyer	Johannsmeyer	Wehinger
<b>Anorganische Analytik</b> Schiel  3.11	<b>Analytische Messtechnik und Feuchte</b> Scholz  3.21	<b>Kalorische Größen</b> Sarge  3.31	<b>Kenngroßen des Explosions- schutzes</b> Brandes  3.41	<b>Druckfeste Kapselung</b> Klausmeyer  3.51	<b>Eigensicherheit</b> Johannsmeyer  3.61	<b>Zertifizierungsstelle für Explosions- schutz</b> Wehinger  3.71
<b>Organische Analytik</b> Henrion  3.12	<b>Gaseigen- schaften</b> Ulbig  3.22	<b>Flüssigkeits- eigenschaften</b> Wolf  3.32	<b>Explosions- dynamik</b> Förster  3.42	<b>Modellierung von Flammen- durchtritten</b> Markus  3.52	<b>Explosions- geschützte Feldbus- und Speisesysteme</b> Gerlach  3.62	<b>Explosionsge- schützte elektrische Antriebssysteme</b> Lienesch  3.72
<b>Elektrochemie</b> Spitzer  3.13	<b>Druck</b> Sabuga  3.23	<b>Festkörper- dichte</b> Bettin  3.33	<b>Berechnungsver- fahren und Daten- banken für den Explosionsschutz</b> Möller  3.43			<b>Physikalische Zündvorgänge</b> Beyer  3.73
		<b>Viskosität um- weltgerechter Schmierstoffe</b> Klingenberg  3.34	<b>Beratung der Ministerien im Explosionsschutz</b> Bothe  3.44			

**Annex B**



**CERTIFICATE OF QUALIFICATION**

Issued by

**Underwriters Laboratories Inc.**

**Physikalisch-Technische Bundesanstalt (PTB)  
Postfach 3345  
D-38023 Braunschweig  
GERMANY**

has been assessed and found eligible to participate in  
Underwriters Laboratories Inc.

**THIRD PARTY TEST DATA PROGRAM**

No. DE006

Issued: October 27, 2003

Expires: October 31, 2004

A handwritten signature in black ink, appearing to read 'Ted V. Hall'.

TED V. HALL

Sr. Vice President and Chief Technical Officer

## Annex C

# AKKREDITIERUNG



**Die Zentralstelle der Länder für Sicherheitstechnik (ZLS)**

– vertreten im Deutschen Akkreditierungsrat –  
bestätigt hiermit, dass die

**Physikalisch-Technische Bundesanstalt (PTB)  
Bundesallee 100, 38116 Braunschweig**

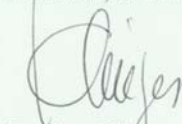
die Anforderungen des § 9 Abs. 2 Gerätesicherheitsgesetz (GSG)  
und der Norm DIN EN ISO/IEC 17025 erfüllt sowie die Kompetenz besitzt,

**Geräte und Schutzsysteme zur bestimmungsgemäßen  
Verwendung in explosionsgefährdeten Bereichen**

im Geltungsbereich der EG-Richtlinie 94/9/EG entsprechend den  
Bestimmungen des Akkreditierungsbescheides Nr. 5.ZLS/3926-1/19/01  
**zu prüfen.**

Die Akkreditierung ist gültig vom **01.08.2001** bis zum **31.07.2006**.  
DAR-Reg.-Nr.: **ZLS-P-361/01**

München, den 23. Januar 2002



Dr.-Ing. Klinger  
Ministerialrat

ZLS im Bayerischen Staatsministerium für Gesundheit, Ernährung und Verbraucherschutz, 80792 München