

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

**Title: Re-assessment Report for the continued acceptance of KEMA Quality
B.V. as an Accepted Testing Laboratory (ExTL).**

To: Members of the IECEx Management Committee, ExMC

Introduction

In accordance with the 5 year re-assessment plan for the surveillance and monitoring of bodies within the IECEx System, this document contains the IECEx Re-assessment Report for KEMA Quality B.V., an Accepted ExTL.

This Report is issued for endorsement during the 2011 ExMC Split Meeting.

It should be noted that from 2011 01 01 KEMA Quality will be known as DEKRA Certification B.V.

Chris Agius

IECEx Secretariat

<p>IECEx Secretariat Standards Australia Building 286 Sussex Street Sydney NSW 2000 Australia</p>	<p>Tel: +61 2 8206 6940 Fax: +61 2 8206 6272 Email: chris.agius@iecex.com</p>
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IECEX ASSESSMENT REPORT FOR KEMA Quality B.V. (IECEX Testing Laboratory, ExTL)

Type of Assessment:

Initial Assessment for Candidate ExTL

Re-Assessment of ExTL X

Scope Extension of ExTL X

1. OBJECT AND FIELD OF APPLICATION

1.1. Country:

The Netherlands

1.2. Name of Candidate ExCB

KEMA Quality B.V.

1.3. Members of the Assessment Team

Mr. Jim Munro, lead assessor

Mr. Vijay Varma, expert assessor

1.4. Place and Date of Assessment

Place: Utrechtseweg 310, 6812 AR Arnhem, The Netherlands

Date: 24-26 March, 2010 (6 man-days)

1.5. Assessment References

- i) IECEx 02 Third Edition 2006-11 IECEx 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)

1.6. Scope of Application

Number	Title
60079-0 Edition 5	Explosive atmospheres - Part 0: Equipment - General requirements
60079-1 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
60079-2 Edition 5	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"
60079-5 Edition 3	Explosive atmospheres - Part 5: Equipment protection by powder filling "q"

Number	Title
60079-6 Edition 3	Explosive atmospheres - Part 6: Equipment protection by oil immersion "o"
60079-7 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
60079-11 Edition 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
60079-15 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
60079-18 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus
60079-25 Edition 2	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems
60079-26 Edition 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
60079-27 Edition 2	Explosive atmospheres – Part 27: Fieldbus intrinsically safe concept (FISCO)
60079-28 Edition 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation (extension of scope)
60079-30-1 Edition 1	Explosive atmospheres – Part 30-1: Electrical resistance trace heating – General and testing requirements
60079-31 Edition 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
61241-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures 'tD'
61241-1-1	Electrical apparatus for use in the presence of combustible dust - Part 1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by enclosures "tD" plus -1
61241-11 Edition 1	Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety 'iD'
61241-18 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"
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

Number	Title
62086-1	IEC 62086-1 Part 1: Electrical apparatus for explosive gas atmospheres Electrical resistance trace heating – Part 1: General and testing requirements

1.7. Candidate ExTL Persons Interviewed

Name	Position
Mr. Arthur van der Meijden	Team / Business Line Manager EX
Mr. Erik Folgering	Operational Manager EX
Mr. Theo Pijpker	Product Expert / Certification Manager EX
Mrs. Anne-Fré Vollema	Quality & Legal Manager
Mrs. Theresa Kaya	Assistant Quality Manager
Mrs. Carla Everhard	Legal department
Mr Han Kuster	Manager Mechanical Manufacturing at MTSA Technopower B.V (subcontractor)
Mr Harry de Wild	Project Manager/Engineer

Note: KEMA EX is in the middle of an organization change from Team to Business Line. As a result, some position descriptions may be altered.

1.8. Legal Entity of the ExTL

KEMA Quality BV is a limited liability company organised under the laws of the Netherlands and since 1 November 2009 has been part of the DEKRA Group. This itemised in 2.2 of the Quality Manual. The company shares are now held by DEKRA.

The legal standing of the company was verified during the site assessment visit.

1.9. Associated ExCB

The ExTL is an integral part of the ExCB KEMA Quality BV located at the same address.

1.10. Financial Support

KEMA Quality BV derives its funding from the charges for its services.

1.11. History

N.V. KEMA was founded in 1927 as the Dutch electricity industry's test house. KEMA Quality B.V. was until 1 November 2009 a business unit of the N.V. KEMA, with testing and certification of household, commercial and industrial products, assessment and certification of Quality Management Systems and Personnel Certification as its core business. From 1 November 2009 KEMA Quality B.V. became a member of the DEKRA Group, with unchanged scope and activities. Since 1991 KEMA Quality B.V. as an ATEX Notified Body has assessed and certified Ex-products and Ex-production sites according to the European Directives. In March 2005 KEMA was approved as IECEx 02 ExCB/ExTL, followed by IECEx 03 ExCB approval in May 2007.

2. ORGANISATION

2.1. Names, Titles and Experience of the Senior Executives

Name	Title	Experience (years)
Mr. Bert Zoetbrood	Managing Director	3
Mr. Arthur van der Meijden	BL Manager EX	15

Name	Title	Experience (years)
Mr. Erik Folgering	Operational Manager EX	3

See for more details the Organization Chart KEMA Quality Group (February 5, 2010)

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

Name	Title	Experience (years)
Mrs. Anne-Fré Vollema	Quality & Legal Manager	24

2.3. Name and Title of Nominated Principal Contact

Name	Title	Experience (years)
Mr. Theo Pijpker	Product Expert EX	19

2.4. Employees in ExTL activity

Name	Title	Experience
M.J.G. Bakker	Engineer	1 year, 9 months
P. Cvetanovic	Engineer	5 years, 2 months
M. Erdhuizen	Engineer	5 years, 2 months
C.G. van Es	Engineer	18 years, 6 months
E. ter Haar	Engineer	11 years, 1 month
P. Hoksbergen	Engineer	4 years 7 months
C.H. Meijerman	Engineer	11 years 5 months
P.T. van Nijen	Engineer	6 years, 6 months
R.H.D. Pommé	Engineer	4 years, 7 months
R. Rouwenhorst	Engineer	1 year, 9 months
L.G. van Schie	Engineer	7 years, 2 months
R. Schuller	Engineer	5 years, 10 months
H.J. Sijrier	Engineer	4 years, 8 months
M.H.B.A. Vleeming	Engineer	2 years, 6 months
H.J.G. de Wild	Engineer	approx. 17 years

2.5. Organizational Structure

See Annex 1, KEMA Quality Group, an overview of the organization. The area considered in this assessment is the area entitled 'BL Explosives'.

See Annex 2, Organization Chart for the Ex Business Line to see the staff within the Ex operation.

The IECEx Assessment Team determined that the structure provides for sufficient and competent resources to fulfil the requirements in delivering IECEx Certification Services in a timely and efficient manner.

3. RESOURCES

The site assessment revealed adequate resources, personnel and facilities, in order to meet the requirements of the IECEx Scheme for the issuing of ExTRs. A high level of competence in the assessment of Ex equipment was demonstrated by all levels of the KEMA Management and Staff.

The KEMA Quality B.V. Ex Business Line comprises a total of 21 Technical staff (18 in Arnhem, NL and 3 in Japan).

4. DOCUMENTATION

4.1. Quality Manual

The on-line (accessible for all staff) KEMA Quality Manual (INFO-ALL-Q-1, dated 2008-07-10) covers all general requirements of ISO Guide 65 and ISO/IEC 17025. The Manual needs to be updated due to the take over of KEMA Quality B.V. by DEKRA.

4.2. Procedures

The KEMA Quality B.V. Quality on-line Management System (QMS) contains all procedures related to the activities of KEMA Quality B.V. This system is predominantly in English to assist with international use of the system. For IECEx 02, the specific procedures are PROD-P-Ex-04 and -05, covering product certification and site audits respectively. In addition there is a document General Manual EX Team that has been developed since the assessment visit. This describes in general terms the KEMA way of working. It is intended as a guideline for all activities within Business Team Explosion Safety (Team Ex). Additional manuals are planned. All working documents like standard checklists, laboratory measurement forms, etc. are kept on EX Sharepoint.

There was an issue with document control of documents in Sharepoint and another where some documents that had been deleted from the QMS but had not been loaded into Sharepoint at the time of the assessment visit. Both were subsequently resolved to the satisfaction of the assessment team.

4.3. Work Instructions

See 4.2.

4.4. Records

For each project a project file is made which includes all correspondence, assessment and test results and certificates. After completion of the work, the complete file is archived in building H40.

4.5. Document Change Control

All documents that are part of QMS are controlled according to KEMA Quality's procedures. The documents on EX Sharepoint are controlled using the procedure of the EX Team, using for each document an appointed document owner and document reviewer. Procedure FLOW-ALL-Q-M10 prescribes minimum retention times for documents. However, in practice obsolete documents are retained indefinitely in EX Sharepoint in a hidden directory not accessible for the users.

4.6. Test Records

See 4.4

5. TEST REPORTS

IECEX ExTRs issued:

Standards	Number of issued reports				Total
	2006	2007	2008	2009	
IEC 60079-0 (Ed.4.0)	42	95	85	92	314
IEC 60079-0 (Ed.5)	0	0	6	32	38
IEC 60079-1 (Ed. 5)	10	19	4	10	43
IEC 60079-1 (Ed.6)	0	4	22	27	53
IEC 60079-7 (Ed.3)	13	29	7	22	71
IEC 60079-7 (Ed.4)	0	15	14	26	55
IEC 60079-11 (Ed.4)	22	27	25	12	86
IEC 60079-11 (Ed.5)	1	10	30	46	87
IEC 60079-15 (Ed.2)	0	16	14	4	34
IEC 60079-15 (Ed.3)	3	3	12	25	43
IEC 60079-18 (Ed.1)	0	0	0	3	3
IEC 60079-18 (Ed.2.0)	2	1	5	7	15
IEC 60079-26 (Ed.1)	9	25	24	23	81
IEC 60079-26 (Ed.2)	0	1	25	28	54
IEC 60079-27 (Ed.1.0)	5	10	16	6	37
IEC 60079-30-1 (Ed.1)	0	6	1	3	10
IEC 61241-0 (Ed.1)	11	26	35	56	128
IEC 61241-1 (Ed.1)	8	23	27	31	89
IEC 61241-11 (Ed.1)	6	6	22	35	69

KEMA has issued hundreds of ATEX reports and site Notifications over the last 5 years as follows:

Year	No. of ATEX reports	No. of ATEX Notifications
2005	246	74
2006	166	56
2007	151	64
2008	143	72
2009	154	76

The IECEx ExTRs are often combined with or used as the basis for an ATEX Test Report.

6. CALIBRATION

All test equipment is calibrated according to ISO/IEC 17025, usually by KEMA's Quality's RvA accredited calibration laboratory. This laboratory was not part of the organisation acquired by DEKRA. All equipment sighted was in calibration.

7. CONFIDENTIALITY

The KEMA Quality BV management system ensures that all staff and any contractors (e.g. MTSA staff) sign a confidentiality agreement which also addresses "conflict of interest". Examples were cited of agreements signed by employees, contractor

employees and members of committees. For more recent employees the confidentiality requirements are built into the employment contracts.

8. NATIONAL ACCREDITATION

KEMA Quality B.V. holds ISO/IEC 17025 accreditation for many activities, but not yet for Ex-. As a result KEMA have been subjected to annual surveillance visits by IECEx. It is recommended that this continues.

9. RECOGNITION AND AGREEMENTS

KEMA Quality B.V. agreements and recognitions include:

- Notified Body under ATEX
- IECEE CB Scheme
- IECEx 03 Scheme
- CSA
- FM
- USCG

10. INTERNAL AUDIT AND PERIODIC REVIEW

KEMA Quality B.V. operates an internal audit program with results being raised at Management reviews.

For internal auditing KEMA Quality has instigated a system of 'topical' audits. The audit teams often include a cross-section of people including technical experts. Audits occur on a regular basis. The results of the last audit were reviewed. There is a spreadsheet which documented the audit details, including its findings. At the time it was not clear how follow-up on the findings occur and it appeared that the auditors were not involved in this process. Subsequently KEMA put in place an improved follow-up system that satisfied the assessment team.

The records of the International Management Review meeting held in April 2009 were reviewed. Reference to IECEx was included in the schemes considered by the meeting and the meeting also covered all other necessary areas. The next meeting was scheduled for the end of April 2010.

11. COMPLAINTS AND APPEALS (including appeals to IECEx)

Any disputes and complaints are dealt with according to article 17 of KEMA's General Terms and Conditions. In the IECEx 02 application forms that KEMA use for all IECEx projects; the client is made aware of the possibility to make an appeal to the IECEx ExMC.

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 are included in a site assessment report and include:

- Details of issues raised and how these have been resolved

- Checklist for ISO/IEC 17025
- Completed technical guidance note (TGD) for Optical Radiation
- Photos of the facilities
- Notes from the assessors

12.2. *Witnessed Tests*

The following tests were witnessed during the re-assessment:

- Use of the spark test apparatus
- Pressure determination for Ex d IIC
- Temperature rise of a luminaire
- Dust testing for IPX6.

All tests were performed competently and demonstrated the capability of KEMA Quality BV staff carry out Ex testing.

13. COMMENTS (Including issues found during assessment)

The only issues that were found during the assessment visit, that were not in common with the ExCB, related to the one of the subcontractors. These were subsequently resolved to the satisfaction of the assessment team with details contained in Annex B of the site assessment report.

14. RECOMMENDATION

Based on the assessment performed on 24, 25 and 26 March 2010, KEMA Quality B.V. is recommended for continued acceptance in the IECEx scheme as an IECEx Testing Laboratory (ExTL) according to the scope of the standards listed in this document, including the extension of scope.

Lead Assessor
Mr. Jim Munro

Expert Assessor
Mr. Vijay Varma

Date: 16 September 2010

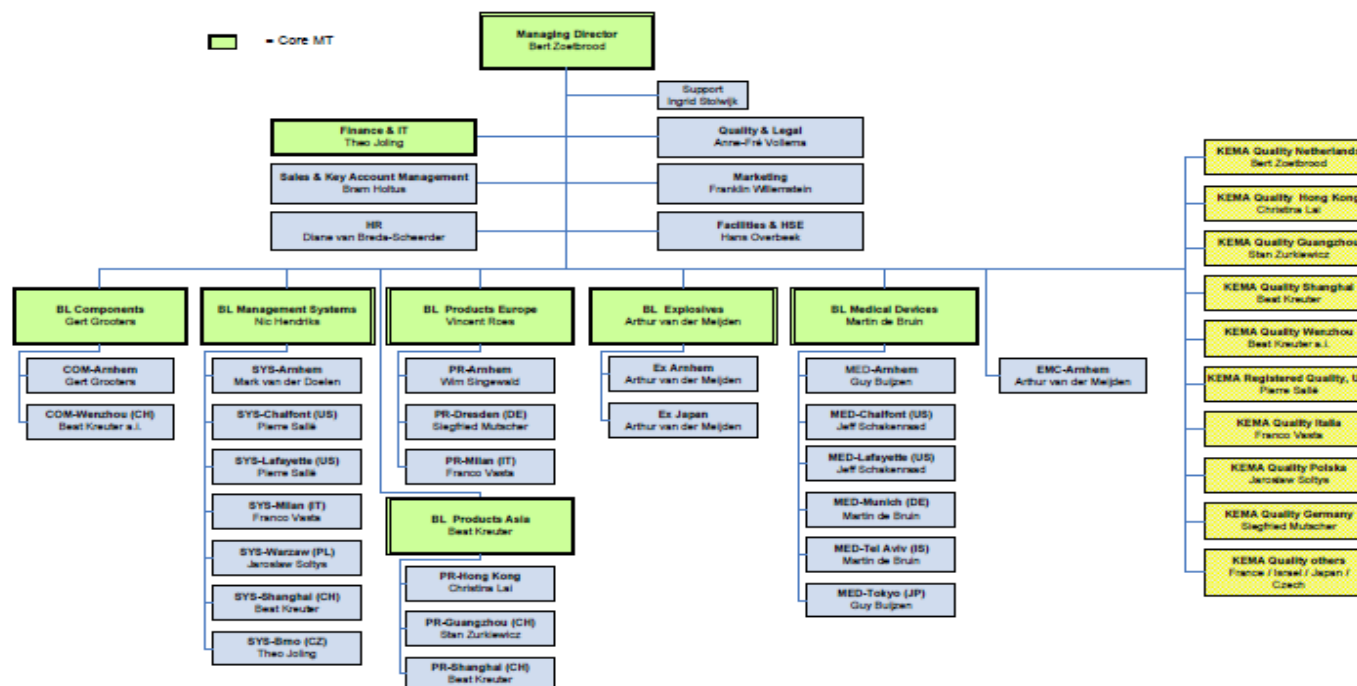
List of Annexes:

1. Overall Organization Chart of KEMA Quality B.V.
2. Organization Chart of the Ex Business Line

Annex 1 Overall Organization Chart of KEMA Quality B.V.



KEMA Quality Group



February 5, 2010

Annex 2

Organization Chart of the Ex Business

