**INTERNATIONAL ELECTROTECHNICAL COMMISSION 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 *Det Norske Veritas (DNV) Certification AS* as an IECEx Test Laboratory (ExTL)**

This document contains the IECEx Assessment Report for the acceptance of ***Det Norske Veritas (DNV) Certification AS* as an IECEx Test Laboratory (ExTL) within the IECEx Scheme.**

The report is hereby submitted for voting

Please consider the assessment report and return the completed voting form to the Secretariat by 2005 09 30. Your speedy response to the voting process will be very much appreciated.

You may return your completed voting form (available in Word format) via fax or e-mail. Details below.

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Secretariat

# IECEx ASSESSMENT REPORT FORM (TEST LABORATORY – ExTL)

## Type of Assessment:

**Initial Assessment for Candidate ExTL** **X**
**Surveillance Assessment for existing ExTL** ☐

## 1. OBJECT AND FIELD OF APPLICATION

**1.1** ***Country:***
**Norway**

**1.2** ***Name of Candidate TL***
Det Norske Veritas (DNV) Certification AS

**1.3** ***Members of The Assessment Team***
Mr C. Agius
Mr V. Varma

***Off site: Document review and support***
Bill Dunn (Expert Assessor)

**1.4** ***Place And Date Of Assessment***
Veritasveien 1
1322 Hovik, Norway

Site Assessors:
Mr C. Agius- Lead Assessor
Mr V. Varma

Following a review of all documentation submitted, by all members of the Assessment Team, a site assessment was conducted on 17 and 18 November 2004. Two assessment team members conducted the site assessment. The site visit included a review and successful completion of the IECEx Technical Guidance Documents (TGDs), now retained on file by the IECEx Secretariat. During the 17 + 18 November 2004 visit some issues were raised concerning alignment of procedures with IECEx Operational Documents. Improvements made by DNV were later reviewed during a follow-up visit, by the Team, on 17 and 18 February 2005.

In noting the improvements made, the Assessment Team felt that the newly introduced procedures had to be used prior to recommending acceptance to ExMC. On this basis, DNV conducted a further two testing and assessment projects (one of them Intrinsic Safety) with the files then submitted for off-site review during 12 and 27 April 2005. The result of the assessment team review of these files was positive, leading the assessment team to recommending acceptance of DNV by the ExMC, see item 15.

**1.5** ***Assessment References***

Document:

i) ISO/IEC Guide 65
i) IECEx 02 Second Edition
ii) IECEx Operational Document OD/005, OD/009, OD/010, OD/012
iii) ISO/IEC 17025
iv) IECEx Technical Guidance Documents
v) ExTL application documents
vi) IECEx Operational Document OD/003 (ExMC/100/CD)

**1.6** ***Scope Of Application***

During the on-site visit the scope of application was confirmed to align with the scope of application as follows:

| **Product Category** | **Standard** |
|---|---|
| General Requirements | IEC 60079-0 |
| Flameproof Enclosures | IEC 60079-1 |
| Pressurised Equipment | IEC 60079-2 |
| Increased Safety | IEC 60079-7 |
| Intrinsic Safety | IEC 60079-11 |
| Encapsulation | IEC 60079-18 |

**1.7** ***Candidate TL Persons Interviewed***

During the course of both site visits most of the Hazloc and related personnel were interviewed. The following are examples of some of the management and staff interviewed during the site assessments.

| **Name** | **Position** |
|---|---|
| **Ms Line Gangskar** | **Head of Section Testing, Product & Personnel Certification** |
| **Mr Bjorn Spongsveen** | **Service Responsible, Hazardous Locations** |
| **Mr Hakon S Hakonsen** | **Senior Engineer** |
| **Mr Kjetil Johansen** | **Test Engineer** |

**1.8** ***Legal Entity Of The Candidate TL***

Det Norske Veritas Certification AS provides testing and certification of products.

All the relevant documents of DNV Certification AS are retained on file at the IECEx Secretariat Offices.

**1.9** ***Associated ACB***

| **Names of Body** | **Address** |
|---|---|
| Det Norske Veritas Certification AS has an integral ExCB | As above |

While the ExTL is integral with the Certification Body, the assessment team are satisfied that the quality management system and operational procedures provide sufficient separation of the testing and certification functions.

**1.10 *Financial Support***

Self funded. DNV Certification AS has its own financial and operational management.

**1.11 *History***

Norwegian insurance companies established DNV Certification AS in 1864 as a national alternative to foreign classification societies. They have been engaged in extensive experimental work since 1955 through their own laboratories facilities and equipment.

DNV is an international, knowledge-intensive organisation, active in fields of maritime, certification, consulting and technology services. They also have laboratories in Belgium, Rotterdam, Singapore, New Jersey, Houston and Abu Dhabi.

**1.12 *Relevant Standards***

As per standards listed in Section 1.6 above, IEC 60079 series.

# 2. ORGANISATION

**2.1 Names, Titles And Experience Of The Senior Executives**

| Name | Title | Experience |
|---|---|---|
| Mr Per Ove Oyberg | Country Manager, Certification | 9 years |
| Ms Line Gangskar | Head of Section | 3 years with testing and Certification |
| Mr Are Larsen Otterdal | Product Certification Coordinator | 12 years (12 years Ex experience) |
| Mr Bjorn Spongsveen | Service Responsible | 16 years (11 years Ex experience) |
| Mr Hakon S Hakonsen | Senior Engineer | 17 years (11 years with electrical Safety and 6 years with Ex equipment) |

**2.2 Name, Title And Experience Of The Quality Management Representative**

| Name | Title | Experience |
|---|---|---|
| Ms Line Gangskar | Head of Section | 3 years with testing and Certification |

**2.3 Name And Title Of Nominated Principal Contact**

| Name | Title |
|---|---|
| Mr Bjorn Spongsveen | Service Responsible, Hazardous Locations |

**2.4 Employees**

**2.4.1 Total Numbers**

Total number in Test Laboratory: 18

**2.4.2 Ex Test Personnel**

Total number in assessment and testing: 6

### 2.5 Organisational Structure

Refer to ExCB Assessment Report ExMC/252/DV, extract from DNV Certification AS Quality Manual for ZNWNO420, Section 2.2.1

# 3. RESOURCES

Total number of DNV staff involved in the Hazloc Group is 6

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 for acceptance by the Assessment Team. This assessment included verification of the necessary test facilities and equipment as well as test and calibration procedures.

# 4. TEST METHODS

### 4.1 Procedures

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

### 4.2 Staff Work Instructions

Same as for 4.1 above

# 5. TEST REPORTS AND RECORDS

### 5.1 Test Reports Issued

The following table is an example

| Type of protection | Number of test reports |
|---|---|
| d | 7 |
| e | 4 |
| i | 8 |
| p | 2 |
| m | 2 |

### 5.2 Test Records

Product certificate records are retained for 10 years.

# 6. CALIBRATION

DNV Certification AS maintains a good calibration system with clear traceability to national Standards. Calibration is also conducted, internally for some instruments using the laboratory Reference Standards, and externally by accredited calibration facilities.

# 7. DOCUMENTATION

### 7.1 *Quality Manual*

The DNV Certification AS Quality Manual has been reviewed during the site assessment and found to fully comply with the IECEx requirements. Documented Management Systems provide a clear differentiation between the operating procedures for testing and certification, under the requirements of IECEx, and that conducted as part of national accreditation. Clear references to IECEx Operational Documents and ExTAG Decision sheets now exist.

### 7.2 *Document Change Control*

A well controlled system of document changes as part of the Quality Management System.

## 8. CONFIDENTIALITY

Adequate arrangements exist for confidentiality agreements to be signed. Confidentiality requirements are stated in the Quality Manual ZNWNO420, Section 3.7

## 9. NATIONAL ACCREDITATION

Norsk Akkreditering (NA): Accredited to carry out testing and certification work. Copy attached as Annex A

## 10. RECOGNITION AND AGREEMENTS

Notified Body for ATEX Directive 94/9/EC
Accreditation criteria for Certification Bodies for product certification
Numerous Agreements with Bodies Worldwide

## 11. INTERNAL AUDIT AND PERIODIC REVIEW

As part of the Quality System, DNV Certification AS conducts regular internal audits in addition to a review of the management system and compliance with ISO/IEC 17025. This internal audit procedure has been amended to ensure compliance with IECEx Rules and operational documents are also included.

## 12. COMPLAINTS MECHANISM

Should DNV Certification AS receive complaints, the procedures demonstrate that they are dealt with under the Quality Management System, which includes the recording and reviewing of complaints in a timely and effective manner by the staff. Complaints of a verbal nature are also covered.

## 13. SPECIAL FACTS TO BE NOTED

Issues raised during the first site assessment visit in November 2004 fall under the following categories: -

- Integration of IECEx Rules and Operational Documents/Procedures into the Quality Management System were not clear
- Insufficient testing and assessment notes on file to backup findings in Test Reports
- Previous Quality System Documentation did not make the separation of testing and certification functions clear

Following the November 2004 site assessment, a complete review of the Quality System, documentation was undertaken by DNV in readiness for a follow-up site assessment visit in February 2005. The follow-up site assessment was conducted by both Team Leader, Mr C Agius and Team Member Mr V Varma with Mr Dunn providing a supporting role as third Team member. While all major issues raised during the first site assessment were satisfactorily addressed and closed, the assessment Team requested that 2 new testing projects be undertaken using the newly revised procedures with 1 project to be related to Intrinsic Safety. Files for both were to be reviewed by Mr Varma during April 2005.

Following completion of the 2 new testing projects, completed testing files were submitted to Mr Varma who undertook a complete audit of the files and supporting information and found that a great deal of improvement had been made since review of previous testing files, sufficient improvements to recommend acceptance of DNV as an ExTL under the IECEx Scheme.

# 14. COMMENTS

In addition to the follow-up actions detailed in 13 above, IECEx Technical Guidance Documents were satisfactorily compiled and reside in the IECEx Secretariat files.

# 15. RECOMMENDATION

In similar fashion to the ExCB application, the Assessment Team recommends acceptance of DNV Certification AS as an IECEx Test Laboratory (ExTL) for the following Ex areas: -

- General Requirements
- Ex d
- Ex p
- Ex e
- Ex i
- Ex m

Furthermore, given the degree and nature of the changes made to the quality management system procedures, the Assessment Team recommends that a site assessment be conducted by an IECEx Assessor, 1 year after the acceptance of DNV as an ExTL, noting that IECEx will be required to conduct a yearly surveillance visit to cover the ExCB acceptance, in lieu of National accreditation to ISO/IEC Guide 65, for Ex certification activities.

## LIST OF ANNEXES

A Accreditation Certificate
B Examples of Photos

***Mr C Agius*** ***Mr V Varma*** ***Mr W Dunn***
***Team Leader***

NORSK
AKKREDITERING

# AKKREDITERINGSDOKUMENT

# TEST 034

**Det Norske Veritas Certification AS, Avdeling ZNCNO 420**
Veritasveien 1
1322 HØVIK

Akkrediteringen omfatter P06 EMC, Elektromagnetisk kompatibilitet, P17 Miljø og P20 Sikkerhet i henhold til de neste sidene i dette dokumentet.

Akkreditering er første gang innvilget 25.04.1995, og er gitt i overensstemmelse med Stortingsprop. nr. 106 (1989/90), og Norsk Akkrediterings statutter fastsatt i Kgl. resolusjon 7. oktober 1993. Laboratoriet tilfredsstiller kravene i NS-EN ISO/IEC 17025.

Akkrediteringen forutsetter regelmessig oppfølging, og er gyldig til 22.04.2008. Akkrediteringsbeslutningen innebærer at Norsk Akkreditering har funnet at organisasjonen oppfyller kravene for akkreditert virksomhet innenfor de aktuelle akkrediteringsområder. Organisasjonen står selv ansvarlig for resultatene av utførte målinger.

Prøvings- og kalibreringslaboratorier som etterlever kravene i denne internasjonale standarden, følger et kvalitetssystem for sine prøvings- og kalibreringsaktiviteter som også møter kravene i ISO 9001 når de er engasjert i design/ utvikling av nye metoder, og/ eller utvikling av testprogrammer som kombinerer standard og ikke-standard prøvings- og kalibreringsmetoder, og ISO 9002 når de kun benytter standard metoder.

NORSK AKKREDITERING

23.4.03 — Dato

Gro Rødland — avdelingsdirektør

**Annex B**
**Photos of some Ex Test Equipment**

**Spark Test Apparatus**


**Climatic Chambers**

**Gas Mixing Ex d**

**Ex d Chamber – small Ex d enclosures**

**IP Test Facilities**