

Plahvatusohtlik keskkond. Osa 34: Kvaliteedisüsteemide rakendamine seadmete tootmisel (ISO/IEC 80079-34:2011, modified)

Explosive atmospheres - Part 34: Application of quality systems for equipment manufacture (ISO/IEC 80079-34:2011, modified)

EESTI STANDARDI EESSÕNA

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**Explosive atmospheres -
Part 34: Application of quality systems for equipment manufacture
(ISO/IEC 80079-34:2011, modified)**

Atmosphères explosives -
Partie 34: Application des systèmes de
qualité pour la fabrication d'équipements
(ISO/CEI 80079-34:2011, modifiée)

Explosionsgefährdete Bereiche -
Teil 34: Anwendung von
Qualitätsmanagementsystemen für die
Herstellung von Geräten
(ISO/IEC 80079-34:2011, modifiziert)

This European Standard was approved by CEN and CENELEC on 25 May 2011.

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Foreword

The text of ISO/IEC 80079-34:2011 has been prepared by Technical Committee IEC TC 31 "Equipment for explosive atmospheres" of the International Electrotechnical Commission (IEC) and has been taken over as EN ISO/IEC 80079-34:2011 by Technical Committee CEN/TC 305 "Potentially explosive atmospheres – Explosion prevention and protection" the secretariat of which is held by DIN. The enquiry took place at ISO/CEN level (31M/31/CDV, CEN Project = WI 00305114). However, the vote on 31M/45/FDIS took place at IEC/CLC level (agreement between ISO and IEC, see also D130/103), under the responsibility of the Technical Committee CENELEC TC 31 "Electrical apparatus for potentially explosive atmospheres".

The text of document 31M/45/FDIS, future edition 1 of ISO/IEC 80079-34:2010, prepared by Technical Committee IEC TC 31 "Equipment for explosive atmospheres", was submitted to the IEC-CENELEC parallel vote.

A draft amendment, prepared by the Technical Committee CEN TC 305 "Electrical Potentially explosive atmospheres – Explosion prevention and protection", was submitted to the CENELEC formal vote.

The combined texts were approved by CEN and CENELEC as EN ISO/IEC 80079-34 on 2011-05-25.

This document supersedes EN 13980:2002.

The significant changes with respect to EN 13980:2002 are the following:

- references have been changed, especially references to CEN/CENELEC and their publications have been changed to references to international available publications;
- foreword and scope have been adapted to international requirements;
- terminology has been changed and adapted to terminology being more customary in the international standardization (e. g. "notified body" has been modified to "body responsible for verification");
- information relevant to particular types of protection has been amended with
 - Ex t - dust ignition protection by enclosure,
 - gas detectors and
 - flame arresters;
- Annex B has been renamed as "Verification criteria for elements with non-measurable paths used as an integral part of a type of protection";
- B.3 has been modified;
- information relevant to equipment and protective systems according to standards harmonized under Directive 94/9/EC are given in new Annex ZB.

This standard should be read in conjunction with EN ISO 9001:2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

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|---|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an harmonized national standard or by endorsement | (dop) | 2012-05-25 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-05-25 |

Annex ZB provides information on those aspects that the quality system should address with respect to particular protection laid down in harmonized standards under Directive 94/9/EC, e.g. types of protection for non-electrical equipment or components, equipment according to specific product standards and autonomous protective systems. It does not add to or otherwise change the requirements of this standard.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 94/9/EC. See Annex ZZ.

The State of the Art is included in Annex ZY “*Significant changes between this European Standard and EN 13980:2002*”.

Annexes ZA, ZB, ZY and ZZ have been added by CEN and CENELEC.

Annex ZA

(normative)

Normative references to international publications and the corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-426	-	International Electrotechnical Vocabulary - Part 426: Equipment for explosive atmospheres	-	-
IEC 60079-0	-	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	-
ISO/IEC 17050-1	-	Conformity assessment - Supplier's declaration of conformity - Part 1: General requirements	EN ISO/IEC 17050-1	-
ISO 9000	2005	Quality management systems - Fundamentals and vocabulary	EN ISO 9000	2005
ISO 9001	2008	Quality management systems - Requirements	EN ISO 9001	2008

Annex ZB (informative)

Information relevant to equipment and protective systems according to standards harmonized under Directive 94/9/EC

ZB.1 Introduction

This annex provides information on those aspects that the quality system should address with respect to particular protection laid down in harmonized standards under Directive 94/9/EC, e.g. types of protection for non-electrical equipment or components, equipment according to specific product standards and autonomous protective systems. It does not add to or otherwise change the requirements of this standard.

This annex provides information how to meet the requirements of this standard, recognizing that other methods achieving the same objectives are equally acceptable; it also draws attention to aspects of requirements that may not be readily apparent to those unfamiliar with quality systems for products intended for use in potentially explosive atmospheres.

The examples can be used by manufacturers to check whether the safety-relevant aspects are considered in the quality system and covered by adequate procedures (see 7.1). They can also be used for internal or external quality audits (see 8.2).

NOTE The following examples do not cover all protection concepts but give some advice and will be supplemented to in the next edition.

ZB.2 Non-electrical equipment (EN 13463-1)

ZB.2.1 General

The following safety aspects as specified in the technical file should be realised by systematic production techniques and/or verifications and tests on the basis of written procedures.

For dust ignition, protection the safety aspects laid down in A.10 may also apply.

ZB.2.2 Non-metallic parts

- Material characteristics;
- finish;
- surface resistance;
- surface area of non-conductive parts;
- limitation of thickness;
- measures for charge bonding (earthed frames).

ZB.2.3 Casing and external parts

- Material of the casing and content of light metals;
- protection of removable parts against unintentional or inadvertent removal;
- materials used for cementing.

ZB.2.4 Earthing and equipotential bonding of conductive parts

- Earthing terminal;
- effective connection of conductive parts;
- voltage equalising cables.

ZB.2.5 Light transmitting parts

- Material;
- integrity;
- guards and protective covers.

ZB.2.6 Ingress protection (IP)

- Weld continuity;
- fitting of gaskets and seals;
- continuity of moulded grooves and tongues;
- application of cements.

ZB.2.7 Completed products

- Instructions are delivered with the equipment;
- instructions include information regarding embedded equipment and components;
- intended marking is fixed;
- intended warning labels are fixed;
- after final testing, products are protected against foreseeable injuries during storage and transport.

ZB.3 Protection by flow restricting enclosure „fr“ (EN 13463-2)

Safety aspects are covered by the general clause for non-electrical equipment (EN 13463-1).

ZB.4 Protection by flameproof enclosure „d“ (EN 13463-3)

The same safety aspects as for electrical equipment apply (see A.3; for aspects of dust ignition protection, see also A.10).

ZB.5 Protection by constructional safety „c“ (EN 13463-5)

ZB.5.1 General

In addition to the safety aspects for non-electrical equipment in ZB.2, the following safety aspects are relevant.

ZB.5.2 Metal-based material

- Material name complying with the requirement;
- material properties (composition with regard to corrosion, thermal conduction and mechanical sparks, mass fraction of aluminium, titanium, magnesium, zirconium, flammability);
- cracks, inclusions, blow holes and porosity (either by a visual test or by another suitable test method depending on exposure);
- heat treatment (e.g. hardening, tempering);
- dimensional accuracy including all parts without machining.

ZB.5.3 Machining

- Compliance with tolerances for shape, position, concentricity, quality of finish;
- dimensional accuracy of functional surfaces (e.g. tolerances for diameters, especially for indicator units preadjustment and correct polarity);
- depth and configuration of cut-in to ensure the constructionally intended stress concentration.

ZB.5.4 Cemented joints and potted assemblies

- Shelf-life and storage of adhesives and casting compounds;
- mixing procedure;
- surface treatment (degreasing or equivalent measures are usually required immediately before the potting-process to ensure proper adhesion);
- curing process, which should include curing time, any relevant environmental factors and all provisions made to ensure that the curing process will proceed without disturbance.

ZB.5.5 Assembling

- Correct components and parts;
- distances between moving parts or between fixed and moving parts;
- equipotential bonding between subassemblies;
- mechanical seals;
- protective covers.