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**BSI Standards Publication**

## **Explosive atmospheres**

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Part 34: Application of quality systems for ex product manufacture

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## National foreword

This British Standard is the UK implementation of EN ISO/IEC 80079-34:2020. It is identical to ISO/IEC 80079-34:2018. It supersedes BS EN ISO/IEC 80079-34:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EXL/23, Explosion and fire precautions in industrial and chemical plant.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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English Version

## Explosive atmospheres - Part 34: Application of quality systems for ex product manufacture (ISO/IEC 80079-34:2018)

Atmosphères explosives - Partie 34: Application de systèmes de management de la qualité pour la fabrication des produits Ex (ISO/CEI 80079-34:2018)

Explosionsgefährdete Bereiche - Teil 34: Anwendung von Qualitätsmanagementsystemen für die Herstellung von Ex-Produkten (ISO/IEC 80079-34:2018)

This European Standard was approved by CEN on 29 December 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

The text of ISO/IEC 80079-34:2018 has been prepared by Technical Committee ISO/TMB "Technical Management Board - groups" of the International Organization for Standardization (ISO) and has been taken over as EN ISO/IEC 80079-34:2020 by Technical Committee CEN/TC 305 "Potentially explosive atmospheres - Explosion prevention and protection" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by March 2023.

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

This document supersedes EN ISO/IEC 80079-34:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directives, see informative Annex ZA, ZB, ZC and ZD, which are an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO/IEC 80079-34:2018 has been approved by CEN as EN ISO/IEC 80079-34:2020 without any modification.

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**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.

<b>Publication</b>	<b>Year</b>	<b>Title</b>	<b>EN/HD</b>	<b>Year</b>
IEC 60050-426	—	International Electrotechnical Vocabulary — Part 426: Equipment for explosive atmospheres	—	—
IEC 60079-0	—	Explosive atmospheres — Part 0: Equipment — General requirements	EN IEC 60079-0	2018
ISO 9000	2015	Quality management systems — Fundamentals and vocabulary	EN ISO 9000	2015

## **Annex ZB** (informative)

### **Information relevant to equipment and protective systems according to standards harmonized under Directive 2014/34/EU**

#### **ZB.1 Introduction**

The requirements laid down in the Directive and the standards harmonized under the Directive are the basis for the quality assurance of the production process and the assessment of the quality system as well. The quality system must ensure that the products resulting from the regular production process comply with the types tested in the EU-type examination and with the applicable requirements of the Directive.

This annex draws attention to a number of standards harmonized under the Directive which can be used to gain detailed information on specific requirements. These references might be useful for manufacturers to check whether the safety-relevant aspects are considered in the quality system and covered by adequate procedures (see 8). They can also be used for internal or external quality audits (see 9.1 and 9.2).

In quality system assessments according to Annexes IV and VII of Directive 2014/34/EU performed by a Notified Body the auditing team must have knowledge with regard to the product specific requirements according to the Directive.

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

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

Safety aspects are covered by clause A.14 for non-electrical equipment (EN ISO 80079-36).

#### **ZB.3 Protection by flow restricting enclosure "fr" (EN 13463-2)**

Safety aspects are covered by the general clause for non-electrical equipment (EN ISO 80079-36).

#### **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)**

Safety aspects are covered by clause A.15 for non-electrical equipment (EN ISO 80079-37).

#### **ZB.6 Protection by control of ignition sources "b" (EN 13463-6)**

Safety aspects are covered by clause A.16 for non-electrical equipment (EN ISO 80079-37).

#### **ZB.7 Protection by pressurised enclosures "p" (EN 13463-7)**

The same safety aspects as for electrical equipment apply (A.6), according to A.14.1.



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## **ZB.8 Protection by liquid immersion "k" (EN 13463-8)**

Safety aspects are covered by clause A.17 for non-electrical equipment (EN ISO 80079-37).

## **ZB.9 Fans (EN 14986)**

### **ZB.9.1 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.

### **ZB.9.2 Material**

- Selection of specified materials; material name complies 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 another suitable test method depending on exposure);
- heat treatment (e.g. hardening, tempering);
- dimensional accuracy including all parts without machining.

### **ZB.9.3 Assembled equipment and protective systems**

- Adaption of suitable electrical equipment (explosion group, temperature class, equipment category);
- adaption of specified protective systems for fans of category 1G.

### **ZB.9.4 Routine tests**

- Sealing systems (fit, lubrication, initial tension, primary pressure);
- dynamic vibrations (e.g. critical rotation speed, bearing at standstill or at transport);
- functional test of the complete assembly (distance between rotor/stator modules, clamping, clearance, free room of motion);
- excess rotation speed;
- thickness of linings;
- impeller-shaft attachment (avoidance of drift, joint is secured against loosening);
- mounting of autonomous protective systems, if applicable;
- functional test of the temperature monitoring devices in the flame arresters, if applicable;
- pressure test for fans of category 1G, if applicable.