

Electrical apparatus for potentially explosive atmospheres - Group I - Intrinsically safe systems - Part 1: Construction and testing

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50394-1:2004 sisaldab Euroopa standardi EN 50394-1:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 25.05.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 50394-1:2004 consists of the English text of the European standard EN 50394-1:2004. This document is endorsed on 25.05.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This European Standard contains the requirements for construction and testing of Group I intrinsically safe electrical systems intended for use, as a whole or in part, in atmospheres susceptible to firedamp.	Scope: This European Standard contains the requirements for construction and testing of Group I intrinsically safe electrical systems intended for use, as a whole or in part, in atmospheres susceptible to firedamp.
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ICS 29.260.20

Võtmesõnad:

**Electrical apparatus for potentially explosive atmospheres –
Group I – Intrinsically safe systems
Part 1: Construction and testing**

Matériels électriques pour atmosphères
explosibles –
Système de sécurité intrinsèque du
groupe I
Partie 1: Construction et essais

Elektrische Betriebsmittel für
explosionsgefährdete Bereiche –
Gruppe I: Eigensichere Systeme
Teil 1: Konstruktion und Prüfung

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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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This European Standard was prepared jointly by a mining working group, convened under SC 31-3, Intrinsically safe apparatus and systems "i", of Technical Committee CENELEC TC 31, Electrical apparatus for explosive atmospheres.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50394-1 on 2003-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2004-10-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-10-01

This European Standard was prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association to set down requirements for the design and construction of equipment in support of the essential safety and health requirements described in the European Directive 94/9/EC "Equipment and protective systems intended for use in potentially explosive atmospheres".

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Introduction

When the European Directive 94/9/EC came into force on 1 March 1996, the requirements relating to intrinsically safe electrical systems were identified as requiring revision.

The EU Commission issued the following interpretation, following a request from CENELEC TC 31:

- "a) intrinsically safe systems are not protective systems as defined in Article 1(3b) of the directive. They can be equipment, as defined in Article 1(3a), or components, as defined in Article 1(3c) and are in such cases within the scope of the directive;
- b) intrinsically safe systems have to undergo the relevant conformity assessment procedures of the directive, if they are placed on the market as a complete system and, therefore, to be considered as equipment or components;
- c) in case an intrinsically safe system comprises several separate products, which are designed to be assembled by the user, each single product, which is within the scope of the directive and placed on the market separately, has to undergo the relevant conformity assessment procedure of the directive;
- d) the resulting system has to be seen as an installation and it is, as such, not subject to the procedures and requirements of the directive. This does not exclude that there might be national regulations related to the use of intrinsically safe systems, which have to be applied. In this context the use of EN 50039 could be useful."

As a result of the above interpretation, CENELEC SC 31-3 decided to produce a revised version of EN 50039 with separate parts for mining (Group I) and non-mining industries (Group II). Accordingly, this standard is the mining industry document dealing with the construction and testing of Group I intrinsically safe systems.

1 Scope

1.1 This European Standard contains the requirements for construction and testing of Group I intrinsically safe electrical systems intended for use, as a whole or in part, in atmospheres susceptible to firedamp.

1.2 This European Standard supplements EN 50020, the requirements of which apply to electrical apparatus used in intrinsically safe electrical systems.

It is intended to apply to

- systems placed on the market by a manufacturer or their authorised representative, or
- systems assembled by the user, using products separately conforming with EN 50020.

NOTE If the user intends to assemble a system using a product not conforming with EN 50020, then the user assumes the responsibilities of the system manufacturer and needs to follow the conformity assessment procedure.

1.3 This European Standard does not deal with the selection of suitable equipment, or the installation of intrinsically safe electrical apparatus, associated electrical apparatus, to form an intrinsically safe electrical system.

NOTE National Regulations may impose additional requirements for the selection, installation and use of intrinsically safe systems in mines.

2 Normative references

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.

<u>Publication</u>	<u>Title</u>
EN 50014	Electrical apparatus for potentially explosive atmospheres - General requirements
EN 50020	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety 'i'
EN 50303	Group I Category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust

3 Definitions

For the purpose of this European Standard, the following definitions apply. They supplement the definitions, which are given in EN 50014, EN 50020, and EN 50303.

3.1 intrinsically safe electrical system

interconnected items of electrical apparatus, described in a descriptive system document, in which the circuits or parts of circuits intended to be used in potentially explosive atmospheres, are intrinsically safe circuits

3.2 conformity-assessed intrinsically safe electrical system

a complete system placed on the market, conforming with 3.1 which has undergone the relevant conformity assessment procedures and complies with the requirements of this standard