

**PLAHVATUSOHTLIKUD KESKKONNAD.
OSA 10-2: PIIRKONDADE LIIGITUS.
PLAHVATUSOHTLIKUD TOLMKESKKONNAD**

Explosive atmospheres - Part 10-2: Classification of areas - Explosive dust atmospheres (IEC 60079-10-2:2015)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60079-10-2:2015 sisaldab Euroopa standardi EN 60079-10-2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 60079-10-2:2015 consists of the English text of the European standard EN 60079-10-2:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.03.2015.	Date of Availability of the European standard is 06.03.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.260.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Explosive atmospheres - Part 10-2: Classification of areas - Explosive dust atmospheres (IEC 60079-10-2:2015)

Atmosphères explosives - Partie 10-2: Classement des
emplacements - Atmosphères explosives poussiéreuses
(IEC 60079-10-2:2015)

Explosionsgefährdete Bereiche - Teil 10-2: Einteilung der
Bereiche - Staubexplosionsgefährdete Bereiche
(IEC 60079-10-2:2015)

This European Standard was approved by CENELEC on 2015-02-20. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 31J/244/FDIS, future edition 2 of IEC 60079-10-2, prepared by SC 31J "Classification of hazardous areas and installation requirements" of IEC/TC 31 "Equipment for explosive atmospheres" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60079-10-2:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-11-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-02-20

This document supersedes EN 60079-10-2:2009.

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

Endorsement notice

The text of the International Standard IEC 60079-10-2:2015 was approved by CENELEC as a European Standard without any modification.

IEC 60079-2	NOTE	Harmonized as EN 60079-2.
IEC 60079-11	NOTE	Harmonized as EN 60079-11.
IEC 60079-14	NOTE	Harmonized as EN 60079-14.
IEC 60079-28	NOTE	Harmonized as EN 60079-28.
IEC 60079-18	NOTE	Harmonized as EN 60079-18.
IEC 60079-31	NOTE	Harmonized as EN 60079-31.
IEC 60079-32-2	NOTE	Harmonized as EN 60079-32-2.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-0 (mod)	-	Explosive atmospheres -- Part 0: Equipment - General requirements	EN 60079-0	-
IEC 60079-10-1	-	Explosive atmospheres -- Part 10-1: Classification of areas - Explosive gas atmospheres	+A11 EN 60079-10-1	2013
ISO/IEC 80079-20-2	-	Explosive atmospheres - Part 20-2: Material characteristics - Combustible dusts test methods	-	-

This document is a preview generated by EVS

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	9
3 Terms and definitions	9
4 Area classification	12
4.1 General.....	12
4.2 Area classification procedure for explosive dust atmospheres.....	13
4.3 Competence of personnel	14
5 Sources of release.....	14
5.1 General.....	14
5.2 Dust containment.....	14
5.3 Identification and grading of sources of release	14
6 Zones.....	15
6.1 General.....	15
6.2 Extent of zones.....	15
6.2.1 General	15
6.2.2 Zone 20.....	15
6.2.3 Zone 21	16
6.2.4 Zone 22.....	16
7 Dust layers	16
8 Documentation	17
8.1 General.....	17
8.2 Drawings, data sheets and tables	17
8.2.1 Content of documents.....	17
8.2.2 Preferred Symbol key for area classification zones.....	18
Annex A (informative) Area classification examples	19
A.1 Examples of zones.....	19
A.1.1 General	19
A.1.2 Zone 20.....	19
A.1.3 Zone 21	19
A.1.4 Zone 22.....	19
A.2 Bag emptying station within a building and without exhaust ventilation.....	20
A.3 Bag emptying station with exhaust ventilation	21
A.4 Cyclone and filter with clean outlet outside building	21
A.5 Drum tipper within a building without exhaust ventilation.....	22
Annex B (informative) Housekeeping	24
B.1 Introductory remarks.....	24
B.2 Levels of housekeeping	24
Annex C (informative) Hybrid mixtures	26
C.1 General.....	26
C.2 Ventilation.....	26
C.3 Explosive limits.....	26
C.4 Chemical reactions	26
C.5 Minimum ignition parameters	26

C.6 Final classification	26
Bibliography.....	27
Figure 1 – Identification of zones on drawings	18
Figure A.1 – Bag emptying station within a building and without exhaust ventilation	20
Figure A.2 – Bag emptying station with exhaust ventilation	21
Figure A.3 – Cyclone and filter with clean outlet outside building	22
Figure A.4 – Drum tipper within a building without exhaust ventilation.....	23
Table 1 – Designation of zones depending on presence of dust	16

This document is a preview generated by EVS

INTRODUCTION

Dusts, as defined in this standard, are hazardous because when they are dispersed in air by any means they may form potentially explosive atmospheres. Furthermore, layers of dust may ignite and act as ignition sources for an explosive atmosphere.

This part of IEC 60079 gives guidance on the identification and classification of areas where such hazards from dust can arise. It sets out the essential criteria against which the ignition hazards can be assessed and gives guidance on the design and control parameters which can be used in order to reduce such a hazard. General and special criteria are given for the process of identification and classification of hazardous areas.

This standard contains an informative Annex A giving examples for classifying areas.

This document is a preview generated by EVS

EXPLOSIVE ATMOSPHERES –

Part 10-2: Classification of areas – Explosive dust atmospheres

1 Scope

This part of IEC 60079 is concerned with the identification and classification of areas where explosive dust atmospheres and combustible dust layers are present, in order to permit the proper assessment of ignition sources in such areas.

In this standard, explosive dust atmospheres and combustible dust layers are treated separately. In Clause 4, area classification for explosive dusts clouds is described, with dust layers acting as one of the possible sources of release. In Clause 7 other general considerations for dust layers are described.

The examples in this standard are based on a system of effective housekeeping being implemented in the plant to prevent dust layers from accumulating. Where effective housekeeping is not present, the area classification includes the possible formation of explosive dust clouds from dust layers.

The principles of this standard can also be followed when combustible fibres or flyings might cause a hazard.

This standard is intended to be applied where there can be a risk due to the presence of explosive dust atmospheres or combustible dust layers under normal atmospheric conditions (see Note 1).

NOTE 1 Atmospheric conditions include variations in pressure and temperature above and below reference levels of 101,3 kPa (1 013 mbar) and 20 °C (293 K), provided that the variations have a negligible effect on the explosive properties of the combustible materials.

It does not apply to

- underground mining areas,
- dusts of explosives that do not require atmospheric oxygen for combustion such as pyrophoric substances, propellants, pyrotechnics, munitions, peroxides, oxidizers, water-reactive elements or compounds, or other similar materials.
- catastrophic failures which are beyond the concept of abnormality dealt with in this standard,
- any risk arising from an emission of toxic gas from the dust.

This standard does not apply to where a hazard might arise due to the presence of flammable gas or vapour, but the principles may be used in the assessment of a hybrid mixture (see also IEC 60079-10-1).

NOTE 2 Additional guidance on hybrid mixtures is provided in Annex C.

This standard does not take into account the effects of consequential damage following a fire or an explosion.