Elektriseadmed kasutamiseks põleva tolmu olemasolu puhul. Osa 2-1: Katsemeetodid. Meetodid tolmu minimaalse süttimistemperatuuri kindlaksmääramiseks

Electrical apparatus for use in the presence of combustible dust - Part 2-1: Test methods - Methods for determining the minimum ignition temperatures of dust

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50281-2-1:2001 sisaldab Euroopa standardi EN 50281-2-1 + Corr.:1998 ingliskeelset teksti. Käesolev dokument on jõustatud 19.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 50281-2-1:2001 consists of the English text of the European standard EN 50281-2-1 + Corr.:1998. This document is endorsed on 19.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies two test methods for determining the minimum ignition temperatures of dust for the purpose of selecting electrical apparatus for use in the presence of combustible dust in accordance with EN 50281-1-2 and constructed in accordance with EN 50281-1-1.	**Scope:** This European Standard specifies two test methods for determining the minimum ignition temperatures of dust for the purpose of selecting electrical apparatus for use in the presence of combustible dust in accordance with EN 50281-1-2 and constructed in accordance with EN 50281-1-1.

ICS 29.260.20

Võtmesõnad: combustible dust, electrical apparatus, minimum ignition temperatures, tests

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50281-2-1

September 1998

ICS 29.260.20

English version

Electrical apparatus for use in the presence of combustible dust Part 2-1: Test methods - Methods for determining the minimum ignition temperatures of dust

Matériels électriques destinés à être utilisés en présence de poussières combustibles
Partie 2-1: Méthodes d'essai
Méthodes de détermination de la température minimale d'inflammation de la poussière

Elektrische Betriebsmittel zur Verwendung in Bereichen mit brennbarem Staub
Teil 2-1: Untersuchungsverfahren
Verfahren zur Bestimmung der Mindestzündtemperatur von Staub

This European Standard was approved by CENELEC on 1998-09-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 50281-2-1:1998 E

Foreword

This European Standard was prepared by the 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 EN 50281-2-1 on 1998-09-01.

This European Standard was prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the EC Directive 94/9/EC.

The following dates have been 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)	1999-09-01
- latest date by which national standards conflicting with the EN have to be withdrawn	(dow)	1999-09-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and B are normative.

Contents

Introduction

This European Standard describes methods for determining the minimum ignition temperature of dust for the purpose of selecting electrical apparatus. These are:

- Method A: Dust layer on a heated surface at a constant temperature (clause 4);

- Method B: Dust cloud in a furnace at a constant temperature (clause 5).

Method A determines the minimum ignition temperature of a **dust layer** on a prescribed heated surface.

Method B determines the minimum ignition temperature of a **dust cloud** within a prescribed heated furnace.

The test methods are of a general nature, and may be used for purposes of comparison, but in certain industrial situations further tests may be necessary.

The methods for determining the minimum ignition temperatures are not suitable for use with recognized explosives, for example, gunpowder, dynamite, or mixtures of substances which may, under some circumstances, behave similarly.

Where there is doubt, an indication of the existence of a hazard due to explosive properties may be obtained by testing a very small quantity of the dust on a surface at 400 °C or higher, located remotely from the operator.

1 Scope

This European Standard specifies two test methods for determining the minimum ignition temperatures of dust for the purpose of selecting electrical apparatus for use in the presence of combustible dust in accordance with EN 50281-1-2:1998 and constructed in accordance with EN 50281-1-1:1998.

These methods are not suitable for use with substances having explosive properties.

Method A (clause 4) is applicable to the determination of the minimum temperature of a prescribed hot surface which will result in the decomposition and/or ignition of a layer of dust of a specified thickness deposited on it. The method is particularly relevant to industrial equipment with which dusts are present on hot surfaces in thin layers exposed to the atmosphere.

Method B (clause 5) is applicable to the determination of the minimum temperature of a prescribed hot surface which will result in the ignition of a cloud of given sample of dust or other particulate solid. The test is intended to be carried out as a complementary test after determining the minimum ignition temperature of a dust layer by method A of this European Standard.

NOTE 1 concerning method B: Because the method of operation of the furnace gives short residence times for dust particles within it, this method of test is applicable to industrial equipment where dust is present as a cloud for a short time. This method of test is of small scale and the results are not necessarily representative of all industrial conditions.

NOTE 2 concerning method B: The method is not applicable to dusts which may, over a longer period of time than provided for in the test method, produce gasses from deposits generated during pyrolysis or smouldering.

2 Normative references

EN 50281-1-1	Electrical apparatus for use in the presence of combustible dust Part 1-1: Electrical apparatus protected by enclosures - Construction and testing
EN 50281-1-2	Electrical apparatus for use in the presence of combustible dust Part 1-2: Electrical apparatus protected by enclosures - Selection, installation and maintenance
ISO 565	Test sieves - Metal wire cloth, perforated metal plate and electroformed sheet - Nominal sizes of openings
ISO 4225	Air Quality - General aspects - Vocabulary.

3 Definitions

For the purpose of this European Standard the following definitions apply:

3.1 dust: Small solid particles that settle out under their own weight but that may remain suspended in air for some time in the atmosphere (includes dust and grit as defined in ISO 4225).