



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 50281-2-1:1999

ICS 29.260.20

**ELECTRICAL APPARATUS FOR USE IN THE
PRESENCE OF COMBUSTIBLE DUST.
PART 2-1: TEST METHODS - METHODS FOR
DETERMINING THE MINIMUM IGNITION
TEMPERATURES OF DUST**

National Standards
Authority of Ireland
Dublin 9
Ireland

Tel (01) 807 3800
Tel (01) 807 3838

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on
February 26, 1999*

**NO COPYING WITHOUT NSAI
PERMISSION EXCEPT AS
PERMITTED BY COPYRIGHT
LAW**

© NSAI 1999

Price Code K

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 50281-2-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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 Verwen-
dung 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

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

| | Page |
|---|-----------|
| Foreword | 2 |
| Introduction | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Definitions | 5 |
| 4 Method A: dust layer on a heated surface at a constant temperature | 6 |
| 4.1 Preparation of dust sample | 6 |
| 4.2 Test apparatus | 6 |
| 4.3 Procedure | 8 |
| 4.4 Test acceptance criteria | 9 |
| 4.5 Reporting of results | 10 |
| 4.6 Application of results | 10 |
| 5 Method B: dust cloud in a furnace at a constant temperature | 11 |
| 5.1 Preparation of dust sample | 11 |
| 5.2 Test apparatus | 11 |
| 5.3 Procedure | 11 |
| 5.4 Air pressure | 12 |
| 5.5 Criterion of ignition | 12 |
| 5.6 Minimum ignition temperature of a dust cloud | 12 |
| 5.7 Reporting of results | 12 |
| Annex A Method A - Construction of a heated surface and measurement of surface temperature on the surface | 13 |
| Annex B Construction of a constant temperature furnace | 19 |

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.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-