

SVENSK STANDARD

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Explosive atmospheres – Part 20-2: Material characteristics – Combustible dusts test methods (ISO/IEC 80079-20-2:2016)

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The European Standard EN ISO/IEC 80079-20-2:2016 has the status of a Swedish Standard. This document contains the official English version of EN ISO/IEC 80079-20-2:2016.

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EUROPEAN STANDARD

EN ISO/IEC 80079-20-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 29.260.20

Supersedes EN 61241-2-2:1995

English Version

**Explosive atmospheres - Part 20-2: Material
characteristics - Combustible dusts test methods (ISO/IEC
80079-20-2:2016)**

Atmosphères explosives - Partie 20-2: Caractéristiques
des produits - Méthodes d'essai des poussières
combustibles (ISO/IEC 80079-20-2:2016)

Explosionsfähige Atmosphären - Teil 20-2:
Werkstoffeigenschaften - Prüfverfahren für brennbare
Stäube (ISO/IEC 80079-20-2:2016)

This European Standard was approved by CEN on 18 February 2016.

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (EN ISO/IEC 80079-20-2:2016) has been prepared by Technical Committee ISO/TMBG "Technical Management Board - groups" in collaboration with 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

The significant changes with respect to EN 61241-2:1995 are included in Annex ZB "*Significant changes with respect to IEC 61241-2-1:1994, IEC 61241-2-2:1993 and IEC 61241-2-3:1994*".

This document supersedes EN 61241-2-2:1995.

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 2014/34/EU.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Extensions to the marking scheme described in the Directive are found in the ATEX Guidelines published by the European Commission. These are particularly useful for equipment that conforms to more than one category.

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

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Endorsement notice

The text of ISO/IEC 80079-20-2:2016 has been approved by CEN as EN ISO/IEC 80079-20-2:2016 without any modification.

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Significant changes with respect to IEC 61241-2-1:1994, IEC 61241-2-2:1993 and IEC 61241-2-3:1994

Explanation of the significance of the changes	Clause	Type		
		Minor and editorial changes	Extension	Major technical changes
Normative references	2	X		
Terms and Definitions	3	X		
Dust sample Requirements	4	X		
Combustible Dust Determination	5	X		
Procedure for Characterisation of combustible dust or combustible flying	6	X		
Test methods for determination of a combustible dust or a combustible flying	7	X		
MIT of a dust cloud	8.1	X		
MIT of a dust layer	8.2	X		
MIE of a dust/air mixture	8.3	X		
Tests on resistivity	8.4	X		
Measurement of temperature distribution on the surface of the hot plate	Annex A	X		
Godbert-Greenwald oven	Annex B	X		
Examples of spark-generating systems	Annex C	X		
Vertical tube apparatus	Annex D	X		
20-litre sphere	Annex E	X		
BAM oven	Annex F	X		
Data for dust explosion characteristics	Annex G	X		
1m ³ vessel	Annex H	X		

EXPLOSIVE ATMOSPHERES –

Part 20-2: Material characteristics – Combustible dusts test methods

1 Scope

This part of ISO/IEC 80079 describes the test methods for the identification of combustible dust and combustible dust layers in order to permit classification of areas where such materials exist for the purpose of the proper selection and installation of electrical and mechanical equipment for use in the presence of combustible dust.

The standard atmospheric conditions for determination of characteristics of combustible dusts are:

- temperature -20 °C to $+60\text{ °C}$,
- pressure 80 kPa (0,8 bar) to 110 kPa (1,1 bar) and
- air with normal oxygen content, typically 21 % v/v.

The test methods defined do not apply to:

- recognized explosives, propellants (e.g. gunpowder, dynamite), or substances or mixtures of substances which may, under some circumstances, behave in a similar manner or
- dusts of explosives and propellants that do not require atmospheric oxygen for combustion, or to pyrophoric substances.

2 Normative references

None.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

combustible dust

finely divided solid particles, 500 μm or less in nominal size, which may form explosive mixtures with air at standard atmospheric pressure and temperatures

Note 1 to entry: This includes dust and grit as defined in ISO 4225.

Note 2 to entry: The term 'solid particles' is intended to address particles in the solid phase but does not preclude a hollow particle.

3.1.1

conductive dust

combustible metal dusts and other combustible dusts with electrical resistivity equal to or less than $1 \times 10^3\ \Omega\cdot\text{m}$

Note 1 to entry: Metal dust is treated as conductive dust because it is assumed that surface oxidation cannot be depended upon to always ensure electrical resistivity greater than $1 \times 10^3\ \Omega\cdot\text{m}$