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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated tools – Dust measurement procedure – Part 1: General requirements

Outils électroportatifs à moteur – Procédure de mesure de la poussière – Partie 1: Exigences générales



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 Test procedure 8
4.1 General 8
4.2 Test room and equipment 8
4.3 Operating conditions 9
4.4 Acceptance criteria 11
5 Instrumentation 11
5.1 Instrumentation for measuring operating conditions 11
5.2 Instrumentation for measuring climatic conditions 11
6 Information to be reported 12

Figure 1 – Positions of dust samplers and workpiece for the measurement of only one dust fraction 13
Figure 2 – Positions of dust samplers and workpiece for the measurement of two dust fractions 14

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRIC MOTOR-OPERATED TOOLS – DUST MEASUREMENT PROCEDURE –

Part 1: General requirements

FOREWORD

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IEC 63241-1 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
116/655/FDIS	116/666/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document is to be used in conjunction with the appropriate parts of IEC 63241-2 or IEC 63241-3, which contain clauses that supplement or modify the corresponding clauses in this document to provide the relevant requirements for each type of product.

The following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

A list of all parts of the IEC 63241 series, under the general title: *Electric motor-operated tools – Dust measurement procedure*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

INTRODUCTION

Inhalable dust emitted by electric motor-operated tools can present a hazard to the operator and other exposed persons.

Therefore, this document specifies a procedure to measure the **dust** concentration produced by an electric power tool under standardized conditions representing typical applications. However, the **dust** concentration during actual use of the power tool can differ from the **dust** concentration measured in accordance with this document depending on the ways in which the tool is used.

The results of **dust** measurements can be used

– for a declaration of the **dust** emission;

– for comparing the **dust** emission from tools of the same type; or

– in a preliminary assessment of **dust** exposure at a workplace.

For all purposes, it is important to specify measurement procedures with known accuracy so that the results of measurements taken by different laboratories can be compared.

The measurements of **dust** concentration are made in accordance with EN 1093-9:1998 and EN 1093-9:1998/A1:2008 for the test room.

ELECTRIC MOTOR-OPERATED TOOLS – DUST MEASUREMENT PROCEDURE –

Part 1: General requirements

1 Scope

This document specifies general requirements for the **dust** measurement of electric motor-operated tools supplied from mains or from batteries. This document applies to those tools with and without a **dust extraction unit** where **dust** such as mineral **dust** containing silica or wood **dust** is expected.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1093-9:1998, *Safety of machinery – Evaluation of the emission of airborne hazardous substances – Part 9: Pollutant concentration parameter, room method*
EN 1093-9:1998/A1:2008

EN 13205 (all parts), *Workplace exposure – Assessment of sampler performance for measurement of airborne particle concentrations*

ISO 7708:1995, *Air quality – Particle size fraction definitions for health-related sampling*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
accessory
device that is attached only to the output mechanism of the tool

3.2
detachable battery pack
battery which is contained in a separate enclosure from the battery tool and is intended to be removed from the tool for charging purposes

3.3
dust
distribution of solid materials in gases, generated by mechanical processes

Note 1 to entry: According to ISO 7708:1995, two size categories are to be differentiated: the **inhalable dust** and the **respirable dust** fraction.

3.4
dust extraction unit
suction device, connected to the **dust**/chip outlet of the tool or a **dust** capturing attachment, for collecting **dust** emitted from the tool during working

Note 1 to entry: A **dust extraction unit** can be either an external one (such as a **dust** extractor or a centralized exhaust system) or an integral one.

3.5
dust sampler
device for collecting the **respirable dust** portion and **inhalable dust** portion by aspirating a measured amount of **dust**-laden air and deposition of the **dust** on an integrated filter

3.6
fully charged battery
battery charged to the maximum state of charge permitted by the battery charging system intended for use with the tool

3.7
inhalable dust
dust fraction which can be taken up by the respiratory system in accordance with ISO 7708:1995

3.8
maximum air flow rate
highest air flow rate created by an external **dust extraction unit**, including the specified hose, with no tool attached

3.9
maximum vacuum
highest vacuum level created by an external **dust extraction unit**, including the specified hose with the end of the hose blocked and with no bypass

3.10
quartz
mineral derived from crystalline silica

3.11
rated frequency
frequency assigned to the tool by the manufacturer

3.12
rated frequency range
frequency range assigned to the tool by the manufacturer

Note 1 to entry: It is expressed by its lower and upper limits.

3.13
rated voltage
voltage assigned to the tool by the manufacturer

Note 1 to entry: For three-phase supply, it is the voltage between phases.

3.14
rated voltage range
voltage range assigned to the tools by the manufacturer

Note 1 to entry: It is expressed by its lower and upper limits.