



SLOVENSKI STANDARD
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**Izpostavljenost na delovnem mestu - Meritve prašnosti razsutih materialov - 3. del:
Metoda trajnega padanja**

Workplace exposure - Measurement of the dustiness of bulk materials - Part 3:
Continuous drop method

Exposition am Arbeitsplatz - Messung des Staubungsverhaltens von Schüttgütern - Teil
3: Verfahren mit kontinuierlichem Fall

Exposition sur les lieux de travail - Mesure du pouvoir de resuspension des matériaux
pulvérulents en vrac - Partie 3: Méthode de la chute continue

Ta slovenski standard je istoveten z: prEN 15051-3

[oSIST prEN 15051-3:2024](https://standards.slovenski-institut.si/standards/sist/15051-3:2024)

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13.040.30 Kakovost zraka na delovnem mestu Workplace atmospheres
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English Version

Workplace exposure - Measurement of the dustiness of bulk materials - Part 3: Continuous drop method

Exposition sur les lieux de travail - Mesure du pouvoir
de resuspension des matériaux pulvérulents en vrac -
Partie 3: Méthode de la chute continue

Exposition am Arbeitsplatz - Messung des
Staubungsverhaltens von Schüttgütern - Teil 3:
Verfahren mit kontinuierlichem Fall

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If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (prEN 15051-3:2024) has been prepared by Technical Committee CEN/TC 137 “Assessment of workplace exposure to chemical and biological agents”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15051-3:2013.

prEN 15051-3:2024 includes the following significant technical changes with respect to EN 15051-3:2013:

- The introduction was revised to better explain the purpose of dustiness testing;
- 4.3: Change in the tolerance of relative humidity (RH): Previously, RH was specified at (50 ± 10) % RH; now, it is specified at (50 ± 5) %;
- 5.8: Limit of detection (LOD) and limit of quantification (LOQ) has been added for the determination and reporting of LOD and LOQ of the weighing of the filters, and the 80 ppi and 20 ppi foams.

EN 15051 Workplace exposure – Measurement of the dustiness of bulk materials consists of the following parts:

- *Part 1: Requirements and choice of test methods;*
- *Part 2: Rotating drum method;*
- *Part 3: Continuous drop method.*

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Introduction

This document gives details of the design and operation of the continuous drop test method that categorizes the dustiness of solid bulk materials, in terms of health-related mass fractions.

The dustiness values of a specific method can be used for comparing and ranking powders and are useful for the purpose of safety by design and risk assessment. A dustiness categorization is presented to provide users (e.g. manufacturers, producers, occupational hygienists and workers) with information on the potential for dust emissions when the bulk material is handled or processed in workplaces. It provides the manufacturers of bulk materials with information that can help to improve their products. It allows the users of the bulk materials to assess the effects of pre-treatments, and also to select less dusty products, if available. It is envisaged that different branches of industry might develop their own categorization schemes using experimentally determined dustiness values of the bulk materials of interest.

However, dustiness test methods measure dust at source emission and does not consider the transportation of the airborne particles within a workplace environment to the breathing zone of a worker. Concentrations of respirable or inhalable dust in the workplace air, resulting from the processing and handling of bulk materials, will depend on a wide variety of factors (e.g. environmental factors, quantity used, engineering controls, transport of particles from source to worker's breathing zone, type of activities). Therefore, dustiness values do not provide workplace exposure concentrations.

Although this document does not discuss in detail the analysis of dust released from bulk materials (except in terms of health-related fractions), the test method produces samples with the potential for chemical analysis of the contents. However, it is important to understand that for a mixture, the mass percentage of a substance in the bulk material will be different (lower or higher) to the mass percentage of the same substance in the dust collected by the respirable and inhalable samplers using the continuous drop.

This document was originally developed based on the results of the European project SMT4-CT96-2074 Development of a Method for Dustiness Testing (see [1]). This project investigated the dustiness of 12 bulk materials, with the intention to test as wide a range of bulk materials as possible, i.e. magnitude of dustiness, industrial sectors, chemical composition and particle size distribution. The first revision considered important comments from industrial users of the standard (e.g. Industrial Minerals Association), a number of research papers (for example, [2] and [3]) and the potential influence of the expanding database of dustiness results. In this revised version, the performance and characteristics of the metal foams for the sampling of the respirable fraction and important comments from industrial users of the standard have been taken into account.

For the measurement of dustiness of bulk materials that possibly contain or release nano-objects and their agglomerates and aggregates (NOAA) using the rotating drum, the reader should consult the EN 17199 series [8, 9].