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**Coating powders —  
Part 10:  
Determination of deposition efficiency**

*Poudres pour revêtement —  
Partie 10: Détermination du rendement d'application*

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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

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# iTeh Standards

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 8130-10:1998), which has been technically revised. The main changes compared to the previous edition are as follows:

- the test report has been modified;
- the precision data have been deleted;
- the text has been editorially revised and the normative references have been updated.

A list of all parts in the ISO 8130 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html)

## Coating powders —

### Part 10: Determination of deposition efficiency

#### 1 Scope

This document specifies a method for determining the mass fraction in per cent (%) of a sprayed coating powder which is deposited on a test item under known spray gun and environmental conditions.

The method is applicable to powders applied by corona or tribo charging and can be used to compare the deposition efficiency of different powders with the same or different gun with the same powder.

This method is only used for comparison when powders or guns are evaluated consecutively, as the influence of the environment and the equipment can vary significantly with time and location.

#### 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.

ISO 8130-14, *Coating powders — Part 14: Vocabulary*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

#### 3 Terms and definitions

[ISO 8130-10:2021](https://standards.iteh.ai/catalog/standards/iso/10fd0ae0-6df9-4573-82b1-5285b145a2fc/iso-8130-10-2021)

For the purposes of this document, the terms and definitions given in ISO 8130-14 and the following apply.

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

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

##### 3.1

##### deposition efficiency

proportion of the mass of powder deposited compared to the mass of powder sprayed, expressed as a mass fraction in per cent

#### 4 Principle

The method consists of spraying charged powder, at a known flow rate and under known conditions of temperature and humidity. The powder is sprayed onto five similar steel items each wrapped in an aluminium foil. The mass of powder deposited onto the central item is determined, from which the deposition efficiency is calculated.

The operation is performed in an air extraction booth.

The results are dependent on the following properties of the powder:

- a) chemical composition;
- b) density;
- c) particle size distribution;
- d) particle shape;
- e) flow properties of its mixture in air;
- f) moisture content.

## 5 Apparatus

Ordinary laboratory apparatus, together with the following.

**5.1 Set of test items**, consisting of five steel tubes of external diameter 25 mm and length 500 mm. The tubes have a hole drilled at one end to enable the items to be hung vertically. Each item shall be properly earthed.

**5.2 Clean aluminium foil**, of commercial quality.

**5.3 Suspension device**, from which the five tubes can be hung vertically in line at equal distances of 95 mm to 105 mm as measured from the centre.

**5.4 Vacuum-cleaner bag**.

**5.5 Oven**, capable of melting the powder.

**5.6 Balance**, accurate to 0,1 g. [ISO 8130-10:2021](https://standards.iteh.ai/catalog/standards/iso/10fd0ae0-6df9-4573-82b1-5285b145a2fc/iso-8130-10-2021)  
<https://standards.iteh.ai/catalog/standards/iso/10fd0ae0-6df9-4573-82b1-5285b145a2fc/iso-8130-10-2021>

**5.7 Timing device**, accurate to 0,1 s.

**5.8 Powder spray system**, consisting of either a corona or a tribo charge spray gun suitably mounted in an air extraction booth together with a suitable powder collection device.

**5.9 Non-conductive shield or powder collection device**, sufficiently large to prevent powder emitted from the spray gun from impinging on the items before and after the test, and sufficiently mobile to be moved away for the period of test.

## 6 Sampling

Take a representative sample of the product to be tested as described in ISO 15528.

A sample of 2 kg is recommended.