

---

---

**Coating powders —**

**Part 10:**

**Determination of deposition efficiency**

*Poudres pour revêtement —*

*Partie 10: Détermination du rendement d'application*



## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8130-10 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

ISO 8130 consists of the following parts, under the general title *Coating powders*:

- *Part 1: Determination of particle size distribution by sieving*
- *Part 2: Determination of density by gas comparison pyknometer (referee method)*
- *Part 3: Determination of density by liquid displacement pyknometer*
- *Part 4: Calculation of lower explosion limit*
- *Part 5: Determination of flow properties of a powder/air mixture*
- *Part 6: Determination of gel time of thermosetting coating powders at a given temperature*
- *Part 7: Determination of loss of mass on stoving*

© ISO 1998

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet central@iso.ch  
X.400 c=ch; a=400net; p=iso; o=isos; s=central

Printed in Switzerland

- *Part 8: Assessment of the storage stability of thermosetting powders*
- *Part 9: Sampling*
- *Part 10: Determination of deposition efficiency*
- *Part 11: Inclined-plane flow test*
- *Part 12: Determination of compatibility*

This document is a preview generated by EVS

This document is a preview generated by EVS

## 1 Scope

This part of ISO 8130 is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products.

It specifies a method for determining the percentage by mass of a sprayed coating powder which is actually deposited on a standard test target when powder is sprayed at the target from a spray gun under standard conditions.

The method is applicable to powders applied by corona charging or tribo charging.

The method may be used to compare the deposition efficiency of different powders with the same gun or of different guns with the same powder.

This method should only be 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.

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;

and also on the test conditions, including:

- g) spray pattern produced by the gun;

- h) gun air pressure;
- i) gun voltage;
- j) gun polarity;
- k) air humidity.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 8130. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8130 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members IEC and ISO maintain registers of currently valid International Standards.

ISO 8130-9:1992, *Coating powders – Part 9: Sampling*.

## 3 Definitions

For the purposes of this part of ISO 8130, the following definition applies:

**3.1 deposition efficiency:** The proportion of the mass of powder deposited compared to the mass of powder sprayed, expressed as a percentage.

## 4 Principle

The method consists of spraying charged powder, at a known flow rate and under known conditions of atmospheric temperature and humidity, at the central one of five similar steel targets each wrapped in aluminium foil. The mass of powder deposited on the central target is determined, from which the deposition efficiency is calculated.

The operation is performed in an air extraction booth.

## 5 Apparatus

**5.1 Set of targets,** 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 targets to be hung vertically. Each target shall be properly earthed.

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