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SS-EN ISO 8130-1:2019

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Pulverfärg –
Del 1: Bestämning av partikelstorlek genom siktning (ISO 8130-1:2019)

Coating powders –
Part 1: Determination of particle size distribution by sieving (ISO 8130-1:2019)

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Denna standard ersätter SS-EN ISO 8130-1:2010, utgåva 1

The European Standard EN ISO 8130-1:2019 has the status of a Swedish Standard. This document contains the official version of EN ISO 8130-1:2019.

This standard supersedes the SS-EN ISO 8130-1:2010, edition 1

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Denna standard är framtagen av kommittén för Färg och lack, SIS/TK 433.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 8130-1

May 2019

ICS 87.040

Supersedes EN ISO 8130-1:2010

English Version

Coating powders - Part 1: Determination of particle size distribution by sieving (ISO 8130-1:2019)

Poudres pour revêtement - Partie 1: Détermination de la distribution granulométrique par tamisage (ISO 8130-1:2019)

Pulverlacke - Teil 1: Bestimmung der Teilchengrößenverteilung durch Sieben (ISO 8130-1:2019)

This European Standard was approved by CEN on 8 March 2019.

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European foreword

This document (EN ISO 8130-1:2019) has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 139 “Paints and varnishes” 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of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

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

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The text of ISO 8130-1:2019 has been approved by CEN as EN ISO 8130-1:2019 without any modification.

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Coating powders —

Part 1:
Determination of particle size distribution by sieving

1 Scope

This document specifies a method for the determination of the particle size distribution of coating powders by sieve analysis. Particle size distributions with a maximum of less than 100 µm is determined by laser diffraction, ISO 8130-13. This method is used especially for determining the oversize material or for the presence of contamination and can be used as a quality control procedure ("go"/"no go" test) by checking the amount retained on a single sieve.

The following particle sizes are typical for coating powders, however the particle size can deviate depending on the application:

— thin-film technology: 1 µm to 63 µm;

— electrostatic coating: 10 µm to 200 µm;

— fluidizing-bed method: 100 µm and above.

NOTE Sieves with a mesh size smaller than 32 µm are not practical and are likely to become blind during use.

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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8130-14 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 http://www.electropedia.org/

4 Principle

A weighed amount of the coating powder is separated into fractions by one or more sieves and the mass of the retained fraction on the sieve is determined. Sieve analysis can be carried out by using individual sieves or with a set of sieves either manually or using a machine. The transport of the coating powder particles through the sieve mesh is due to either gravity, shear and/or flow forces.

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5 Apparatus

Ordinary laboratory apparatus, together with the following:

5.1 Test sieve with a sieve bottom, as specified in ISO 3310-1 and ISO 3310-2, circular with a sieving area having a diameter of 200 mm. Sieves with a sieving area having a diameter of 300 mm may also be used. The frame and the mesh of the test sieves shall be of metal. The range of nominal mesh apertures shall be between 32 µm and 300 µm or as agreed between the interested parties and shall comply with the specifications in ISO 565 for supplementary sizes, see Annex A. The test sieve shall be covered with a transparent lid.

The choice of mesh apertures, see Annex A, will depend on the test sample. If the approximate particle size distribution of the sample is known, then it is necessary to use only those test sieves that are appropriate to the particular particle size range. It is also permissible to restrict the choice of test sieves to those that give sufficient data for a specific purpose. Appropriate details shall be agreed between the interested parties.

5.2 Air-jet sieve apparatus (see Figure 1), consisting of a cylindrical casing which contains the test sieve (5.1). In the base of the casing shall be an outlet to which an extractor fan is connected and an air inlet to permit the injection of air.

The air inlet is connected to a jet rotating at 20 min^{-1} to 25 min^{-1} and consisting of a slot-shaped nozzle arranged radially beneath and very close to the sieve mesh. When the jet rotates, it blows air continuously through the mesh, preventing the coating powder particles from blocking the test sieve. The air is then extracted through the outlet, drawing the finer particles through the sieve.

The flow of air is controlled by adjusting a slot at the outlet.

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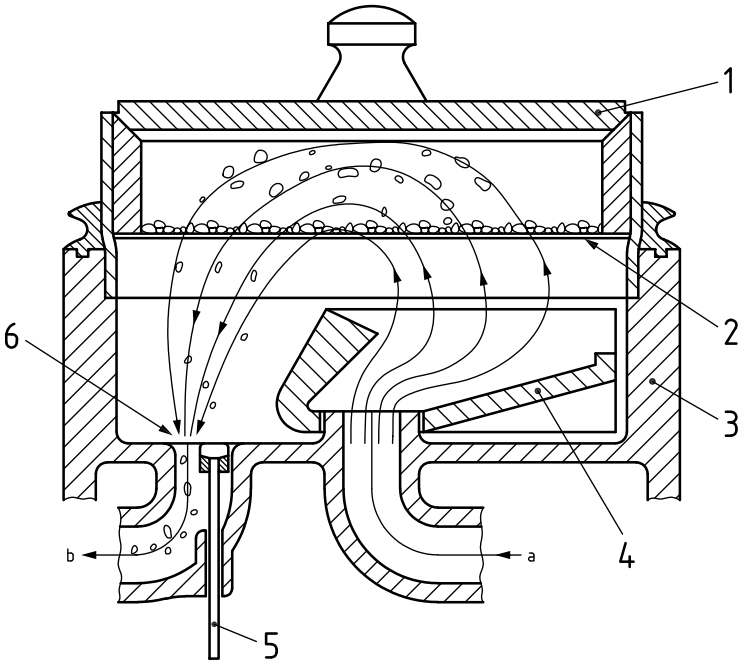

Key

1 transparent lid
2 sieve
3 casing
4 rotating rim
5 manometer
6 adjustable slot
a Air inlet.
b To vacuum pump.

NOTE This diagram illustrates the functioning of the air-jet sieve apparatus and is schematic only.

Figure 1 — Air-jet sieve apparatus

5.3 Vibratory sieve machine, consisting of a cylindrical casing which contains the test sieve (5.1). The machine can be set up with either a single sieve or can be used with a set of sieves stacked in order of decreasing particle size thereby allowing particles to pass through the apertures into a collection pan at the bottom of the stack. The degree of vibration may be machine dependent or as agreed between interested parties. Ensure that the coating powder particles are not shattered due to attrition.

5.4 Balance, capable of weighing to the nearest 0,01 g.

5.5 Mallet, up to 200 g in weight, with a plastics head, suitable for tapping the apparatus to dislodge deposited powder.

5.6 Magnifying glass, of magnification at least ×5.

5.7 Ultrasonic cleaning bath, to clean the sieve mesh.

5.8 Soft hair pencil brush, to manually clear the apertures.