# INTERNATIONAL STANDARD

**ISO 8130-7**

First edition
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## Coating powders —

## Part 7:
Determination of loss of mass on stoving

*Poudres pour revêtement —*
*Partie 7: Détermination de la perte de masse à la cuisson*

Reference number
ISO 8130-7:1992(E)

## 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 8130-7 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Sub-Committee 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*

— *Part 8: Assessment of the storage stability of thermosetting powders*



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— *Part 9: Sampling*

Annex A forms an integral part of this part of ISO 8130.

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# Coating powders —

# Part 7:
# Determination of loss of mass on stoving

## 1 Scope

This part of ISO 8130 specifies a method for the determination of loss of mass on stoving of coating powders that are to be applied by electrostatic spraying on to a substrate.

NOTES

1 The method described in this part of ISO 8130 is a simple, practical test which provides sufficiently accurate results with coating powders that lose up to about 2 % (*m/m*) on stoving. Above this, accuracy decreases with increasing loss in mass.

2 Any water present in the product under test is included in the test result.

## 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 842:1984, *Raw materials for paints and varnishes — Sampling*.

## 3 Required supplementary information

For any particular application, the test method specified in this part of ISO 8130 needs to be completed by supplementary information. The items of supplementary information are given in annex A.

## 4 Apparatus

Ordinary laboratory apparatus, together with the following:

**4.1 Flat-bottomed dish**, of tinplate or aluminium, approximately 75 mm in diameter.

The dimensions of the dish are not critical, but the base shall be flat to ensure good thermal contact and to permit the test portion of the coating powder to be spread to a thin, even layer (the thickness of powder can have a significant influence on the test result).

**4.2 Air-circulation oven**, capable of maintaining temperatures up to 250 °C. The type of oven shall be stated in the test report, as the design of the oven can influence the test result.

**4.3 Analytical balance**, capable of weighing to 0,1 mg.

**4.4 Desiccator**, containing a desiccant such as dried silica gel impregnated with cobalt chloride.

## 5 Sampling

Take a representative sample of the product to be tested, as described in ISO 842.

## 6 Procedure

Carry out the determination in duplicate.

### 6.1 Test portion

Dry the dish (4.1) in the oven (4.2) at the specified or agreed test temperature (see annex A) for 15 min and allow it to cool to room temperature in

the desiccator (4.4). Weigh the dish to the nearest 0,1 mg. Then weigh into the dish, to same accuracy, a test portion of (0,5± 0,05) g ($m_0$). By gentle movement of the dish, holding the dish with tweezers, spread the test portion evenly over the bottom of the dish.

NOTE 3 A test portion of 0,5 g in a dish of 75 mm diameter gives a layer with a thickness of about 60 µm.

### 6.2 Determination

Carry out the stoving at the temperature and for the time specified or agreed (see annex A).

Place the dish with the test portion (6.1) in the oven (4.2), previously adjusted to the appropriate temperature, and leave it for the specified or agreed period. In order to aid rapid heat transfer, place the dish on a metal plate, at oven temperature, in the oven.

NOTE 4 There is a possibility that, with forced air circulation, oven powder will be displaced by the fan of the oven prior to melting. It is therefore recommended that the fan be switched off for a short time at the beginning of the determination.

When the appropriate period of heating is completed, transfer the dish to a desiccator and allow it to cool to room temperature. Weigh the dish and stoved test portion to the nearest 0,1 mg and determine the mass of the stoved material ($m_1$).

## 7 Expression of results

Calculate the loss of mass on stoving, $L$, expressed as percentage by mass, using the equation

$$L = \frac{m_0 - m_1}{m_0} \times 100$$

where

$m_0$ is the mass, in grams, of the test portion before stoving;

$m_1$ is the mass, in grams, of the test portion after stoving.

If the results of the duplicate determinations differ by more than 0,2 % (absolute), repeat the procedure described in clause 6.

Calculate the mean of two valid determinations and report the result to the nearest 0,01 % ($m/m$)

## 8 Precision

No precision data are at present available.

## 9 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the product tested;

b) a reference to this part of ISO 8130 (ISO 8130-7);

c) the items of supplementary information referred to in annex A ;

d) the type of oven used;

e) the result of the test (individual values and mean value);

f) any deviation from the test method specified;

g) the date of the test.

# Annex A
(normative)

## Required supplementary information

The items of supplementary information listed in this annex shall be supplied as appropriate to enable the method to be carried out.

The information required should perferably be agreed between the interested parties and may be derived, in part or totally, from an international or national standard or other document related to the product under test.

a) Temperature of stoving.

b) Period of stoving.

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**Descriptors:** coatings, powdery materials, paints, stoving, tests, determination, mass losses, weight losses on heating.

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