BRITISH STANDARD

BS EN ISO 11125-2:1997
BS 7079-E7: 1994
(Incorporating Amendment No. 1 to BS 7079-E7:1994 (which it renumbers as BS EN ISO 11125-2:1997)

CONFIRMED
DECEMBER 1998

Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives —

Part 2: Determination of particle size distribution

The European Standard EN ISO 11125-2:1997 has the status of a British Standard

ICS 25.220.10; 87.020

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Surface Treatments and Coatings Standards Policy Committee (STC/-) to Technical Committee STC/21, upon which the following bodies were represented:

Association of Consulting Engineers
British Chemical Engineering Contractors' Association
British Coatings Federation Ltd.
British Constructional Steelwork Association Ltd.
British Grit Association
British Railways Board
British Steel Industry
Department of Transport
Electricity Association
Institute of Corrosion
National Federation of Painting and Decorating Contractors
Oil and Colour Chemists' Association
Paint Research Association
Royal Society of Chemistry

This British Standard, having been prepared under the direction of the Surface Treatments and Coatings Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 March 1994

The following BSI references relate to the work on this standard:
Committee reference STC/21
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Amendments issued since publication

Amd. No.	Date	Comments
9730	November 1997	Indicated by a sideline in the margin

Contents

National foreword

This British Standard has been prepared by Technical Committee STC/21 and is the English language version of EN ISO 11125-2:1997 *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 2: Determination of particle size distribution,* published by the European Committee for Standardization (CEN). It is identical with ISO 11125-3:1993, published by the International Organization for Standardization (ISO).

International Standard ISO 11125-2 was prepared by Technical Committee ISO/TC 35, Paints and varnishes, Subcommittee SC 12. Preparation of steel substrates before application of paints and related products.

The other Parts of BS EN ISO 11125 are:

— *Part 1: Sampling;*

— *Part 3: Determination of hardness;*

— *Part 4: Determination of apparent density;*

— *Part 5: Determination of percentage defective particles and of microstructure;*

— *Part 6: Determination of foreign matter;*

— *Part 7: Determination of moisture.*

Cross-reference

Publication referred to	Corresponding British Standard
EN ISO 11125-1:1997 (ISO 11125-1:1993)	BS EN ISO 11125 *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives* Part 1:1997 *Sampling*

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN ISO title page, pages 2 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11125-2

June 1997

ICS 87.020

Descriptors: Paints, varnishes, substrates, steel products, blast-cleaning, abrasives, metallic abrasives, tests, size classification, grain size analysis, sieve analysis

English version

Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 2: Determination of particle size distribution

(ISO 11125-2:1993)

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Méthodes d'essai pour abrasifs métalliques destinés à la préparation par projection —
Partie 2: Analyse granulométrique
(ISO 11125-2:1993)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen — Prüfverfahren für metallische Strahlmittel —
Teil 2: Bestimmung der Korngrößenverteilung
(ISO 11125-2:1993)

This European Standard was approved by CEN on 1997-05-28. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN ISO 11125-2:1997 E

Foreword

The text of the International Standard from Technical Committee ISO/TC 35, Paints and varnishes, of the International Organization for Standardization (ISO) has been taken over as a European Standard by 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 December 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.

According to CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

NOTE Normative references to International Standards are listed in Annex ZA (normative)

1 Scope

This is one of a number of parts of ISO 11125 dealing with the sampling and testing of metallic abrasives for blast-cleaning.

The types of metallic abrasive and requirements on each are contained in the various parts of ISO 11124.

The ISO 11124 and ISO 11125 series have been drafted as a coherent set of International Standards on metallic blast-cleaning abrasives. Information on all parts of both series is given in Annex A.

This part of ISO 11125 specifies a test method for the determination of particle size distribution of metallic blast-cleaning abrasives by sieving.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11125. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11125 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings.*

ISO 11125-1:1993, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 1: Sampling.*

3 Apparatus

Ordinary laboratory apparatus and glassware, together with the following:

3.1 *Balance*, capable of weighing to an accuracy of 0,1 g.

3.2 *Test sieves*, circular, with a height of 25 mm to 50 mm and a sieving area approximately 200 mm diameter, made of woven metal wire cloth. The frame of the test sieves shall be of metal. The range of nominal mesh apertures depends on the specification for the product to be tested and shall comply with the requirements of Table 2 in ISO 565:1990 as indicated in Table 1. The sieves shall have square openings. A lid and a residue pan shall also be provided.

NOTE 1 Smaller-diameter sieves may not produce accurate separation of the sample.

Sieves shall be regularly checked for calibration and freedom from retained abrasive.

Table 1 — List of sieve mesh apertures to be used (from ISO 565:1990; R20/3 and R40/3 sizes)

mm	mm	mm
0,045	0,355	1,40
0,053	0,425	1,70
0,063	0,500	2,00
0,075	0,600	2,36
0,125	0,710	2,80
0,180	0,850	3,35
0,250	1,00	4,00
0,300	1,18	4,75

3.3 *Rotating and tapping machine*, to agitate the sample. Sieving shall be carried out in a suitable type of sieving machine having both a rotatory movement and a vertical movement producing a sharp jolting or tapping action. The machine shall be placed on a solid base.

NOTE 2 Hand sieving, or other mechanical systems based on vibration or rotation only, will not produce accurate separation of the sample.

3.4 *1/1 sample divider*

4 Sampling

Take a representative sample of the product to be tested, as described in ISO 11125-1.

5 Procedure

Carry out the determination in duplicate.

5.1 Using the 1/1 sample divider (**3.4**), obtain a sample of approximately 100 g.

5.2 Weigh out, using the balance (**3.1**), (100 ± 0,5) g of the sample (m_0).

NOTE 3 Increased test-portion mass may lead to inaccurate separation.

5.3 Use all the test sieves listed against the grade under test as given in the grade and screening specification table in the appropriate part of ISO 11124 (see Annex A) or, in the case of materials not covered by ISO 11124, as otherwise agreed between the interested parties.

5.4 Arrange the test sieves (**3.2**) with the largest-aperture sieve on the top and progress to the smallest aperture at the bottom, with a pan to catch any abrasive that falls through the finest sieve.

5.5 Place the test portion in the top sieve.

5.6 Place a cover over the top sieve.

5.7 Place the stack of sieves with the test portion in the rotating and tapping machine (**3.3**) and agitate for a minimum of 10 min for round abrasives and a minimum of 15 min for angular abrasives.

NOTE 4 The agitation time is chosen so that increasing it by 5 min will result in no more than a 0,5 % change in the cumulative mass retained for any sieve in the stack.

5.8 Carefully remove the top sieve from the stack and transfer any retained abrasive on to the balance pan. Brush the sieve clean of any trapped abrasive and add this to the balance pan. Weigh to the nearest 0,1 g and record this result (m_1). Repeat for all the sieves in the stack, including the retaining pan, adding each fraction retained to that previously weighed. Calculate and record the cumulative percentage retained for each sieve. If less than 99 % of the original mass is re-captured, retest.

6 Expression of results

For each test sieve used, and for the residue in the pan, calculate the percentage of material retained R, expressed as a percentage by mass, using the equation

$$R = \frac{m_1}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of the residue on the sieve (or in the pan).

If the duplicate determinations of cumulative material retained for each test sieve differ by more than 10 % (relative to the higher result), repeat the procedure described in clause **5**.

Calculate the mean of two valid determinations of cumulative material retained.

Report the result to the nearest 1 %.

7 Precision

Variation of sieve openings within the limits allowable in ISO 565 can cause major differences in results on the same material. Where deviation is experienced, an exchange of samples or sieves between customer and supplier is strongly recommended.

8 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the product tested in accordance with the appropriate part of ISO 11124 (see Annex A), if applicable;

b) a reference to this part of ISO 11125 (ISO 11125-2);

c) the result of the test;

d) any deviation from the test method specified;

e) the date of the test;

f) the name of the person who carried out the test.

Annex A (informative) International Standards for metallic blast-cleaning abrasives

Requirements and test methods for metallic blast-cleaning abrasives are contained in ISO 11124 and ISO 11125, respectively.

ISO 11124 will consist of the following parts, under the general title:

Preparation of steel substrates before application of paints and related products — Specification for metallic blast-cleaning abrasives

— Part 1: General introduction and classification

— Part 2: Chilled-iron grit

— Part 3: High-carbon cast-steel shot and grit

— Part 4: Low-carbon cast-steel shot

— Part 5: Cut steel wire

ISO 11125 will consist of the following parts, under the general title:

Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives

— Part 1: Sampling

— Part 2: Determination of particle size distribution

— Part 3: Determination of hardness

— Part 4: Determination of apparent density

— Part 5: Determination of percentage defective particles and of microstructure

— Part 6: Determination of foreign matter

— Part 7: Determination of moisture

— Part 8: Determination of abrasive mechanical properties

Annex ZA (normative)
Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Title	EN	Year
ISO 11125-1	1993	*Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 1: Sampling*	EN ISO 11125-1	1997

List of references

See national foreword.

BS EN ISO 11125-2:1997
BS 7079-E7: 1994

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British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

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389 Chiswick High Road
London
W4 4AL