INTERNATIONAL STANDARD

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

Part 3: Determination of apparent density

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Méthodes d'essai pour abrasifs non métalliques destinés à la préparation par projection —

Partie 3: Détermination de la masse volumique apparente

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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).

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).

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.

This document 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*, 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 third edition cancels and replaces the second edition (ISO 11127-3:2011), which has been technically revised.

The main changes to the previous edition are as follows:

— in Clause 7 the procedure has been modified by allowing the pycnometer and water to stabilise to room temperature; the temperature of the test is recorded;

— the spelling of pycnometer has been corrected throughout the document;

— Annex A has been technically and editorially revised.

A list of all parts in the ISO 11127 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.

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

Part 3: Determination of apparent density

1 Scope

This document specifies a method for the determination of the apparent density of non-metallic blast-cleaning abrasives.

This document is a part of the ISO 11127 series dealing with the sampling and testing of non-metallic abrasives for blast-cleaning.

The types of non-metallic abrasive and requirements for each are contained in the ISO 11126 series.

The ISO 11126 and ISO 11127 series have been drafted as a coherent set of International Standards on non-metallic blast-cleaning abrasives. Information on all parts of both series is given in Annex A.

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 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 11127-1, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 1: Sampling*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/

3.1
apparent density
mass of a given volume of non-metallic abrasive, as determined by the pycnometer method

Note 1 to entry: The pycnometer method is described in this document.

4 Reagent

Distilled or deionized water, of at least grade 3 purity as defined in ISO 3696.

5 Apparatus

Ordinary laboratory apparatus and glassware, together with the following.

5.1 **Pycnometer**, Gay-Lussac type, of capacity 50 ml, with a capillary stopper.

5.2 **Oven**, capable of being maintained at a temperature of (110 ± 5) °C.

5.3 **Balance**, capable of weighing to an accuracy of 0,01 g.

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

5.5 **Thermometer,** capable of measuring to an accuracy of 1 °C.

6 Sampling

Take a representative sample of the product to be tested, as described in ISO 11127-1.

7 Procedure

7.1 Carry out the determination in duplicate.

7.2 Dry a sufficient quantity of the sample by heating it at (110 ± 5) °C for 1 h. Allow to cool to room temperature in the desiccator (5.4).

7.3 Allow the pycnometer and water to stabilise to room temperature for 1 h.

7.4 Measure the temperature of the water (t) using a thermometer (5.5).

7.5 Weigh the clean, dry pycnometer (5.1) to an accuracy of 0,01 g (m_1), introduce into it approximately 10 g of the dried sample and reweigh (m_2).

7.6 Add distilled or deionized water (Clause 4) to the pycnometer until it is completely filled. Replace the stopper and gently shake the pycnometer to displace air adhering to the test portion. Remove the stopper, fill with water and then replace the stopper, forcing excess water out through the capillary tube. Carefully dry the outside of the pycnometer. Ensure there are no air bubbles present. Reweigh the pycnometer and its contents (m_3).

7.7 Empty the pycnometer of water and test portion, rinsing several times to remove all traces of abrasive. Refill with distilled or deionized water, replace the stopper and ensure there are no air bubbles present. Dry the outside of the pycnometer and weigh (m_4).

7.8 Care shall be taken that the pycnometer is handled as little as possible in order to prevent warming by hand.