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

Part 6:

**Determination of water-soluble
contaminants by conductivity
measurement**

*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 6: Détermination des contaminants solubles dans l'eau par
conductimétrie*



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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 11127-6:2011), which has been technically revised.

The main changes are as follows:

- [Clause 3](#) added;
- graduated measuring cylinder added to list of apparatus in [Clause 5](#);
- [Clause 9](#) updated;
- Annex A has been deleted.

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 6: Determination of water-soluble contaminants by conductivity measurement

1 Scope

This document specifies a method for the determination of water-soluble contaminants in non-metallic blast-cleaning abrasives by conductivity measurement.

This is one of a number of parts in 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 on each are contained in the ISO 11126 series.

The ISO 11126 series and the ISO 11127 series have been drafted as a coherent set of International Standards on non-metallic blast-cleaning abrasives.

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 11126 (all parts), *Preparation of steel substrates before application of paints and related products — Specifications for non-metallic blast-cleaning abrasives*

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

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Reagent

4.1 **Conductivity water**, of at least grade 2 purity in accordance with ISO 3696.

5 Apparatus

Ordinary laboratory apparatus and glassware, together with the following.

5.1 **Conductivity-measuring bridge**¹⁾.

5.2 **Conductivity cell**¹⁾.

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

5.4 **Graduated measuring cylinder**, capable of measuring 100 ml to ±0,5 ml.

6 Sampling

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

7 Procedure

7.1 Carry out the determination in duplicate.

7.2 Weigh a test portion of (100 ± 0,1) g of the sample into a 250 ml flask and add (100 ± 1) ml of the conductivity water (4.1). Shake for 5 min and allow to stand for 1 h. Then shake again for 5 min and allow to settle. If the liquid does not completely clear, filter it by any suitable method.

7.3 Transfer sufficient liquid to fill the conductivity cell (5.2) of the conductivity-measuring bridge (5.1). Measure the conductivity of the solution in microsiemens per centimetre at 20 °C.

The conductivity bridge shall be compensated at 20 °C or, alternatively, the conductivity shall be measured at 20 °C.

8 Expression of results

Calculate the conductivity, γ_s , in microsiemens per centimetre, of the abrasive, using [Formula \(1\)](#):

$$\gamma_s = \gamma_m \times K_{20} \quad (1)$$

where

γ_m is the conductivity, in microsiemens per centimetre, of the solution at 20 °C;

K_{20} is the cell constant of the conductivity cell at 20 °C.

If the duplicate determinations differ by more than 10 % (relative to the higher result), repeat the procedure described in [Clause 6](#).

Calculate the mean of two valid determinations and report the result to the nearest 10 µS/cm.

1) Any commercial conductivity bridge and conductivity cell with temperature compensation and a range of 10 µS/cm to 1 000 µS/cm are suitable.

9 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 the ISO 11126 series, if applicable;
- b) a reference to this document (ISO 11127-6:2022);
- c) the result of the test;
- d) any deviation from the test method specified;
- e) any unusual features observed;
- f) the date of the test;
- g) the name of the person who carried out the test.

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Bibliography

- [1] ISO 11127 (all parts), *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives*

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