INTERNATIONAL STANDARD

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

Part 4: Low-carbon cast-steel shot

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

Partie 4: Grenaille ronde en acier coulé à bas carbone

Reference number
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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 on 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 the following URL: 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*.

This second edition cancels and replaces the first edition (ISO 11124-4:1993), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Annex A has been technically revised.

A list of all parts in the ISO 11124 series can be found on the ISO website.

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

Part 4:
Low-carbon cast-steel shot

WARNING — Equipment, materials and abrasives used for surface preparation can be hazardous. It is important to ensure that adequate instructions are given and that all required precautions are exercised.

1 Scope

This document specifies requirements for 12 grades of low-carbon cast-steel shot abrasive, as supplied for blast-cleaning processes. Values are specified for hardness, density, defect/structural requirements and chemical composition.

The requirements specified in this document apply to abrasives supplied in the "new" condition only. They do not apply to abrasives either during or after use.

Test methods for metallic blast-cleaning abrasives are given in the various parts of ISO 11125.

Low-carbon cast-steel shot abrasives are used in both static and site blasting equipment. They are most often selected where a facility exists for recovery and re-use of the abrasive.

NOTE 1 Information on commonly referenced national standards for metallic abrasives and their approximate relationship with ISO 11124 is given in Annex A.

NOTE 2 Although this document has been developed specifically to meet requirements for preparation of steelwork, the properties specified will generally be appropriate for use when preparing other material surfaces, or components, using blast-cleaning techniques. These techniques are described in ISO 8504-2.

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 439, *Steel and iron — Determination of total silicon content — Gravimetric method*

ISO 629, *Steel and cast iron — Determination of manganese content — Spectrophotometric method*

ISO 4935, *Steel and iron — Determination of sulfur content — Infrared absorption method after combustion in an induction furnace*

ISO 9556, *Steel and iron — Determination of total carbon content — Infrared absorption method after combustion in an induction furnace*

ISO 10714, *Steel and iron — Determination of phosphorus content — Phosphovanadomolybdate spectrophotometric method*

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

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ISO 11125-2, *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 11125-3, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 3: Determination of hardness*

ISO 11125-4, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 4: Determination of apparent density*

ISO 11125-5, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 5: Determination of percentage defective particles and of microstructure*

ISO 11125-6, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 6: Determination of foreign matter*

ISO 11125-7, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 7: Determination of moisture*

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
low-carbon cast-steel shot
metallic blast-cleaning abrasive produced by a casting process in which molten low-carbon steel is formed into *shot* (3.2) by means of an atomization process

3.2
shot
particles that are predominantly round, that have a length of less than twice the maximum particle width and that do not have edges, broken faces or other sharp surface defects

3.3
defect
fault or weakness in an abrasive which, if present at or above a given level, may be detrimental to the performance of the abrasive (see Table 2)

3.3.1
void
smooth-surfaced internal cavity considered undesirable when greater than 10% of the cross-sectional area of a particle

3.3.2
shrinkage defect
internal cavity with a rough dendritic surface or a zone of microporosity, considered undesirable when greater than 40 % of the cross-sectional area of a particle

3.3.3
crack
linear discontinuity that has a length-to-width ratio of 3:1 or greater, that extends over more than 20 % of the diameter or shortest dimension of a particle and that is radial in direction

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