INTERNATIONAL STANDARD

ISO 11124-2

First edition
1993-12-15

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

Part 2:
Chilled-iron grit

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

Partie 2: Grenaille angulaire

Reference number
ISO 11124-2:1993(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 11124-2 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*.

ISO 11124 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products — Specifications 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*

At the time of publication of this part of ISO 11124, part 5 was in course of preparation.

Annexes A and B of this part of ISO 11124 are for information only.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

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

Part 2:
Chilled-iron grit

WARNING — Equipment, materials and abrasives used for surface preparation can be hazardous if used carelessly. Many national regulations exist for those materials and abrasives that are considered to be hazardous during or after use (waste management), such as free silica or carcinogenic or toxic substances. These regulations are therefore to be observed. It is important to ensure that adequate instructions are given and that all required precautions are exercised.

1 Scope

This part of ISO 11124 specifies requirements for 12 grades of chilled-iron grit abrasives, as supplied for blast-cleaning processes. It specifies ranges of particle sizes, together with corresponding grade designations. Values are specified for hardness, density, defect/structural requirements and chemical composition.

The requirements specified in this part of ISO 11124 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.

Chilled-iron grit 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.

NOTES

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

2 Although this part of ISO 11124 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 8504-2:1992, *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 2: Abrasive blast-cleaning.*

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11124. 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 11124 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 9556:1989, *Steel and iron — Determination of total carbon content — Infrared absorption method after combustion in an induction furnace.*

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.*

ISO 11125-2:1993, *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 11125-3:1993, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 3: Determination of hardness.*

ISO 11125-4:1993, *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 11125-5:1993, *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 11125-6:1993, *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 11125-7:1993, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 7: Determination of moisture.*

3 Definitions

For the purposes of this part of ISO 11124, the following definitions apply.

3.1 chilled-iron shot: A metallic blast-cleaning abrasive produced by a casting process in which molten iron is formed into shot (see also 3.3) by means of an atomization process.

3.2 chilled-iron grit: A metallic blast-cleaning abrasive obtained by crushing various chilled iron-shot sizes into sharp-edged angular particles.

NOTE 3 Chilled-iron shot may also be used as a blast-cleaning abrasive but is not included in this part of ISO 11124.

3.3 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.

3.4 grit: Particles that are predominantly angular, that have fractured faces and sharp edges and that are less than half-round in shape.

3.5 defect: A 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).

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

3.5.2 shrinkage defect: An 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.

3.5.3 crack: A 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.

3.6 foreign matter: Any material or particles mixed with the abrasive which are not attached to the abrasive particles and which are nonmagnetic.

4 Designation of abrasives

Chilled-iron abrasives shall be identified by "Abrasive ISO 11124" and the abbreviation "M/CI" indicating metallic, chilled-iron abrasive. The symbol "G" shall follow to indicate the required particle shape of the grit as purchased. The designation shall be completed by a 3-digit number denoting the grade, or nominal particle size, required.

EXAMPLE 1

Abrasive ISO 11124 M/CI/G100

denotes an abrasive of the metallic, chilled-iron type, complying with the requirements of this part of ISO 11124, of particle shape grit and of grade 100 (i.e. nominal particle size 1,00 mm).

It is essential that this full product designation is quoted on all orders.

NOTES

4 Grade requirements and codes are specified in table 1. The grade code is based on a number indicating the approximate middle of the particle size range, or nominal diameter, for each grade, expressed in millimetres × 100.