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

Part 6: Stainless steel (shot and irregulars)

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

Partie 6: Acier inoxydable (grenaille et irréguliers)

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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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.*

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 6:
Stainless steel (shot and irregulars)

1 Scope

This document specifies requirements for stainless steel (shot and irregulars), 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, metallographic structure and chemical composition.

The requirements specified in this document apply to abrasives supplied in the new condition only.

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

Stainless steel shot and irregulars are used in both static and site blasting equipment. They are most often selected where there is a possibility for the recovery and re-use of the abrasive.

NOTE 1 Although this document has been developed for preparation of steelwork, these materials are predominantly used for non-ferrous substrates. The properties specified will generally be appropriate for use when preparing other material surfaces, or components, using blast-cleaning techniques, and can be used for applications where no subsequent coating is applied.

NOTE 2 Whenever dissimilar metals are used together, galvanic corrosion can occur.

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 cast iron — Determination of silicon content — Gravimetric method*

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

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

ISO 10138, *Steel and iron — Determination of chromium content — Flame atomic absorption spectrometric method*

ISO 4940, *Steel and cast iron — Determination of nickel content — Flame atomic absorption spectrometric 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*

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*

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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 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/

3.1
stainless steel shot and irregular
metallic blast-cleaning abrasive produced by a casting process in which molten *stainless steel* (3.2) is atomised to form *shot* (3.3) or *irregular* (3.4) shapes

Note 1 to entry: Particles obtained by atomisation processes can be submitted to a mechanical post treatment such as *conditioning* (3.5).

3.2
stainless steel
steel containing 10,5 % mass fraction or more chromium, less than or equal to 1,2 % of carbon, and possibly with other elements added to secure special properties

3.2.1
austenitic
type of *stainless steel* (3.2) whose microstructure, at room temperature, consists predominantly of austenite

Note 1 to entry: This microstructure is achieved by alloying steel with sufficient chromium and nickel to maintain an austenitic microstructure at all temperatures. Austenitic stainless steels are not hardenable by heat treatment since they possess the same microstructure at all temperatures.

3.2.2
martensitic
type of *stainless steel* (3.2) whose microstructure, at room temperature, consists predominantly of martensite

Note 1 to entry: This microstructure is achieved by alloying steel with low to medium carbon and sufficient chromium. Martensitic stainless steel can be hardened by quenching and tempering.

3.2.3
ferritic
type of *stainless steel* (3.2) whose microstructure, at room temperature, consists predominantly of ferrite

Note 1 to entry: This microstructure is achieved by alloying steel with low carbon and sufficient chromium. Ferritic stainless steels are usually not hardenable by heat treatment.

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