



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 2272-2020

Ferrosilicon

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Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB/T 2272-2009 Ferrosilicon. Compared with GB/T 2272-2009, this Standard has the major technical changes as follows:

- Add GB/T 4333.5 and YB/T 4462 to the Normative References (see Clause 2 of this Edition; Clause 2 of 2009 Edition);
- The existing classification of ferrosilicon is divided into high-silicon ferrosilicon (GG), ordinary ferrosilicon (PG), low-aluminum ferrosilicon (DL) and high-purity ferrosilicon (GC) according to silicon content and main impurity elements. (see Clause 3 of this Edition; 3.1 of 2009 edition);
- Adjust the designations of ferrosilicon from 21 designations to 40 designations (see 4.1.1 of this Edition; 4.1.1 of 2009 edition);
- Adjust the chemical composition of some ferrosilicon designations (see 4.1.2 of this Edition; 4.1.2 of 2009 edition);
- Adjust the particle size specifications of ferrosilicon to four types: natural block, processed block, silicon particle and silicon powder (see 4.2.3 of this Edition; 4.2.2 of 2009 edition);

--- Add the determination and re-inspection of ferrosilicon (see Clause 7).

This Standard uses re-drafting method to modify and adopt ISO 5445:1980

Ferrosilicon - Specification and Conditions of Delivery.

Compared with ISO5445:1980, the structure of this standard has been adjusted.

Appendix A lists the comparison table of the Clause No. between this Standard and ISO5445:1980.

Compared with ISO5445:1980, this Standard made technical differences. The terms and clauses of these differences have been marked by a vertical single line (?) on the outer margin of this Standard. Appendix B lists the corresponding technical differences and their causes.

This Standard was proposed by China Iron and Steel Industry Association.

This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Pig-Irons and Ferroalloys (SAC/TC 318).

Drafting organizations of this Standard: Erdos Xijing Kuangye Co., Ltd.; Inner Mongolia Erdos Electric Power & Metallurgy Co., Ltd.; Tianjin Tiangang United Special Steel Co.,
Ferrosilicon

1 Scope

This Standard specifies the notations for designation, technical requirements, test methods, inspection rules, judgment and re-inspection, packaging, storage and transportation, marking and quality certificates of ferrosilicon.

This Standard is applicable ferrosilicon serving as deoxidizer and alloying agent in the iron and steel industry; ferrosilicon serving as inoculant and nodulizer in the foundry industry; and ferrosilicon serving as reducing agent in the magnesium industry and ferroalloy industry.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the

amendments) are applicable to this document.

GB/T 3650 The General Rules for Inspection, Packing, Storing, Transportation, Marking and Certification of Ferroalloy

GB/T 4010 Ferroalloys - Sampling and Preparation of Samples for Chemical Analysis (GB/T 4010-2015, ISO 4552-1:1987, ISO 4552-2:1987, MOD)

GB/T 4333.1 Ferrosilicon - Determination of Silicon Content - Perchloric Acid Dehydration Gravimetric Method and Potassium Fluosilicate Volumetric Method

GB/T 4333.2 Methods for Chemical Analysis of Ferrosilicon - The Reduced Molybdobismuthyl phosphoric Acid Photometric Method for the Determination of Phosphorus Content

GB/T 4333.3 Methods for Chemical Analysis of Ferrosilicon - The Potassium Periodate Photometric Method for the Determination of Manganese Content

GB/T 4333.4 Ferrosilicon - Determination of Aluminum Content - The Chrome azurol S Spectrophotometric Method - The EDTA Titrimetric Method and the Flame Atomic Absorption Spectrometric Method

GB/T 4333.5 Ferrosilicon - Determination of Silicon, Manganese, Aluminum, Calcium, Chromium and Iron Contents - Wavelength Dispersive X-Ray Fluorescence Spectrometry (Fused Cast Bead Method)

GB/T 4333.6 Ferrosilicon - Determination of Chromium Content - Diphenylcarbazide Spectrophotometric Method

GB/T 4333.7 Ferrosilicon - Determination of Sulfur Content - Infrared Absorption Method and Chromatographic Separation-Barium Sulfate Gravimetric Method

GB/T 4333.8 Methods for Chemical Analysis of Ferrosilicon - The Atomic Absorption Spectrometric Method for the Determination of Calcium Content

GB/T 4333.10 Ferrosilicon - Determination of Carbon Content - Infrared Absorption Method

GB/T 7738 Notations for Designation of Ferroalloys

GB/T 13247 Methods for Sampling and Testing the Grain Size of Ferroalloys

Products (GB/T 13247-2019, ISO 4551:1987, MOD)

GB/T 24194 Ferrosilicon - Determination of Aluminum Calcium Manganese

Chromium Titanium Copper Phosphorus and Nickel Content - Inductively Coupled

Plasma Atomic Emission Spectrometric Method

YB/T 4462 High Purity Ferrosilicon - Determination of Boron Content - Inductively

Coupled Plasma Atomic Emission Spectrometric Method

3 Notations for Designation

Ferrosilicon designations are implemented in accordance with the provisions of GB/T 7738; and are divided into four categories, such as high-silicon ferrosilicon (GG), ordinary ferrosilicon (PG), low-aluminum ferrosilicon (DL) and high-purity ferrosilicon (GC) based on the silicon content and main impurity elements of ferrosilicon.

The meanings of the symbols and numbers of each part of the ferrosilicon designations are as follows

6.1 Batching

Ferrosilicon is batched according to the same designation, but the fluctuation range of silicon content shall not exceed 3%.

6.2 Sampling and sample preparation

The method of sampling and sample preparation of ferrosilicon shall be as specified in GB/T 4010.

6.3 Quality inspection and acceptance

The quality inspection and acceptance of ferrosilicon shall be as specified in GB/T 3650.

6.4 Sampling and acceptance of particle size

The sampling method and acceptance of the particle size of ferrosilicon shall be as specified in GB/T 13247.

7.2 When the purchaser has any objection to the quality of the product, it shall be