



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

GB/T 25050-2010

Ferronickel ingots or pieces - Sampling for analysis

镍铁锭或块 成分分析用样品的采取

(English Translation)

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Foreword

This document was issued on 2 September 2010 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China and the Standardization Administration of China, and has applied since 1 June 2011.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer, customer or inspection body applies.

1 Scope

This standard specifies a method for sampling of ferronickel lots in ingot or piece form for the determination of the chemical composition of the lot.

This standard is applicable to sampling of ferronickel lots in ingot or piece form for the determination of the chemical composition of the lot.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (excluding corrections) to, or revisions of, any of these publications do not apply to this standard. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document

referred to applies.

GB/T 21933.1 Ferronickel - Determination of nickel content - The dimethylglyoxime gravimetric method (GB/T 21933.1-2008, ISO 6352:1985, IDT)

GB/T 25049 Ferronickel (GB/T 25049-2010, ISO 6501:1988, MOD)

3.1 Sampling

3.1.1

Each increment[1] Increment

Portion of the lot taken in a single operation; in this standard: portion of molten metal.[1] shall be taken using a spoon and cast in a mould to obtain a suitable small ingot for chemical or instrumental analysis. The usual geometry of such ingots is that of a frustum. It is desirable that the dimensions lie within the following limits:

- height: 100 mm to 140 mm;
- upper diameter: 35 mm to 50 mm;
- lower diameter: 30 mm to 40 mm.

The ingot mould shall be made of material that allows the sample to cool rapidly; a large block of copper would meet this requirement. If necessary, the sample shall be killed to obtain a small ingot of sound metal (free of cracks and blowholes). Killing is most often done with aluminium, in wire or chip form, at 1 g to 2 g of aluminium per kilogram. The large height of the small ingots permits small shrinkholes to be confined to the upper part, thus ensuring that the lower part of the ingot is perfectly sound and homogeneous and hence suitable for analysis. Generally, a height of 120 mm will guarantee that the sound portion extends at least 70 mm up from the base.

3.1.2

In general, the small ingots are used for instrumental analysis on solid metal after a disc is cut from them. Whenever possible, this analysis shall produce results as accurate as those obtained from chemical analysis of chips. To achieve such accuracy, it is often necessary to analyse several small ingots several times each.

A specified number of small ingots shall therefore be taken at regularly spaced intervals during the casting. Examples are given in Annex A to indicate the number of small ingots to be taken and the number to be analysed.

It may happen that for some exceptional reasons there are not enough small ingots available which are suitable either for analysis of chips taken from them, some small ingots may no longer be available or may contain cracks or blowholes. In these circumstances, the ingots constituting the heat shall be sampled. Five ingots shall be taken from the heat, and the procedure described beginning at 4.1.3 shall then be followed.

3.2.1 Cutting

Each small ingot shall be cut in two about 10 mm or 15 mm from the bottom (the smaller-diameter end) with a cut-off wheel (made of carborundum or corundum, for example). The use of water cooling is recommended, because it avoids heating of the sample and hence changes in the crystalline structure of the metal.

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