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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Ferronickel shot — Sampling for analysis

Ferro-nickel en grenailles — Échantillonnage pour analyse

Reference number
ISO 8049 : 1988 (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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8049 was prepared by Technical Committee ISO/TC 155, *Nickel and nickel alloys.*

Annexes A, B and C of this International Standard are for information only.

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Ferronickel shot — Sampling for analysis

1 Scope

This International Standard defines a method of sampling for analysis of ferronickel lots in the form of shot as specified in ISO 6501 in those cases where lots are constituted either heat by heat or by taking from blended stock.

The purpose is to determine the contents of the various elements :

— either from slugs by physical analysis methods (such as X-ray fluorescence or emission spectral analysis);

— or from chips by dry methods (carbon, sulfur) or chemical analysis (other elements).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 513 : 1975, *Application of carbides for machining by chip removal — Designation of the main groups of chip removal and groups of application.*

ISO 3855 : 1977, *Milling cutters — Nomenclature.*

ISO 4957 : 1980, *Tool steels.*

ISO 6352 : 1985, *Ferronickel — Determination of nickel content — Dimethylglyoxime gravimetric method.*

ISO 6501 : 1988, *Ferronickel — Specification and delivery requirements.*

3 Form and packaging of product

Grain size : between 2 and 50 mm

Lot tonnage : equal to or greater than 5 t

In the case of lots taken from blended stock, the nickel content range k to $(k + n)$ % of the blended heats shall be chosen as

$$15 \leqslant k \leqslant 59$$
$$1 \leqslant n \leqslant 5$$
$$16 \leqslant k + n \leqslant 60^{1)}$$

The ferronickel shot is generally delivered in bulk form in units which may be trucks, containers, or railroad cars, of which the contained masses normally range from 5 to 30 t, although in the case of railroad cars, loads may have masses up to 60 t.

This type of ferronickel can also be delivered drum-packed (the contained mass of which may be 250 kg).

4 Principle

In a single heat, intergrain homogeneity is practically ensured. It is therefore very easy to obtain a representative "primary sample" from a small number of "primary increments".

In the case of a blended lot composed of several heats, a greater number of primary increments N_p has to be taken, but the whole still constitutes the primary sample.

After blending and mass division of the primary sample, an "intermediate sample" is obtained having a reasonable mass for laboratory treatment. The treatment of the intermediate sample gives a "secondary sample", which may be divided in N_s "secondary increments" not exceeding a mass of 1 kg individually. Each secondary increment is then remelted under appropriate conditions so that no variation in composition can be observed and that N_s homogeneous small ingots[2)] be obtained (within-small-ingot homogeneity).

1) The case of non-blended lots (case $n \leqslant 1$) is not dealt with in this International Standard.

2) It is generally accepted that 1 kg is the maximum mass which can be accommodated in a laboratory furnace for re-casting under the required conditions. According to the grain size distribution of shot, it is often necessary for the secondary sample to exceed 1 kg in order to be representative. Hence the necessity of melting several small ingots. See the statistical justification in annex A.