

## **Ferronikkelkuul. Analüüsiks proovivõtmine**

Ferronickel shot - Sampling for analysis

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 28049:2000 sisaldab Euroopa standardi EN 28049:1992 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 28049:2000 consists of the English text of the European standard EN 28049:1992.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> Standard määrab proovivõtumeetodi kuulikujuliste ferroniklikogumite analüüsiks vastavalt standardile ISO 6501 sellistel juhtudel, kui kogumid moodustuvad kas kuumenemisel või segavarudest võtmisel.</p>	<p><b>Scope:</b></p>
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**ICS 77.100**

**Võtmesõnad:** ferronikkel, graanulmaterjalid, proovivõtmine, rauasulamid

UDC 669.15/24-198-492.3:620.11

Descriptors: Ferroalloys, ferronickel, sampling, samples.

**English version**

**Ferronickel shot**  
**Sampling for analysis**  
**(ISO 8049:1988)**

Ferro-nickel en grenailles; échantillonnage  
pour analyse (ISO 8049:1988)

Ferronickelschrot; Probennahme für Ana-  
lyse (ISO 8049:1988)

This European Standard was approved by CEN on 1992-05-08 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

On the proposal of the CEN Central Secretariat, CEN/BT decided by Resolution BT C157/1990 to submit International Standard

ISO 8049 : 1988 Ferronickel shot; sampling for analysis

to Formal Vote. The result was positive.

In the countries bound to implement this European Standard, a national standard identical to this European Standard shall be published, and conflicting national standards withdrawn, by 1992-11-30 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## Endorsement notice

The text of the International Standard ISO 8049 : 1988 was approved by CEN as a European Standard without any modification.

## 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

$$\begin{aligned} 15 &< k < 59 \\ 1 &< n < 5 \\ 16 &< k + n < 60^{1)} \end{aligned}$$

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<sup>2)</sup> be obtained (within-small-ingot homogeneity).

1) The case of non-blended lots (case  $n < 1$ ) 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.