

---

---

**Ferronickel — Specification and  
delivery requirements**

*Ferro-nickel — Spécifications et conditions de livraison*



This document is a preview generated by ERS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Information for ordering</b> .....	<b>2</b>
<b>5 Requirements</b> .....	<b>2</b>
5.1 Chemical composition .....	2
5.2 Form of delivery and formation of lots .....	3
5.2.1 General.....	3
5.2.2 Ferronickel in ingots.....	3
5.2.3 Ferronickel in pieces.....	3
5.2.4 Ferronickel in the form of shot.....	4
5.3 Contamination.....	4
<b>6 Control</b> .....	<b>4</b>
6.1 General.....	4
6.2 Sampling for analysis.....	4
6.3 Analysis.....	4
6.3.1 Ferronickel furnished with analysis certificate.....	4
6.3.2 Ferronickel settled with exchange analysis.....	4
6.4 Procedures in case of dispute.....	5
6.4.1 General.....	5
6.4.2 Contradictory procedure.....	5
6.4.3 Arbitration procedure.....	5
<b>Annex A (informative) Examples of ferronickel classification</b> .....	<b>6</b>

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 155, *Nickel and nickel alloys*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC SS M14, *Nickel*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 6501:1988), which has been technically revised. The main changes compared with the previous edition are as follows:

- expressions such as “agreement between parties” have been reduced or eliminated (because if a standard or part of it is to be agreed, there is no need for that International Standard);
- the ferronickel delivery market requirements have been updated;
- FeNi classification has been clarified according chemical composition and combination of Ni content ([Table 1](#)) and impurities ([Table 2](#)); this was previously in one table.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Ferronickel — Specification and delivery requirements

## 1 Scope

This document specifies the technical delivery requirements for the various forms of ferronickel (ingots, pieces and shot) usually supplied for steel making and foundry use.

## 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 6352, *Ferronickel — Determination of nickel content — Dimethylglyoxime gravimetric method*

ISO 8049, *Ferronickel shot — Sampling for analysis*

ISO 8050, *Ferronickel ingots or pieces — Sampling for analysis*

ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **ferronickel**

master alloy of iron and nickel having a nickel content equal to or greater than a mass fraction of 15 % and less than a mass fraction of 80 %, obtained from oxide ores or other nickel-bearing materials

### 3.2

#### **K**

number that represents the lowest nickel content that is part of the lot to be delivered

### 3.3

#### **splitting limit**

maximum acceptable difference between analytical results of nickel or other element agreed by two parties (buyer and seller)

### 3.4

#### **lot**

discrete and defined quantity of ferronickel ingots, pieces or shots answering to the same quality specification (chemical composition and physical characteristics)