

---

---

**Non-alloy steel wire rod for conversion to  
wire —**

**Part 4:  
Specific requirements for wire rod for  
special applications**

*Fil-machine en acier non allié destiné à la fabrication de fils —*

*Partie 4: Exigences spécifiques au fil-machine pour applications  
spéciales*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2011

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Contents

Page

Foreword .....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Designation .....</b>	<b>2</b>
<b>4 Requirements .....</b>	<b>2</b>
4.1 General .....	2
4.2 Chemical composition and mechanical properties .....	2
4.3 Internal soundness and surface quality .....	4
4.4 Depth of surface discontinuities .....	4
4.5 Depth of decarburization .....	4
4.6 Non-metallic inclusions .....	5
4.7 Core segregation .....	5
4.8 Tensile strength .....	6
4.9 Scale characteristics .....	6
4.10 Mechanical damage .....	6
4.11 Microstructure .....	6
<b>Annex A (informative) Steel designations in accordance with ISO 16120-4 and designation of comparable steel grades in national or regional standards .....</b>	<b>7</b>
<b>Bibliography .....</b>	<b>9</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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 16120-4 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 17, *Steel wire rod and wire products*.

This second edition cancels and replaces the first edition (ISO 16120-4:2001), which has been technically revised.

ISO 16120 consists of the following parts, under the general title *Non-alloy steel wire rod for conversion to wire*:

- *Part 1: General requirements*
- *Part 2: Specific requirements for general-purpose wire rod*
- *Part 3: Specific requirements for rimmed and rimmed substitute, low-carbon steel wire rod*
- *Part 4: Specific requirements for wire rod for special applications*

# Non-alloy steel wire rod for conversion to wire —

## Part 4:

## Specific requirements for wire rod for special applications

### 1 Scope

This part of ISO 16120 is applicable to steel wire rod with improved characteristics intended for drawing and/or cold rolling.

### 2 Normative references

The following referenced documents are indispensable for the application 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 4948-1, *Steels — Classification — Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition*

ISO 4948-2, *Steels — Classification — Part 2: Classification of unalloyed and alloy steels according to main quality classes and main property or application characteristics*

ISO/TS 4949, *Steel names based on letter symbols*

ISO 4967, *Steel — Determination of content of nonmetallic inclusions — Micrographic method using standard diagrams*

ISO 16120-1:2011, *Non-alloy steel wire rod for conversion to wire — Part 1: General requirements*

ISO 16120-2:2011, *Non-alloy steel wire rod for conversion to wire — Part 2: Specific requirements for general-purpose wire rod*

ASTM E45, *Standard Test Methods for Determining the Inclusion Content of Steel*