

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

**BS ISO 16468:2015**



**BSI Standards Publication**

# **Investment castings (steel, nickel alloys and cobalt alloys) — General technical requirements**

**bsi.**

...making excellence a habit.™

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of ISO 16468:2015. It supersedes BS ISO 16468:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/111, Steel Castings and Forgings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2015.  
Published by BSI Standards Limited 2015

ISBN 978 0 580 76505 6

ICS 77.140.80

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2015.

**Amendments/corrigenda issued since publication**

Date	Text affected
------	---------------

---

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

Second edition  
2015-10-01

---

---

## Investment castings (steel, nickel alloys and cobalt alloys) — General technical requirements

*Pièces moulées en cire perdue (acier, alliages de nickel et alliages de cobalt) — Exigences techniques générales*



Reference number  
ISO 16468:2015(E)

© ISO 2015

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)



## **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, 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  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

## 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 Materials and manufacture</b> .....	<b>2</b>
4.1 Melting process.....	2
4.2 Remelting process.....	2
<b>5 Inspection and testing</b> .....	<b>2</b>
5.1 General requirements.....	2
5.2 Sampling.....	2
<b>6 Retests</b> .....	<b>8</b>
<b>7 Cleaning and dressing</b> .....	<b>8</b>
<b>8 Quality</b> .....	<b>8</b>
<b>9 Production welds</b> .....	<b>8</b>
<b>10 Supplementary requirements</b> .....	<b>8</b>
10.1 General.....	8
10.2 Agreed manufacturing procedure.....	8
10.3 Magnetic particle inspection.....	8
10.4 Radiographic inspection.....	8
10.5 Liquid penetrant inspection.....	9
10.6 Ultrasonic inspection.....	9
10.7 Inspection of weld preparation.....	9
10.8 Prior agreement relating to major finishing welds.....	9
10.9 Impact test at low temperatures.....	9
10.10 Hardness test.....	9
10.10.1 Brinell.....	9
10.10.2 Rockwell.....	9
10.10.3 Vickers.....	9
10.11 Specified ferrite range in austenitic and austenitic ferritic stainless steels.....	9
10.12 Unspecified elements.....	10
10.13 Test material removed from castings.....	10
10.14 Tensile test blocks and specimen locations for castings.....	10
10.15 Weld maps (sketches).....	10
10.16 Chemical analysis — Testing frequency.....	10
10.17 Tensile test — Testing frequency.....	10
10.18 Inspection documents.....	10
10.19 Marking.....	10
10.20 Decarburization.....	10
10.21 Metallurgical cleanliness.....	10
<b>Bibliography</b> .....	<b>12</b>

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

## 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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 17, *Steel*, Subcommittee SC 11, *Steel castings*.

This second edition replaces the first edition (ISO 16468:2005), which has been technically revised with the following changes:

- [Clause 2](#), two standards added;
- [3.3](#), revised;
- 3.4, deleted;
- [10.6](#), reference made to ISO 4992-1 and ISO 4992-2.

This is a preview of "BS ISO 16468:2015". [Click here to purchase the full version from the ANSI store.](#)

# Investment castings (steel, nickel alloys and cobalt alloys) — General technical requirements

## 1 Scope

This International Standard specifies technical requirements for castings (steel, nickel alloys, and cobalt alloys) produced by the investment-casting process. The International Standards specifying metallurgical material requirements for steel, nickel alloy, and cobalt alloy casting grades are listed in the Bibliography.

The requirements stated in this International Standard form an integral part of the material specification. In cases of conflict, the requirements of this specification take precedence over the individual material specification requirements.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4986, *Steel castings — Magnetic particle inspection*

ISO 4987, *Steel castings — Liquid penetrant inspection*

ISO 4990, *Steel castings — General technical delivery requirements*

ISO 4992-1, *Steel castings — Ultrasonic examination — Part 1: Steel castings for general purposes*

ISO 4992-2, *Steel castings — Ultrasonic examination — Part 2: Steel castings for highly stressed components*

ISO 4993, *Steel castings — Radiographic inspection*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 10474, *Steel and steel products — Inspection documents*

ISO 11970, *Specification and approval of welding procedures for production welding of steel castings*

ISO 13520, *Determination of ferrite content in austenitic stainless steel castings*

## 3 Terms and definitions

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

### 3.1

**primary heat**

**master**

**mother heat**

**melt**

quantity of metal processed in a single furnace or refining vessel at one time, in such a manner, as to produce the desired composition and properties