INTERNATIONAL STANDARD

ISO 10049

Second edition
2019-06

Aluminium alloy castings — Visual method for assessing porosity

Pièces moulées en alliages d'aluminium — Méthode visuelle d'évaluation de la porosité

Reference number
ISO 10049:2019(E)

© ISO 2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

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
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Inspection requirements **1**

5 Method of inspection **3**
5.1 Surface conditions 3
5.2 Inspection conditions 3
5.3 Lighting conditions 4
5.4 Qualification of the operators 4

6 Acceptance conditions **4**
6.1 Image of discontinuities 4
6.2 Severity levels 4

7 Interpretation of results **4**

8 Order **4**

© ISO 2019 – All rights reserved

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).

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).

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.

This document was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 7, *Aluminium and cast aluminium alloys*.

This second edition cancels and replaces the first edition (ISO 10049:1992), which has been technically revised. The main changes compared with the previous edition are as follows:

— the NOTE in the Scope has been modified;

— Clause 3 for terms and definitions has been added;

— Table 1 has been converted into Figures 1 to 6 and the figures have been redrawn;

— the subclauses in Clause 5 have been reordered.

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.

© ISO 2019 – All rights reserved

Aluminium alloy castings — Visual method for assessing porosity

1 Scope

This document specifies a visual method for assessing the porosity of the machined surface of aluminium alloy castings.

The method does not apply to assessing porosity shown on radiograms.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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/

4 Inspection requirements

The inspection requirements and acceptance criteria shall be clearly stated at the time of tendering and price enquiry, and specifically in the order sent to the founder and accepted by him or her.

Porosity is assessed on the machined surface of the casting, or one part of it, after total or partial machining as agreed between the parties concerned. The machined surface for inspection is thus a selected operating surface or a surface that has been machined only for reasons of inspection at a specific point on the casting, contiguous sample or hot top (see 5.1).

For each part of the casting to be inspected, the degree of severity shall be stated (see Figures 1 to 6).

The test is regarded as satisfactory if the indications of discontinuities obtained are of levels that are equal to or lower than those shown in Figures 1 to 6 and given in Clause 7.

If this is not the case, the casting is either rejected, or it is brought into conformity with the contractually agreed specification, by a method approved by the customer.



Number and size of pores over 100 mm^2 (see 5.2): No pores visible on the surface inspected.

Figure 1 — Severity level 0

© ISO 2019 – All rights reserved