INTERNATIONAL STANDARD

ISO 17637

Second edition
2016-12-01

Non-destructive testing of welds — Visual testing of fusion-welded joints

Contrôle non destructif des assemblages soudés — Contrôle visuel des assemblages soudés par fusion

Reference number
ISO 17637:2016(E)

© ISO 2016



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, 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

Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Test conditions and equipment ... **1**

5 Personnel qualification ... **2**

6 Visual testing ... **2**

6.1 General ... 2

6.2 Visual testing of joint preparation ... 2

6.3 Visual testing during welding ... 2

6.4 Visual testing of the finished weld ... 3

6.4.1 General ... 3

6.4.2 Cleaning and dressing ... 3

6.4.3 Profile and dimensions ... 3

6.4.4 Weld root and surfaces ... 3

6.4.5 Post-weld heat treatment ... 4

6.5 Visual testing of repaired welds ... 4

6.5.1 General ... 4

6.5.2 Partially removed weld ... 4

6.5.3 Completely removed weld ... 4

7 Test records ... **4**

Annex A (informative) **Examples of test equipment** ... **6**

Bibliography ... **10**

© ISO 2016 – 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 on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

This second edition cancels and replaces the first edition (ISO 17637:2003), which has been technically revised.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 5 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

© ISO 2016 – All rights reserved

Non-destructive testing of welds — Visual testing of fusion-welded joints

1 Scope

This document specifies the visual testing of fusion welds in metallic materials. It may also be applied to visual testing of the joint prior to welding.

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:

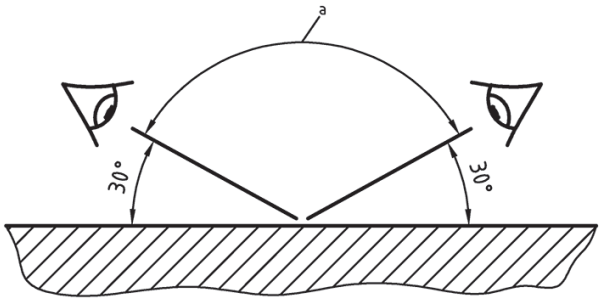
— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Test conditions and equipment

The illuminance at the surface with white light shall be a minimum of 350 lx; wearing of tinted goggles (e.g. protective sunglasses) increases the minimum illuminance. However, 500 lx is recommended.

For direct inspection, the access shall be sufficient to place the eye within 600 mm of the surface to be examined and at an angle not less than 30° (see Figure 1).



a Range.

Figure 1 — Access for testing

Remote inspection using mirrors, boroscopes, fibre optic cables or cameras shall be considered when the access for testing in accordance with Figure 1 is not possible or when specified by an application standard.

An additional light source can be used to increase the contrast and relief between imperfections and the background.

© ISO 2016 – All rights reserved