



NSAI
Standards

Irish Standard
I.S. EN ISO 17643:2015

Non-destructive testing of welds - Eddy current examination of welds by complex plane analysis (ISO 17643:2015)

I.S. EN ISO 17643:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 17643:2015

Published:

2015-09-30

*This document was published
under the authority of the NSAI
and comes into effect on:*

2015-10-22

ICS number:

25.160.40

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 17643:2015 is the adopted Irish version of the European Document EN ISO 17643:2015, Non-destructive testing of welds - Eddy current examination of welds by complex plane analysis (ISO 17643:2015)

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

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN ISO 17643

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 25.160.40

Supersedes EN 1711:2000

English Version

**Non-destructive testing of welds - Eddy current
examination of welds by complex plane analysis (ISO
17643:2015)**

Contrôle non destructif des assemblages soudés -
Contrôle par courants de Foucault des assemblages
soudés par analyse des signaux dans le plan complexe
(ISO 17643:2015)

Zerstörungsfreie Prüfung von Schweißverbindungen -
Wirbelstromprüfung von Schweißverbindungen durch
Vektorauswertung (ISO 17643:2015)

This European Standard was approved by CEN on 20 June 2015.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN ISO 17643:2015 (E)

Contents

Page

European foreword.....	3
-------------------------------	----------

European foreword

This document (EN ISO 17643:2015) has been prepared by ISO/TC 44 “Welding and allied processes” in collaboration with Technical Committee CEN/TC 121 “Welding” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1711:2000.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 17643:2015 has been approved by CEN as EN ISO 17643:2015 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

ISO
17643

Second edition
2015-09-01

Non-destructive testing of welds — Eddy current testing of welds by complex-plane analysis

*Contrôle non destructif des assemblages soudés — Contrôle par
courants de Foucault des assemblages soudés avec analyse des
signaux dans le plan complexe*



Reference number
ISO 17643:2015(E)

© ISO 2015

ISO 17643:2015(E)



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

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Personnel qualification	1
5 Written procedures	2
6 General applications	2
6.1 Essential variables	2
6.2 Additional information	2
6.3 Surface conditions.....	2
6.4 Equipment.....	3
6.4.1 Instrumentation (excluding probe).....	3
6.4.2 Surface probes	3
6.4.3 Accessories	3
6.4.4 Systematic equipment maintenance.....	5
6.5 Test procedure.....	5
6.5.1 Evaluation mode	5
6.5.2 Procedure for measuring coating thickness and material comparison relative to calibration block.....	5
6.5.3 Procedure for testing welds in ferritic materials.....	6
6.6 Detectability of discontinuities.....	11
6.7 Procedure for testing welds in other materials.....	12
7 Test report	12
Annex A (informative) Recommended eddy current method flow diagram	14

ISO 17643:2015(E)

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 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 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

This second edition cancels and replaces the first edition (ISO 17643:2005), which has been technically revised.

Non-destructive testing of welds — Eddy current testing of welds by complex-plane analysis

1 Scope

This International Standard defines eddy current testing techniques for detection of surface breaking and near surface planar discontinuities, mainly in ferritic materials (weld material, heat-affected zones, base material).

Eddy current testing can also be specified for use with non-ferritic materials, for example in an application standard.

The techniques can be applied to coated and uncoated objects during fabrication and in service, both onshore and offshore.

Eddy current testing can be carried out on all accessible surfaces and on welds of almost any configuration.

Unless otherwise specified at specific items in this International Standard, the general principles of ISO 15549 apply.

NOTE Eddy current testing is usually performed in the as-welded condition. However, the accuracy of the results can be affected by very rough surface finishes.

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 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

ISO 12718, *Non-destructive testing — Eddy current testing — Vocabulary*

ISO 15548-1, *Non-destructive testing — Equipment for eddy current examination — Part 1: Instrument characteristics and verification*

ISO 15548-2, *Non-destructive testing — Equipment for eddy current examination — Part 2: Probe characteristics and verification*

ISO 15548-3, *Non-destructive testing — Equipment for eddy current examination — Part 3: System characteristics and verification*

ISO 15549, *Non-destructive testing — Eddy current testing — General principles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12718 apply.

4 Personnel qualification

Non-destructive testing shall be performed by qualified and capable personnel. It is recommended that personnel are qualified in accordance with ISO 9712 or an equivalent standard at an appropriate level in the relevant industry sector.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-