
**Steel — Ultrasonic testing for steel flat
products of thickness equal to or greater
than 6 mm**

*Aciers — Contrôle ultrasonore des produits plats en acier d'épaisseur
égale ou supérieure à 6 mm*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS

© ISO 2006

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
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Principle.....	2
5 Personnel.....	2
6 Testing system	3
6.1 General requirements	3
6.2 Manual-testing instrument	3
6.3 Automated testing system	3
6.4 Performance of electronic equipment	4
6.5 Probes	4
6.6 Coupling medium.....	5
7 Procedure	5
7.1 Inspection timing	5
7.2 Scanning plan	5
7.2.1 General.....	5
7.2.2 Testing of the flat-product body.....	5
7.2.3 Testing of the edges of the flat products	6
7.3 Scanning condition.....	6
7.4 Sensitivity and range setting	6
8 Determination of the discontinuity size.....	8
8.1 Testing the flat-product body	8
8.1.1 Testing with dual-element probes.....	8
8.1.2 Testing with single-element probes.....	8
8.2 Testing the edges	8
9 Acceptance criteria.....	9
10 Test report	9
Bibliography	12

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 17577 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 7, *Methods of testing (other than mechanical tests and chemical analysis)*.

Steel — Ultrasonic testing for steel flat products of thickness equal to or greater than 6 mm

1 Scope

This International Standard specifies a method for the automated and/or manual ultrasonic testing of uncoated steel flat products for internal discontinuities by the reflection method. It is applicable to non-alloyed or alloyed steel flat products, in a nominal thickness range of 6 mm to 200 mm. However, this standard may be applied to austenitic and austenitic-ferritic steels, provided that the difference between the amplitude of the noise signal and that of the echo detection threshold is sufficient for the limit fixed. Unless otherwise agreed, for testing of steel flat products for welded steel tubes, ISO 12094 applies.

Other methods of testing (e.g. by transmission) or other test equipment may be used at the manufacturer's discretion, provided that they give identical results to those obtained under the conditions of this standard. In the event of a dispute, only the method defined in this standard will prevail.

Testing of flat products, of thickness less than 6 mm and over 200 mm, may be the subject of special agreements between the parties concerned.

The inspection is normally carried out in the place of production or on the premises of the supplier.

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

ISO 12094, *Welded steel tubes for pressure purposes — Ultrasonic testing for the detection of laminar imperfections in strips/plates used in the manufacture of welded tubes*

3 Terms and definitions

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

3.1

internal discontinuity

any imperfection lying within the thickness of the flat products, e.g. planar or laminar imperfection, single-plane or multi-plane inclusion bands or clusters

3.2

defect

unacceptable internal discontinuities, i.e. exceeding the specified maximum size or population density limits

3.3

population density

number of individual internal discontinuities of a size greater than a specified minimum size and less than a specified maximum size per specified area of body or length of edge zone