

Third edition
2022-10

Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 2

Essais non destructifs — Contrôle par ultrasons — Spécifications relatives au bloc d'étalonnage n° 2



Reference number
ISO 7963:2022(E)

© ISO 2022



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

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
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a preview of ISO 7963:2022. Click [here](#) to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Manufacture	1
4.1 Steel.....	1
4.2 Dimensions.....	1
4.3 Machining, heat treatment and surface finish.....	2
4.4 Reference marks.....	3
5 Methods of use	4
5.1 Setting of the time base.....	4
5.1.1 General.....	4
5.1.2 Setting of the time base up to 125 mm steel with a straight-beam probe.....	4
5.1.3 Setting of the time base for 100 mm or 125 mm steel with a miniature angle-beam probe.....	4
5.2 Sensitivity setting and probe checking.....	5
5.2.1 General.....	5
5.2.2 Sensitivity setting with a straight-beam probe.....	5
5.2.3 Miniature angle-beam probes.....	6
6 Declaration of conformity	7
Bibliography	9

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 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 7963:2006), which has been technically revised.

The main changes are as follows:

- document structure aligned with ISO 2400;
- normative references updated;
- wording updated;
- Annex A deleted and the relevant information shifted to the main text;
- [Figures 1, 3](#) and [6](#) corrected;
- tempering aligned with ISO 2400.

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.

This is a preview of ISO 7963:2022. [Click here to purchase the full version from the ANSI store.](#)

Introduction

Calibration block No. 2 is made of steel and may be used for all ultrasonic testing, as calibration block No. 1 described in ISO 2400.

Calibration block No. 2 differs in size and shape from calibration block No.1 but is made from the same material.

Calibration block No. 2 is much smaller and lighter, and its geometry is much simpler than block No 1.

Calibration block No. 2 does not offer as much scope as the larger block No.1; in particular it is not meant to check an ultrasonic instrument completely.

However, calibration block No. 2 makes it possible, during practical testing, to check simply, from time to time, the setting of the time base and the sensitivity of the ultrasonic instrument. Moreover, it is suited to check the beam angle and the probe index point of miniature angle-beam probes.

The International Institute of Welding (IIW) and its members developed the designs of steel calibration blocks in the 1950s and 1960s which were originally indicated as “IIW calibration block 1” and “IIW calibration block 2”. These designs have been adopted widely and they form the basis of many blocks currently available.

The smaller type block is sometimes indicated as “Rompas block” or “miniature angle-beam block (MAB)”, respectively named after the original Dutch designer or the intended use.

Some commercially available blocks look similar to calibration block No. 2, however such blocks are not necessarily according to this document and can have different features, dimensions or materials.

The details of calibration block No. 2, as specified in this document, have been adapted over time.