



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 7963:2022**

**01-marec-2022**

---

**Neporušitveno preskušanje - Ultrazvočno preskušanje - Specifikacije za umeritveni vzorec št. 2 (ISO/DIS 7963:2022)**

Non-destructive testing - Ultrasonic testing - Specification for calibration block No. 2 (ISO/DIS 7963:2022)

Zerstörungsfreie Prüfung – Ultraschallprüfung – Beschreibung des Kalibrierkörpers Nr.2 (ISO/DIS 7963:2022)

Essais non destructifs - Contrôle par ultrasons - Specifications relatives au bloc d'étalonnage n° 2 (ISO/DIS 7963:2022)

**Ta slovenski standard je istoveten z: [oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022) prEN ISO 7963**

**ICS:**

19.100	Neporušitveno preskušanje	Non-destructive testing
25.160.40	Varjeni spoji in vari	Welded joints and welds

**oSIST prEN ISO 7963:2022**

**en,fr,de**

**iTeh STANDARD  
PREVIEW  
(standards.iteh.ai)**

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>

# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 7963

ISO/TC 135/SC 3

Secretariat: DIN

Voting begins on:  
2022-01-19Voting terminates on:  
2022-04-13

---

---

## 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*

ICS: 25.160.40

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>

This document is circulated as received from the committee secretariat.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

### ISO/CEN PARALLEL PROCESSING



Reference number  
ISO/DIS 7963:2022(E)

© ISO 2022

**iTeh STANDARD  
PREVIEW  
(standards.iteh.ai)**

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>



**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](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword.....	iv
Introduction.....	v
<b>1 Scope.....</b>	<b>1</b>
<b>2 Normative references.....</b>	<b>1</b>
<b>3 Terms and definitions.....</b>	<b>1</b>
<b>4 Manufacture.....</b>	<b>1</b>
4.1 Steel.....	1
4.2 Dimensions.....	1
4.3 Machining, heat treatment and surface finish.....	3
4.4 Reference marks.....	3
<b>5 Methods of use.....</b>	<b>4</b>
5.1 Setting of the time base.....	4
5.1.1 Setting of the time base up to 125 mm steel with a straight-beam probe.....	4
5.1.2 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 Straight-beam probes – Sensitivity setting.....	6
5.2.3 Miniature angle-beam probes.....	6
<b>6 Declaration of conformity.....</b>	<b>8</b>
<b>Bibliography.....</b>	<b>9</b>

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>

## ISO/DIS 7963:2022(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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*.

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

The main changes compared to the previous edition 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](http://www.iso.org/members.html).

## 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 as 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 1950's and 1960's 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.

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>

**iTeh STANDARD  
PREVIEW  
(standards.iteh.ai)**

[oSIST prEN ISO 7963:2022](https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022)

<https://standards.iteh.ai/catalog/standards/sist/a05df3a9-07b8-46b9-8d18-d58920cadced/osist-pren-iso-7963-2022>



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

## 1 Scope

This document specifies the requirements for the dimensions, material, manufacture and methods of use for calibration block No. 2 for setting and checking ultrasonic test equipment.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 5577, *Non-destructive testing — Ultrasonic testing — Vocabulary*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steel*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5577 apply.

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 <https://www.electropedia.org/>

## 4 Manufacture

### 4.1 Steel

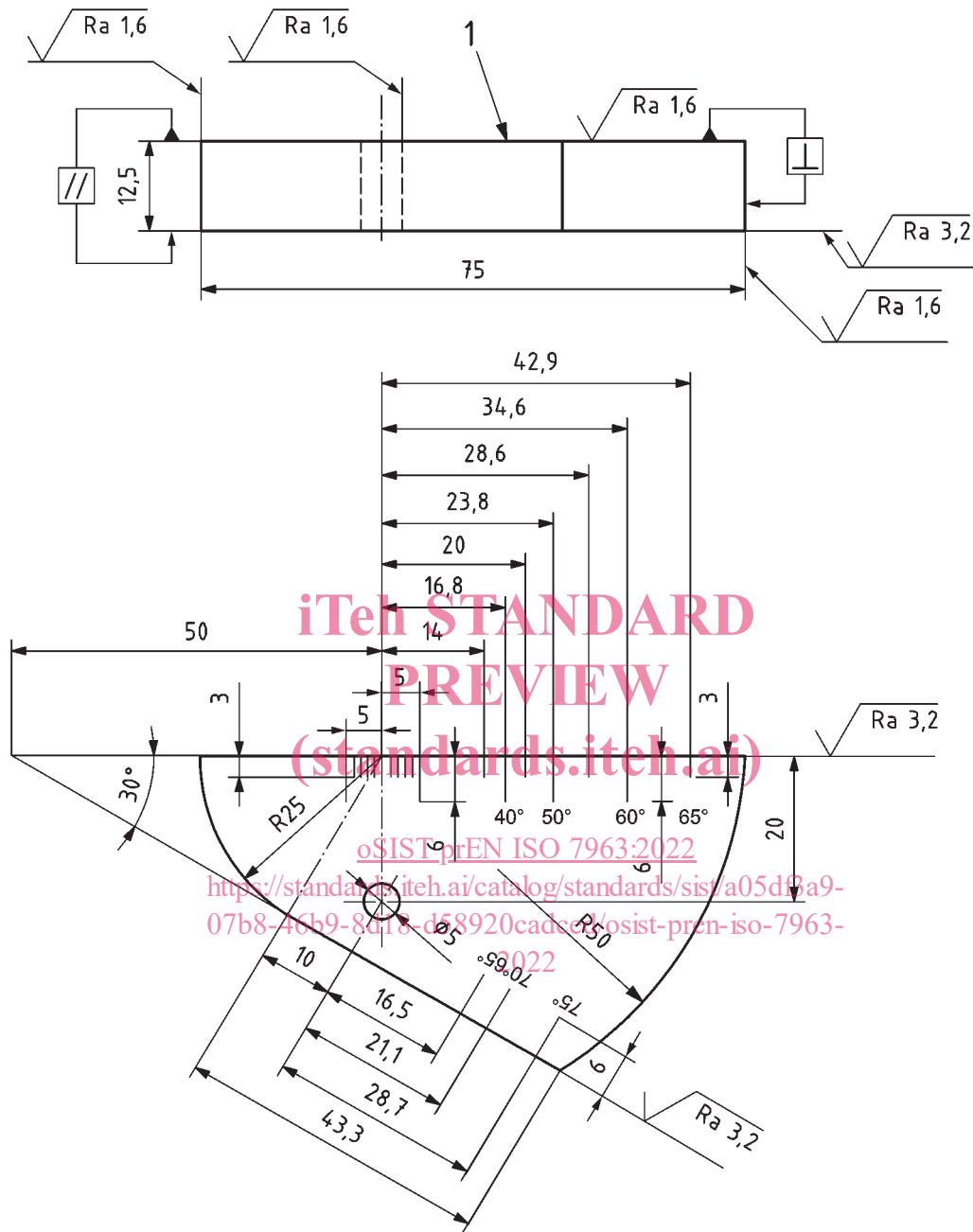
Blocks shall be manufactured from steel grade S355J0, specified in EN 10025-2, or from steel of an equivalent grade.

### 4.2 Dimensions

The dimensions of calibration block No. 2 shall be as shown in [Figure 1](#).

A thicker block may be greater than 12,5 mm, for example 20 mm or 25 mm thick, when using non-miniature probes.

Dimensions in millimetres  
Surface roughness in micrometers



Tolerances, unless otherwise stated:  $\pm 0,10$  mm

Height of characters for angle indents: 5 mm

Tolerances on the length of the engraved scale:  $\pm 0,5$  mm

**Key**

1 reflecting surface

NOTE Surface roughness values, *Ra*, are according to ISO 4287. Different values for the surface roughness are given because of different functions of the surfaces, e.g. test surface or reflecting surface.

**Figure 1 — Calibration block No. 2 — Dimensions of block and scales**