

Non-destructive testing - Ultrasonic testing -  
Specification for standard block No. 1 (ISO 2400:2025)

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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EUROPEAN STANDARD

**EN ISO 2400**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN ISO 2400:2012

English Version

## Non-destructive testing - Ultrasonic testing - Specification for standard block No. 1 (ISO 2400:2025)

Essais non destructifs - Contrôle par ultrasons -  
Spécifications relatives au bloc étalon n° 1 (ISO  
2400:2025)

Zerstörungsfreie Prüfung - Ultraschallprüfung -  
Beschreibung des Standardkörpers Nr. 1 (ISO  
2400:2025)

This European Standard was approved by CEN on 28 March 2025.

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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.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

This document (EN ISO 2400:2025) has been prepared by Technical Committee ISO/TC 135 "Non-destructive testing" in collaboration with Technical Committee CEN/TC 138 "Non-destructive testing" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2025, and conflicting national standards shall be withdrawn at the latest by October 2025.

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

This document supersedes EN ISO 2400:2012.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Endorsement notice

The text of ISO 2400:2025 has been approved by CEN as EN ISO 2400:2025 without any modification.

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## 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 document 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)).

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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*, 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 2400:2012), which has been technically revised.

The main changes are as follows:

- the wording “calibration block” has been replaced by “standard block”;
- the wording “calibrating” has been replaced by “setting”;
- the velocities shall be determined in three perpendicular directions instead of two directions;
- a maximum allowed difference between determined velocities has been given;
- a link to a CAD file of the standard block has been added.

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

Standard block No. 1 is made of steel and may be used for all ultrasonic testing.

Standard block No. 1 makes it possible to check an ultrasonic instrument completely.

Standard block No. 1 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 angle-beam probes.

A smaller and lighter standard block No. 2, which has simpler geometry and offers less scope, is described in ISO 7963.

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.

Some commercially available blocks look similar to standard block No. 1, however such blocks are not necessarily according to this document and can have different features, dimensions or materials.

The details of standard block No. 1, as specified in this document, have been adapted over time.

Some other standard blocks are given in the bibliography.

# Non-destructive testing — Ultrasonic testing — Specification for standard block No. 1

## 1 Scope

This document specifies the requirements for the dimensions, material and manufacture of a steel block for setting, checking and verification of ultrasonic test equipment used in manual testing.

## 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 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 steels*

## 3 Terms and definitions

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

ISO and IEC maintain terminology 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

The 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 the standard block No. 1 shall be as shown in [Figure 1](#), however modifications according to [Clause 8](#) are permitted.

NOTE 1 This document does not include any requirement for a plastic insert.

NOTE 2 A CAD file of standard block No. 1 can be downloaded from <https://standards.iso.org/iso/2400/ed-3/en>.

### 4.3 Machining, heat treatment and surface finish

- a) The block shall be rough-machined to a dimension of about 320 mm · 120 mm · 30 mm before heat treatment which shall consist of:
  - austenitizing at 920 °C for 30 min;