
**Non-destructive testing — Robotic
ultrasonic test systems — General
requirements**

*Essais non destructifs — Systèmes robotisés de contrôle par ultrasons
— Exigences générales*



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Foreword

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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).

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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.

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

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.

Non-destructive testing — Robotic ultrasonic test systems — General requirements

1 Scope

This document specifies the necessary system hardware components, the characteristics, the component requirements and conditions for the application of robotic ultrasonic test systems.

This document specifies the general requirements and acceptance criteria for robotic ultrasonic test systems.

This document is applicable to robotic ultrasonic test systems composed of one or more robot(s). Some of the characteristics of a robot ultrasonic testing system can be application-specific.

This document is applicable to conventional straight-beam probes and immersion technique.

This document is also applicable for phased array equipment, but additional tests can be necessary.

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 230-1, *Test code for machine tools — Part 1: Geometric accuracy of machines operating under no-load or quasi-static conditions*

ISO 230-2, *Test code for machine tools — Part 2: Determination of accuracy and repeatability of positioning of numerically controlled axes*

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

ISO 8373, *Robotics — Vocabulary*

ISO 9283, *Manipulating industrial robots — Performance criteria and related test methods*

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

ISO 22232 (all parts), *Non-destructive testing — Characterization and verification of ultrasonic test equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5577, ISO 8373, ISO 9283, ISO 22232 (all parts) and the following 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/>

3.1

robotic ultrasonic test system

automatic scanning ultrasonic test system, controlled by computer program, with the scanning motion implemented by one or multiple robots