



BSI Standards Publication

Non-destructive testing — Metal magnetic memory

Part 1: Vocabulary and general requirements

National foreword

This British Standard is the UK implementation of ISO 24497-1:2020. It supersedes BS ISO 24497-1:2007 and BS ISO 24497-2:2007, which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/-/1, Briefing committee for welding.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Non-destructive testing — Metal
magnetic memory —**

**Part 1:
Vocabulary and general requirements**

*Essais non destructifs — Mémoire magnétique des métaux —
Partie 1: Vocabulaire et exigences générales*



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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 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 IIW, *International Institute for Welding, Commission V, NDT and Quality Assurance of Welded Products*.

This second edition cancels and replaces the first edition (ISO 24497-1:2007) and ISO 24497-2:2007, which have been technically revised and merged.

The main changes compared to the previous edition are as follows:

- the scope has revised and extended;
- new normative references have been added;
- [Clause 3](#) has been revised;
- details on the test procedure have been added;
- details of the required test report have been added;
- a test example has been added in [Annex A](#).

A list of all parts in the ISO 24497 series can be found on the ISO website.

Any feedback, question or request for official interpretation related to any aspect of this document should be directed to IIW via your national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Non-destructive testing — Metal magnetic memory —

Part 1: Vocabulary and general requirements

1 Scope

This document specifies terms and definitions for non-destructive testing (NDT) by the technique of metal magnetic memory (MMM) as well as general requirements for application of this technique of the magnetic testing method.

The terms specified in this document are mandatory for application in all types of documentation and literature of non-destructive testing, using the metal magnetic memory technique.

This NDT technique has the following objectives:

- determination of the heterogeneity of the magneto-mechanical state of ferromagnetic objects, detection of defect concentration and boundaries of metal microstructure heterogeneity;
- determination of locations with magnetic stray field aberrations for further microstructural analysis and/or non-destructive testing and evaluation;
- early diagnostics of fatigue damage of the inspected object and evaluation of its structural life time;
- quick sorting of new and used inspection objects by their magnetic heterogeneity for further testing;
- efficiency improvement of non-destructive testing by combining metal magnetic memory testing with other NDT methods or techniques (ultrasonic testing, x-ray, etc.) by fast detection of the most probable defect locations;
- quality control of welded joints of various types and their embodiment (including contact and spot welding). See ISO 24497-2 for details of this application.

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

ISO/TS 18173, *Non-destructive testing — General terms and definitions*

ISO 24497-2, *Non-destructive testing^o — Metal magnetic memory — Part 2: Testing of welded joints*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 18173 and the following 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 <http://www.electropedia.org/>