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

**Part 2:
General requirements**

*Essais non destructifs — Mémoire magnétique des métaux —
Partie 2: Exigences générales*



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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 24497-2 was prepared by the International Institute of Welding, Commission V, *Quality control and quality assurance of welded products*, recognized as an international standardizing body in the field of welding in accordance with Council Resolution 42/1999.

Requests for official interpretations of any aspect of this part of ISO 24497 should be directed to the ISO Central Secretariat, who will forward them to the IIV Secretariat for an official response.

ISO 24497 consists of the following parts, under the general title *Non-destructive testing — Metal magnetic memory*:

- *Part 1: Vocabulary*
- *Part 2: General requirements*
- *Part 3: Inspection of welded joints*

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Non-destructive testing — Metal magnetic memory —

Part 2: General requirements

1 Scope

This part of ISO 24497 specifies the general requirements for the application of the method of metal magnetic memory of components, units, equipment, and structures for various application purposes. It covers non-destructive testing.

The purposes of the method are the following.

- Determination of heterogeneity of the stress/strain state of equipment and structures and revealing of stress concentration zones as the main sources of damage.
- Determination of locations to perform metal sampling in stress concentration zones for assessment of the microstructural-mechanical state.
- Early diagnostics of fatigue damage and evaluation of equipment and structure life.
- Reduction of testing and material costs with its utilization in combination with conventional methods of non-destructive testing.
- Quality control of welded joints of various types and embodiment (including contact and spot welding).
- Very quick sorting of new and used machine-building products by their microstructural heterogeneity.

2 Abbreviated terms

The following abbreviations are used in this part of ISO 24497:

- IO: Inspection Object;
- SMLF: Self-Magnetic-Leakage Field;
- MMM: Metal Magnetic Memory;
- NDT: Non-Destructive Testing;
- SCZ: Stress Concentration Zone.

NOTE The Stress Concentration Zone (SCZ) is characterized by an abrupt local change of magnetization in the test object. Under examination SCZ is indicated as an abrupt local change of the SMLF. SCZ is formed in places of defect concentration, heterogeneity of metal microstructure; i.e., along welded joints or in zones of steady dislocation slip band caused by static or cyclic loads.