

International Standard



6933

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Railway rolling stock material — Magnetic particle acceptance testing

Matériel roulant de chemin de fer — Essai de réception magnétoscopique

First edition — 1986-06-01

UDC 629.4.02 : 620.179.4

Ref. No. ISO 6933-1986 (E)

Descriptors : railway equipment, railway rolling stock, steel products, axles, wheels, tests, magnetic tests, acceptance testing.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6933 was prepared by Technical Committee ISO/TC 17, *Steel*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Railway rolling stock material — Magnetic particle acceptance testing

1 Scope and field of application

1.1 This International Standard specifies a method and procedure for detection of surface discontinuities by means of magnetic particle acceptance testing of railway rolling stock material such as axles and wheels (see ISO 1005/3 and ISO 1005/6).

1.2 Unless otherwise agreed, this International Standard shall be applied when magnetic particle tests are agreed or specified for products to be delivered in accordance with the various parts of ISO 1005.

2 References

ISO 1005, *Railway rolling stock material* —

Part 3 : Axles for tractive and trailing stock — Quality requirements.

Part 6 : Solid wheels for tractive and trailing stock — Quality requirements.

3 Information to be supplied by the purchaser

Where magnetic particle acceptance tests are to be carried out the purchaser shall, where applicable, state on his enquiry and order

- a) which surface areas shall be inspected and the appropriate direction of magnetic field as given in table 2;
- b) whether, in the case of axles, a demagnetization of the products is required (see clause 9).

4 General requirements

When magnetic particle tests are specified for the acceptance of the products, these shall be carried out at the manufacturer's works by competent staff, and, if so requested, in the presence of a representative of the railway.¹⁾

5 Main characteristics of the equipment; inks and testing procedure

5.1 Survey

Table 1 gives a survey of the main testing variables permitted by this clause provided that the requirements for sensitivity setting in clause 6 are complied with.

5.2 Testing equipment and recommendations for use

The testing equipment shall be suitable for performing the following operations :

- magnetization (see 5.2.1)
- application of magnetic particles (see 5.2.2)
- observation with suitable lighting (see 5.2.3)
- where required (see clause 9), demagnetization (see 5.2.4).

5.2.1 Magnetization facilities and methods

5.2.1.1 Magnetization facilities

The magnetization facilities shall be suitable for the application of one of the following basic magnetization methods :

- a) the current flow method (see 5.2.1.2);
- b) the magnetic flux method (see 5.2.1.3 and also 5.4).

5.2.1.2 Current flow method

Magnetization is achieved by passing an electric current, by means of electrodes, of such an intensity that at each extremity of the region to be tested [see figure 1 a)] the requirements for sensitivity setting (see clause 6) are complied with. Precautions shall be taken to avoid arcing at the contacts by using electric conductor pads and by switching off the current before withdrawing the pads.

1) Here and throughout the text, "representative of the railway" should be understood to mean the representative of the railway administration.