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Railway applications – Rolling stock – Requirements for non- destructive testing on running gear in railway maintenance – Part 1: Wheelsets

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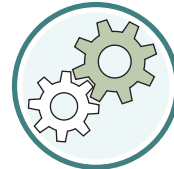
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EUROPEAN STANDARD

EN 16910-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2018

ICS 45.040

English Version

**Railway applications - Rolling stock - Requirements for
non-destructive testing on running gear in railway
maintenance - Part 1: Wheelsets**

Applications ferroviaires - Matériel roulant - Exigences
pour les essais non destructifs sur les organes de
roulement lors de la maintenance ferroviaire - Partie 1:
Essieux

Bahnwendungen - Schienenfahrzeuge -
Anforderungen an die zerstörungsfreie Prüfung an
Fahrwerken in der Instandhaltung - Teil 1: Radsätze

This European Standard was approved by CEN on 22 January 2018.

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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

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SS-EN 16910-1:2018 (E)

European foreword

This document (EN 16910-1:2018) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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Introduction

For many years, non-destructive testing (NDT) has been used as a part of the maintenance system on European networks to control the influence of in-service condition on safety-relevant assembly groups, components and parts in order to ensure that the inspected entity treated will be used in-service in a safe condition.

The maintenance standard (EN 15313 wheelsets maintenance) requires appropriately trained and capable personnel undertaking these NDT maintenance tasks (see EN ISO 9712:2012).

The purpose of this document is to describe the necessary requirements on NDT additional to the existing standards to promote safety, interoperability and cross acceptance.

The maintenance plan for wheelsets should ensure safe operation of railway vehicles at the right cost. It deals with wear, unexpected damages, and takes into account the vehicles usage and the track conditions. In this context, NDT is used to search for defects and failures on wheelsets.

SS-EN 16910-1:2018 (E)

1 Scope

This European Standard provides the specific requirements for NDT of wheelsets for:

- in-service maintenance;
- off-vehicle maintenance;
- NDT personnel;
- NDT documentation (Procedure and Instruction);
- traceability of the maintenance NDT results.

It gives guidance for the introduction of new NDT techniques.

For this standard, the following NDT methods are considered:

- Ultrasonic testing (UT);
- Magnetic particle testing (MT);
- Eddy Current testing (ET).

Other methods considered in EN ISO 9712:2012 are outside the scope of this standard.

For this purpose, a catalogue of the common defects is given as guidance. Examples of common NDT indications are given in an informative annex.

Specific NDT requirements relating to the quality of new products delivered by manufacturers are not within the scope of this European Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15313, *Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance*

EN ISO 9712:2012, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2012)*

CEN ISO/TR 25107:2006, *Non-destructive testing — Guidelines for NDT training syllabuses (ISO/TR 25107:2006)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15313 and the following apply.

3.1

non-destructive tests

NDT

process of examining a component to assess its integrity by a means which does not compromise the components properties and characteristics

3.2

indication

representation or signal from a discontinuity in the format typical for the NDT method used

[SOURCE: EN 1330-2:1998, 2.12]

3.3

defect

discontinuity defect

discontinuity or inhomogeneity which creates an indication which can prevent the component from fulfilling its designed purpose

3.4

acceptance or rejection criteria

criteria against which the specimen is examined in order to determine its acceptability / rejectability

3.5

cracks

local separation of material mostly of 2 dimensions direction resulting from thermal, chemical or mechanical exposure

3.6

NDT instruction

written description of the precise steps to be followed in testing to an established standard, code, specification or NDT procedure

[SOURCE: EN ISO 9712:2012, 3.16]

3.7

NDT method

discipline applying a physical principle in non-destructive testing

[SOURCE: EN ISO 9712:2012, 3.17]

3.8

NDT procedure

written description of all essential parameters and precautions to be applied when non-destructively testing products in accordance with standard(s), code(s) or specification(s)

[SOURCE: EN ISO 9712:2012, 3.18]

3.9

NDT technique

specific way of utilizing an NDT method