Nederlandse norm

NEN-EN 17023

(en)

Railtoepassingen - Onderhoud van spoorwegvoertuigen - Opstellen en aanpassen van een onderhoudsplan

Railway applications - Railway vehicle maintenance - Creation and modification of maintenance plan

ICS 45.060.01

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EUROPEAN STANDARD

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English Version

Railway applications - Railway vehicle maintenance - Creation and modification of maintenance plan

Applications ferroviaires - Maintenance des véhicules ferroviaires - Création et modification du plan de maintenance

Bahnanwendungen - Instandhaltung von Eisenbahnfahrzeugen - Erstellung und Änderung von Instandhaltungsplänen

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European foreword

This document (EN 17023:2018) 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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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

In the field of railway maintenance, the purpose of this document is to define key processes to create and modify the maintenance plan for railway vehicles.

Each railway vehicle has to be in a safe state of running and achieve performance targets when in service. This is achieved by operating the vehicle under defined conditions, and performing a maintenance system, including corrective and preventive maintenance on certain components/functions at certain periodicities at a maintenance facility.

The maintenance plan is a part of the maintenance system, contains the descriptions of the activities, quality criteria, procedures and intervals to be undertaken during scheduled maintenance with the objective to ensure the vehicle complies with the target condition.

The construction of new vehicles is accompanied by an appropriate set of technical, maintenance and operating documents to support the vehicles along their life cycle.

1 Scope

This document describes the methodology and the elements to be considered for the creation and modification of a vehicle maintenance plan, up to the validation. This document describes general requirements (list of input data, structure and content) of a maintenance plan.

For the creation and modification of a maintenance plan, this document lists:

— preparation and selection of documents and input data;

— analysis of input data and development of the maintenance plan up to its validation;

— process to be followed to create a maintenance plan;

— reasons to check a current maintenance plan;

— risk assessment and process to be followed to modify the maintenance plan;

— monitoring conditions (e.g. justification methods, verification, validation, documentation, roles, skills and knowledge).

This document applies only to preventive maintenance.

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.

EN 17018, *Railway applications — Rolling stock maintenance — Terms and definitions*

EN 31010, *Risk management — Risk assessment techniques (IEC/ISO 31010)*

EN 50126 (all parts), *Railway Applications — The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS)*

EN 50128, *Railway applications — Communication, signalling and processing systems — Software for railway control and protection systems*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions given in EN 17018 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.2 Symbols and abbreviations

For the purposes of this document, the abbreviations given in Table 1 apply.

Table 1 — Abbreviations

Abbreviation	Designation
CSM RA	Common Safety Method in Risk Evaluation and Assessment
EUAR	European Union Agency for Railways
FMECA	Failure Mode, Effects and Criticality Analysis
LCC	Life Cycle Costs
MP	Maintenance Plan
NIB	National Investigation Body
NSA	National Safety Authority
OEM	Original Equipment Manufacturer
RAMS	Reliability, availability, maintainability and safety
REX	Return of Experience
TSI	Technical Specification for Interoperability

4 General requirements for maintenance plans

4.1 Introduction

Vehicles shall be in a safe state of running by means of a maintenance system. Part of this maintenance system is the maintenance plan which contains the description of activities and procedures to be undertaken during scheduled maintenance with the objective of ensuring that the vehicle complies with the target condition.

Initially, all the information relevant for maintenance is collected, and a maintenance plan for testing and commissioning stages is prepared to ensure the vehicle is in a safe state of running and in good order when released for the beginning of the operation. This testing and commissioning maintenance plan may not cover a part of the components/functions relevant for maintenance (e.g. interior fittings).

However, a complete maintenance plan is prepared and applied from the beginning of the service operation of the railway vehicle and during the lifetime.

The ongoing suitability of the maintenance plan should be checked and over time the maintenance plan can be changed to reflect how components wear or the service usage of the vehicle changes.

Maintenance plans shall be created according to Clause 5 and modified according to Clause 6.

4.2 Input data

For the creation or modification of a maintenance plan, all relevant and available input data shall be considered, as follows:

a) legislation, regulations and standards:

   — national and European legislation where applicable, depending on the operational area of use;

   — national and European standards which apply for the operational area of use;

b) technical documentation:

   — current and target configuration of the vehicle;

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