SLOVENSKI STANDARD
SIST EN 15313:2010

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Železniške naprave - Zahteve za vzdrževanje kolesnih dvojic - Vzdrževanje kolesnih dvojic med obratovanjem in vzdrževanje demontiranih kolesnih dvojic

Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance

Bahnanwendungen - Radsätze und Drehgestelle - Radsatzinstandhaltung

Application ferroviaires - Exploitation des essieux en service - Maintenance des essieux en exploitation ou déposés

Ta slovenski standard je istoveten z: **EN 15313:2010**

ICS:

45.040	Materiali in deli za železniško tehniko	Materials and components for railway engineering

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EUROPEAN STANDARD

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Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15313:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

To ensure safety and interoperability, this European Standard gives:

— the mandatory limits for in-service and off-vehicle wheelsets;

— the mandatory operations to be carried out for which the specific values (and/or criteria) remain to be defined in the maintenance plan.

This document applies to wheelsets complying with the following European Standards:

— EN 12080, EN 12081, EN 12082;

— EN 13103, EN 13104;

— EN 13260, EN 13261, EN 13262;

— EN 13979-1;

— EN 13715,

that comprise:

— the axle with wheel diameters greater than or equal to 330 mm;

— axle boxes with bearings and grease.

This document is also applicable to wheelsets:

— fitted with brake discs, final drive, transmission or noise-damping systems, as appropriate;

— not complying with the above European Standards, but complying with the international requirements in force before the approval of these standards;

— with tyred wheels whose characteristics are given in Annex D.

For bilateral and domestic traffic, this document may be applied, noting that different values may be used.

All the dimensions of this document are in millimetres (mm).

NOTE The requirements to be met by components other than axles, wheels, axle boxes, bearings and grease (e.g. brake disc, final drive, transmission, noise-damping systems, etc.) shall be defined in a specific document.

2 Normative references

The following referenced documents are indispensable for the application 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 287-1, *Approval testing of welders — Fusion welding — Part 1: Steels*

EN 473, *Non-destructive testing — Qualification and certification of NDT personnel — General principles*

EN 13260, *Railway applications — Wheelsets and bogies — Wheelsets — Product requirements*

EN 13261, *Railway applications — Wheelsets and bogies — Axles — Product requirements*

EN 13262, *Railway applications — Wheelsets and bogies — Wheels — Product requirements*

EN 13715, *Railway applications — Wheelsets and bogies — Wheels — Tread profile*

EN 13979-1, *Railway applications — Wheelsets and bogies — Monobloc wheels — Technical approval procedure — Part 1: Forged and rolled wheels*

EN ISO 9934-1, *Non-destructive testing — Magnetic particle testing — Part 1: General principles (ISO 9934-1:2001)*

EN ISO 9934-2, *Non-destructive testing — Magnetic particle testing — Part 2: Detection media (ISO 9934-2:2002)*

EN ISO 9934-3, *Non-destructive testing — Magnetic particle testing — Part 3: Equipment. (ISO 9934-3:2002)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
operation
everday use of wheelsets in service on the track or during routine planned maintenance.

NOTE This term also includes any in-service problems and their treatment.

3.2
competent technical department
department having experience in the wheelset maintenance field having already written the rules

NOTE Departments of the former "networks" come into this category.

3.3
technical expert
person recognized and designated as such by the railway undertaking

3.4
former networks
historical networks existing before the publication of the European Directives and which had specified the requirements for the wheelsets registered in their respective country

4 Maintenance

4.1 General

Maintenance involves:

— maintenance of in-service wheelsets;

— maintenance of off-vehicle wheelsets;

— overhaul after in-service incidents (e.g. overloads, hot axle box detection, wheelset bearings subject to water ingress, etc.).

An in-service wheelset shall be maintained by a maintenance undertaking qualified for this type of wheelset.

For maintenance of wheelsets, as a minimum, the following shall be utilized:

— a maintenance plan;

— service experience;

— an organization for component and production management;

— specific qualified wheelset tools;

— qualified staff for non-destructive testing and welding.

4.2 Maintenance organization

4.2.1 Maintenance plan

For wheelset maintenance, it is necessary to have a maintenance plan for the wheelsets when in-service and off-vehicle.

The maintenance plan shall specify:

— the actions to the requirements and mandatory operations listed in this standard;

— the maintenance intervals;

— any specific measures to be implemented.

This maintenance plan shall be written by a competent technical department in the railway field and approved by the technical expert of the owner undertaking.

4.2.2 Service experience

The maintenance plan shall be reviewed to include:

a) the service experience based on the performance of parts in service;

b) the corrective actions necessary for dealing with defects:

1) detected outside the maintenance plan;

2) established on the track using specific devices.

The general principle of service experience is shown in Figure 1:

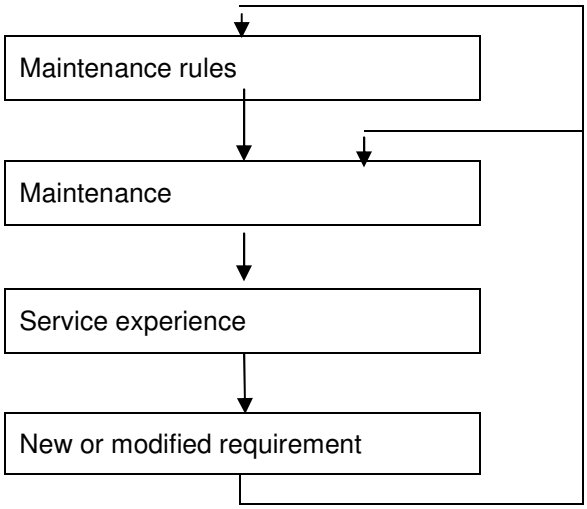


Figure 1 — Service experience

4.2.3 Traceability – storage – transportation

4.2.3.1 Wheelset identification

In order to ensure traceability, in-service wheelsets shall have marks complying with the requirements of EN 13260, EN 13261 and EN 13262.

It is recommended having:

— the owner's mark on the wheel (e.g. on the hub, with the same requirement as for the other marks, as specified in EN 13262; painted on the web, etc.);

— external identification on wheelset with axle boxes mounted (e.g. tag or metal plate on the axle box, collar on the axle, etc.).

None of the external identification marks shall adversely affect the axle or its components.

All the identification marks shall be described in a specific document to support the management of the wheelsets during their service lives.

The markings are applied to the wheelsets when the latter are being overhauled.

NOTE It is recommended, where possible, for these markings to be applied retrospectively, even when the wheelset components were not manufactured in accordance with EN 13261 or EN 13262.

4.2.3.2 Traceability of operations and transfers

The traceability shall be ensured throughout the life of the in-service wheelset by recording the various operations and transfers.

The traceability shall be recorded in a database (e.g. paper, electronic, etc.) and shall be validated.

The traceability shall be secured.

The contents of the database and process for capturing information shall be described in a specific procedure.

In the case of a computerized database, the consistency of the recordings shall be checked on a regular basis.

4.2.3.3 Grease storage

Grease storage areas shall be protected from direct sunlight.

4.2.3.4 Component storage

Component parts of the wheelsets shall be protected against damage and corrosion.

It is recommended storing the components in dry conditions with free air circulation.

4.2.3.5 Handling and transportation conditions for new or overhauled wheelsets

A procedure shall be written for safe handling and transporting new or overhauled wheelsets or their components.

4.3 Qualification of equipment and systems

4.3.1 General principle

All railway-specific tools, gauges and systems for wheelset maintenance (e.g. checking for circularity defect, stresses in the wheel rim, non-destructive testing, etc.) shall be qualified to ensure that requirements of this standard are met.

A qualification file shall be created for all railway-specific equipment in order to ensure that it meets the specifications.

4.3.2 Qualification file for equipment and systems

This file shall indicate that the equipment or railway-specific system has the appropriate levels of sensitivity and repeatability in line with the desired objective. Performance sustainability shall be demonstrated by means of calibrated reference equipment.

In addition, when new methods are used, it shall be ensured that the results achieved with the new equipment or system are at least equivalent to those obtained with the former (e.g. differentiation between parts with or without defects, etc.).

4.4 Staff certification and competence

Certification is necessary for staff carrying out:

a) non-destructive testing:

   the staff shall be qualified according to EN 473 or equivalent and authorized to work on specific processes;

b) welding operations:

the staff shall be qualified according to EN 287-1 or equivalent for components where welding is authorized.

4.5 Maintenance organization plan

The general maintenance of the wheelsets is organized as shown in Figure 2.

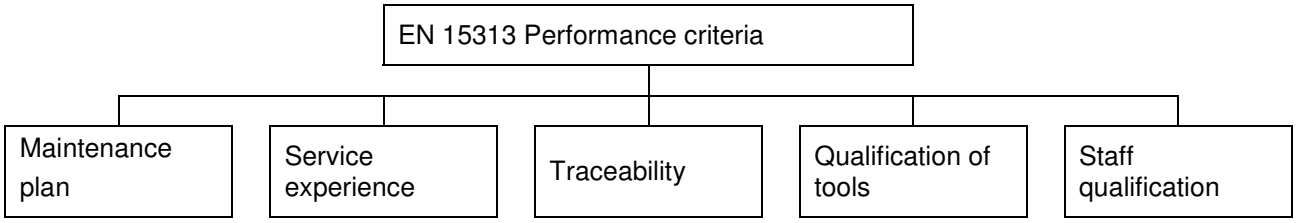


Figure 2 — General maintenance organization

4.6 Qualification of an undertaking for the maintenance of in-service or off-vehicle wheelsets

The qualification principle shown in Figure 3 applies to each of the following activities:

— maintenance of in-service wheelsets;

— maintenance of off-vehicle wheelsets;

— maintenance activity component (example: reprofiling).

The qualification shall be reviewed before its extension to a new wheelset.

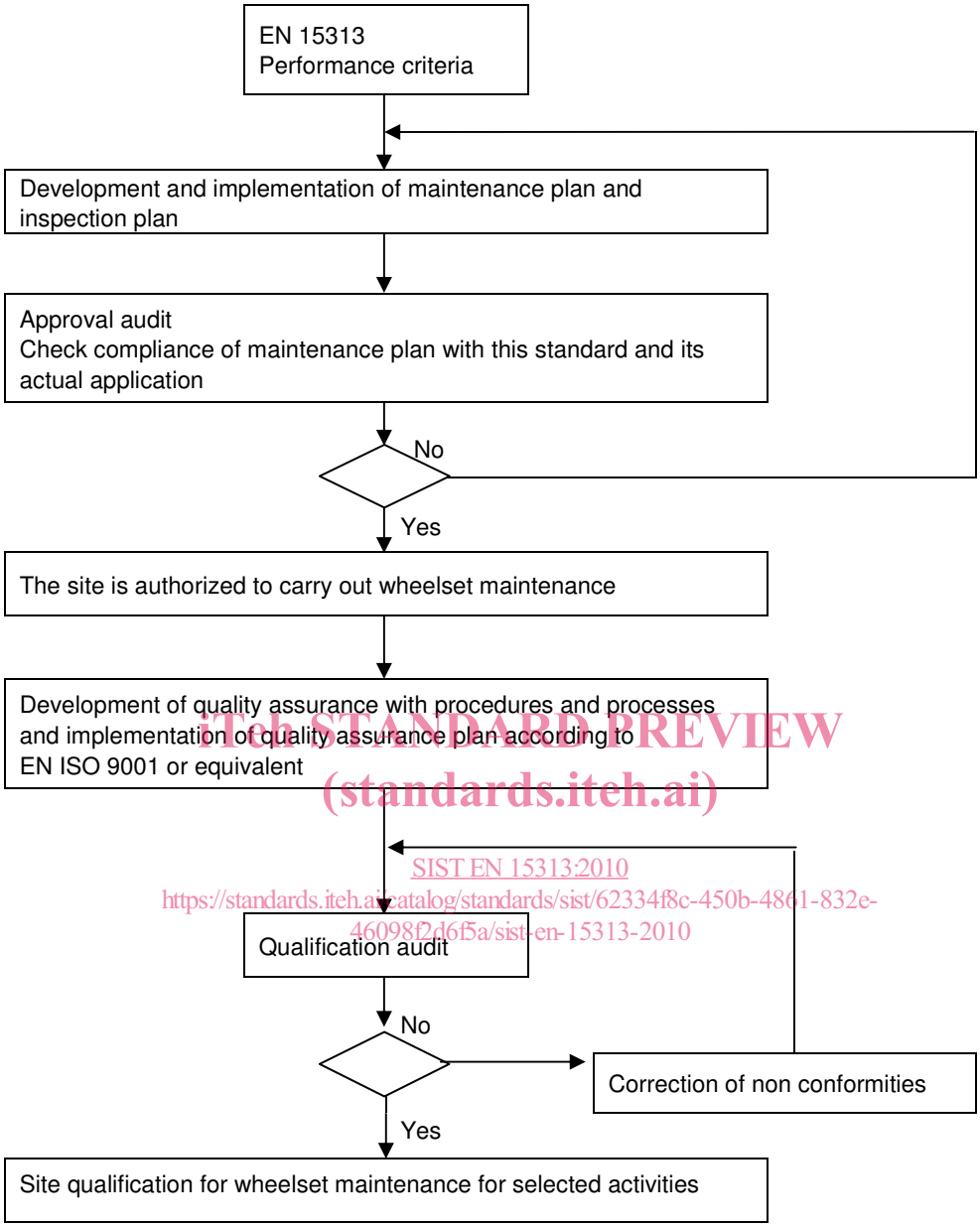


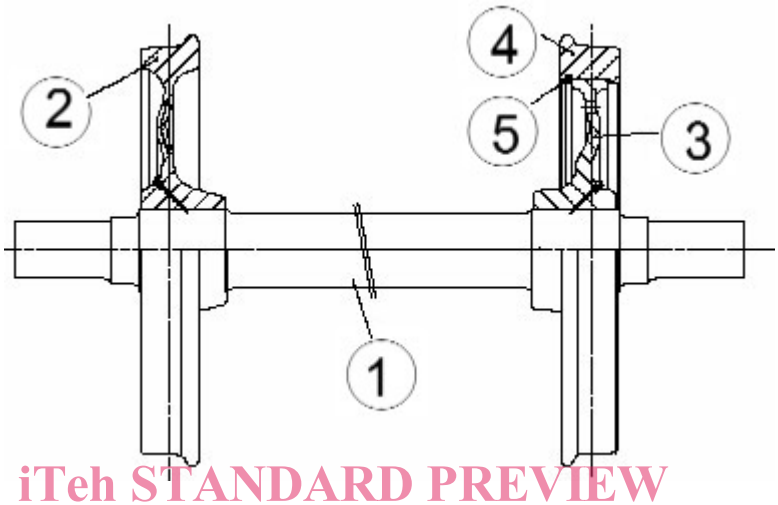
Figure 3 — Flow chart for qualification of an undertaking

5 Definition and illustrations of a wheelset, its associated components and defects

5.1 Definition and illustrations of a wheelset

5.1.1 Wheelset

The various components of a wheelset are shown in Figures 4a) and 4b).



Key

1 axle
2 monobloc wheel
3 wheel centre
4 tyre
5 retaining ring

a) — Wheelset — Principal components