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Rail Industry Standard for wheelsets handling and storage
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Rail Industry Standard for wheelsets handling and storage

Issue record

Issue	Date	Comments
One	June 2015	Original document This document has been developed to provide requirements and guidance on the handling and storage of wheelsets to protect their serviceability.

Superseded or replaced documents

The following Railway Group documents are superseded or replaced, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GM/GN2498 issue one	All	06 June 2015

Supply

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Rail Industry Standard for wheelsets handling and storage

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Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 This document is a standard on wheelset handling and storage, for the rail industry to use if they so choose.
- 1.1.2 This document provides requirements, supported by guidance, to ensure railway wheelsets are handled and stored to protect their serviceability.

1.2 Application of this document

- 1.2.1 A member of RSSB may choose to adopt all or part of this document through internal procedures or contract conditions. Where this is the case the member of RSSB will specify the nature and extent of application.
- 1.2.2 Therefore specific compliance requirements and dates have not been specified since these will be the subject of internal procedures or contract conditions.

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1.4 The structure of this document

- 1.4.1 This document is set out as a series of requirements, in some cases followed by relevant guidance. The guidance is indicated by prefixing the paragraph number with the letter 'G'.

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1.6 Approval and authorisation of this document

- 1.6.1 The content of this document will be approved by Rolling Stock Standards Committee on 12 March 2015.
- 1.6.2 This document will be authorised by RSSB on 29 April 2015.

Rail Industry Standard for wheelsets handling and storage

Part 2 Wheelsets handling and storage

2.1 General requirements for handling and storage of wheelsets

2.1.1 The condition of wheelsets and wheelset components shall be preserved during handling and storage, including unserviceable wheelsets being returned for maintenance.

G 2.1.1.1 Environmental and atmospheric conditions that the wheelset or component will be exposed to during handling or storage influences the packaging and protection to be used.

G 2.1.1.2 The detrimental effects that can be experienced during handling and storage include:

- a) Climatic conditions, for example, rain and water ingress, contamination, temperature and effects of sunlight.
- b) Dirt, such as contamination by airborne debris or contamination from lifting equipment and securing straps.
- c) Abrasion, for example, damage resulting from loose covering sheets, loose ends of securing straps and contaminated padding material beneath securing straps.
- d) Contamination, for example, resulting from the use of inappropriate protection materials.

2.1.2 When applying protective materials to mitigate the effects of environmental conditions, an assessment shall be undertaken to ensure there are no adverse effects from the materials or the application / removal processes.

G 2.1.2.1 The protective materials, and the process to apply and remove them, can cause damage or deterioration of the components, including: exposed surfaces, adjacent equipment, other protective coatings or lubricants.

G 2.1.2.2 The use of protective tape, such as Denso, leaves a residue on the protected surface which frequently needs to be removed before further assembly or fitting to a vehicle. The application of cleaning products, to remove the residue, can have detrimental effects on components, such as bearings, where contamination of the grease results in breakdown of the lubrication, leading to premature failure.

G 2.1.2.3 The sealing of orifices and connections prevents ingress of debris and water, mitigating damage, repair or premature failure. Coloured temporary weatherproof plugs, covers or similar sealing arrangements provide protection from dirt and water ingress. Such protective plugs or covers provide a visible warning of their presence and reminder for removal before reassembly. The use of protective tapes can be overlooked or incompletely removed in preparation for reassembly, which can cause parts of the tape to become trapped within assemblies, resulting in malfunctions of the systems in service.

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Part 3 Handling of wheelsets

3.1 Introduction

- 3.1.1 This section relates only to the handling of loose wheelsets and their components, including within depots or works and between sites.

3.2 Wheelset handling general

- 3.2.1 The handling processes and equipment employed shall not cause damage to the wheelsets or wheelset components or their protective coatings.

3.3 Complete wheelsets

- 3.3.1 Any exposed journals, bearings, gears and similar exposed surfaces shall be protected from corrosion and mechanical damage.
- 3.3.2 The methods employed for handling shall not damage the wheelsets.

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- G 3.3.2.1 Direct metallic contact between the wheelset and lifting or restraining equipment can damage the finished surface and protective coating. This potentially results in:
- a) Mechanical damage that can initiate fatigue fractures.
 - b) Damage to the protective coating leading to corrosion of the finished surface and potential for corrosion fatigue. (Some protection systems once damaged can allow the propagation of corrosion beneath the coatings, producing ribbons of corrosion across the surface that are only visible once the coating is removed.)
 - c) Unplanned rectification work.
- Or
- d) Scrapping of the damaged component.
- G 3.3.2.2 The types of wheelsets lifting equipment commonly used include:
- a) Non-damaging fibre slings around the axlebox housing.
 - b) Hooks or clamps with rounded corners that locate under the wheel rim.
 - c) Padded cradles (for example, lined Vee-blocks), under plain axles or the suspension tubes of motored axles (taking care to avoid high loads through sharp lifting or traversing rough surfaces that will cause damage to the bearing).
 - d) Mechanisms supporting the wheel tread, including cradles.
- G 3.3.2.3 Methods of securing wheelsets to flatbed vehicles include wooden chocks and tensioned fibre webbing straps. These provide a means of location and restraint on the vehicles although care is needed to prevent damage to the protective coating, as highlighted in G 3.3.2.1.b), whilst ensuring security. To avoid damage to the axle protective coating the fibre strapping may be applied over the axleboxes, taking care to prevent contact with the axle journal transitions.
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- 3.3.3 Wheelsets shall not be lifted or secured with equipment contacting the wheelset to axle body transitions, stress relieving groove or other transition. Contact shall not occur 150 mm of the wheelset / hub or other raised seats (including raised brush tracks), refer to Figure 1.