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Utgåva 1

**Järnvägar – Mätning av nya och modifierade
godsvagnar –**
Del 5: Boggier med tre hjulpar

**Railway applications – Measuring of new and
modified freight wagons –**
Part 5: Bogies with 3 wheelsets

ICS 45.060.20

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English version

Railway applications - Measuring of new and modified freight wagons - Part 5: Bogies with 3 wheelsets

Applications ferroviaires - Mesure des wagons lors de leur construction et lors de modifications - Partie 5: Bogies à trois essieux

Bahnanwendungen - Vermessung von Güterwagen beim Neubau und bei Umbauten - Teil 5: Drehgestelle mit 3 Radsätzen

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 13775-5:2004 (E)

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Foreword

This document EN 13775-5:2004 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of an identical text or by endorsement, at the latest by December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

This European Standard EN 13775 "Railway applications – Measurement of new and modified freight wagons" comprises the following parts:

- Part 1: Measuring principles
- Part 2: Freight wagons with bogies
- Part 3: Freight wagons with 2 wheelsets
- Part 4: Bogies with 2 wheelsets
- Part 5: Bogies with 3 wheelsets
- Part 6: Multiple and articulated freight wagons

Annex A is normative, Annexes B to D are informative.

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

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Introduction

It is normal practice in all European countries to carry out checks and measurements on the major components of new and modified freight wagons and bogies. In view of the importance of uniform criteria for international transport in all European countries, this European Standard has been prepared.

1 Scope

This European Standard specifies principles and requirements for measuring bogies with 3 wheelsets. This ensures that the measuring processes are applied in accordance with uniform criteria. It applies to new and modified bogies with 3 wheelsets.

Provisions going beyond the scope of these requirements are generally agreed between the contracting parties involved.

The measuring processes relate to the bogies with or without add-ons in their entirety or just part of them if the geometrical structure does not permit anything else. Where appropriate, other measuring processes not specified here are necessary and are specified in each individual case.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13775-1:2003, *Railway applications — Measuring new and modified freight wagons — Part 1: Measuring principles.*

3 Terms and definitions


For the purposes of this European Standard, the terms and definitions given in EN 13775-1:2003 apply.

4 Symbols and abbreviations


For the purposes of this European Standard, the following symbols and abbreviations apply.

1 Bogie end 1

2 Bogie end 2

 Bearing point for suspension compensating beam

 Suspension bracket with bushing

 Axle-guard with axle-guard cheek

5 Requirements

5.1 General

The limit deviations apply to the finished product in each case.

Deviations from this European Standard are allowed as long as they do not assume proportions that represent an operating hazard. However, they shall be agreed with the contracting party involved and the inspection agency.

5.2 Precondition

The precondition for carrying out the measuring processes as specified in this standard is that the measuring principles laid down in EN 13775-1 are adhered to.

Not all the measuring point dimension designations are listed in the figures in this standard. Unless otherwise indicated, the figures show the normal position.

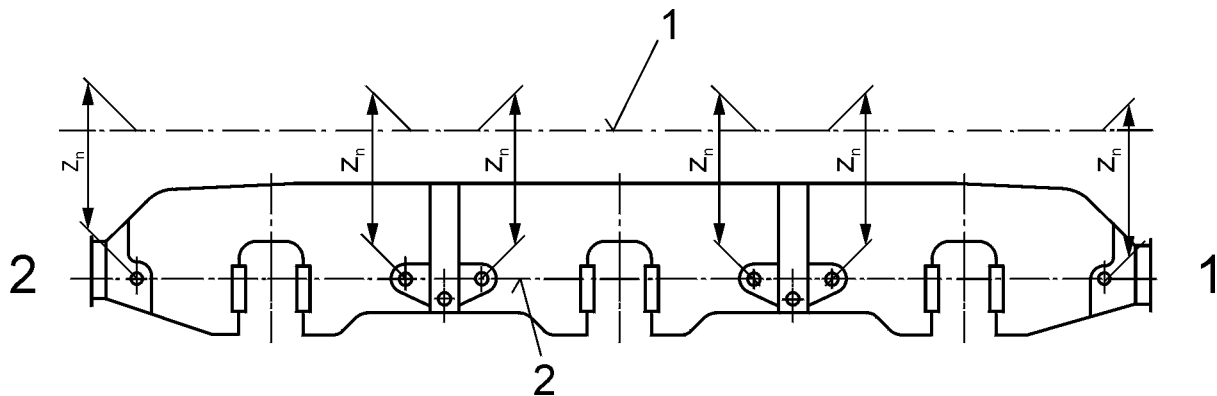
5.3 Measuring processes

A control sheet form for the results of the measuring processes is given in annex A.

Measuring process 1

Position of the suspension bracket holes and position of the holes for the compensating beam.

For the measuring process, the frame is moved into an unrestrained support position.



Key

- 1 Levelling plane
- 2 Theoretical auxiliary plane

Figure 1

The distance from the suspension bracket holes and the suspension compensating beam holes z_n to the levelling plane is measured (see Figure 1). The z_n values shall be averaged for each beam and the mean value shall be adopted for further measurement of both holes.

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From the 8 measurements obtained z_n , the distances between the 6 pairs of suspension brackets and the levelling plane shall be determined in the middle of the axle in each case.

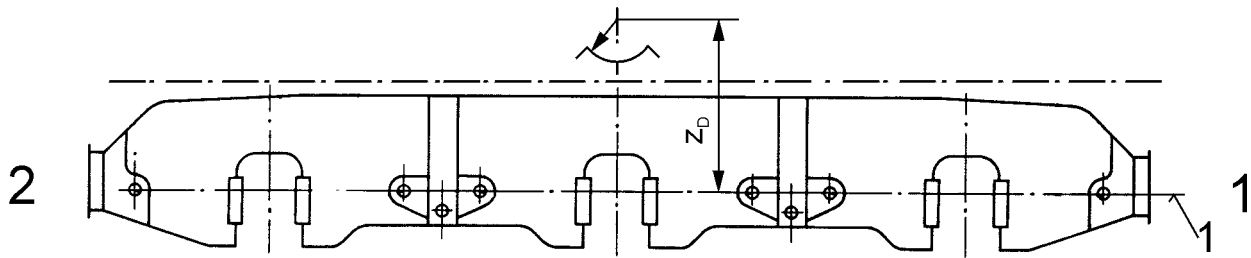
The deviation z_n of the 6 mean values to the levelling plane shall be calculated.

Limit deviations for z_n : ± 3 mm

See annex B.

Measuring process 2

Distance between the theoretical plane of suspension bracket bushing pair and the centre of the bogie pivot.



Key

1 Theoretical plane of suspension bracket bushing pair (auxiliary plane)

Figure 2

The theoretical plane of the suspension bracket bushing pair determined in measuring process 1 is the reference plane for measuring the centre point of the bogie pivot (see Figure 2).

Limit deviations for z_D : ± 2 mm

Measuring process 3

Distance between the outside front faces of the suspension brackets and the bearing points for the suspension compensating beams in the transverse direction of the bogie.

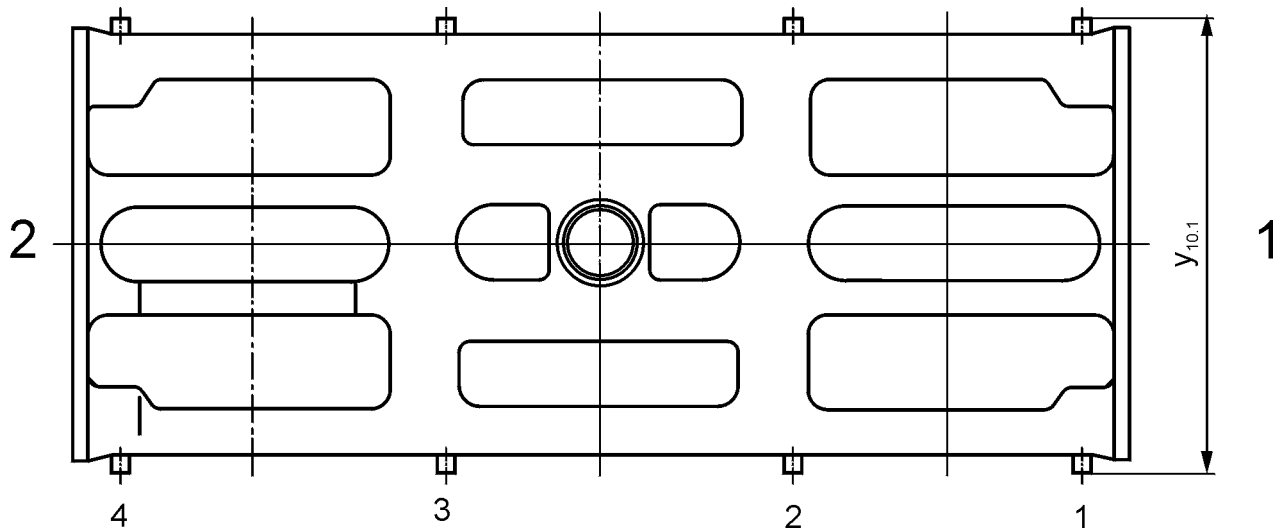


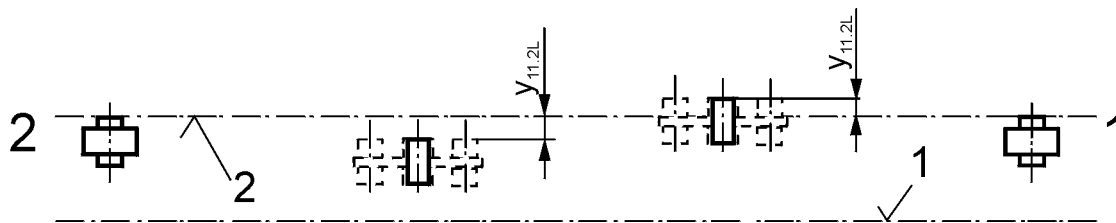
Figure 3

The distance y_{10} between the opposite front faces of the suspension brackets and the bearing points for the suspension compensating beams is measured at measuring points 1, 2, 3, 4 (see Figure 3).

Limit deviation for y_{10} : ± 2 mm

Measuring process 4

Position of the suspension bracket front faces and the bearing points for the compensating beams.



Key

- 1 Centre line of the bogie
- 2 Reference plane

Figure 4

The deviation y_{11} of the four front faces of the compensating beams from the alignment of the front faces of the outer suspension brackets is measured (see Figure 4).

Limit deviations for y_{11} : ± 2 mm

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Measuring process 5

Diagonal distance between the centres of pairs of suspension brackets.

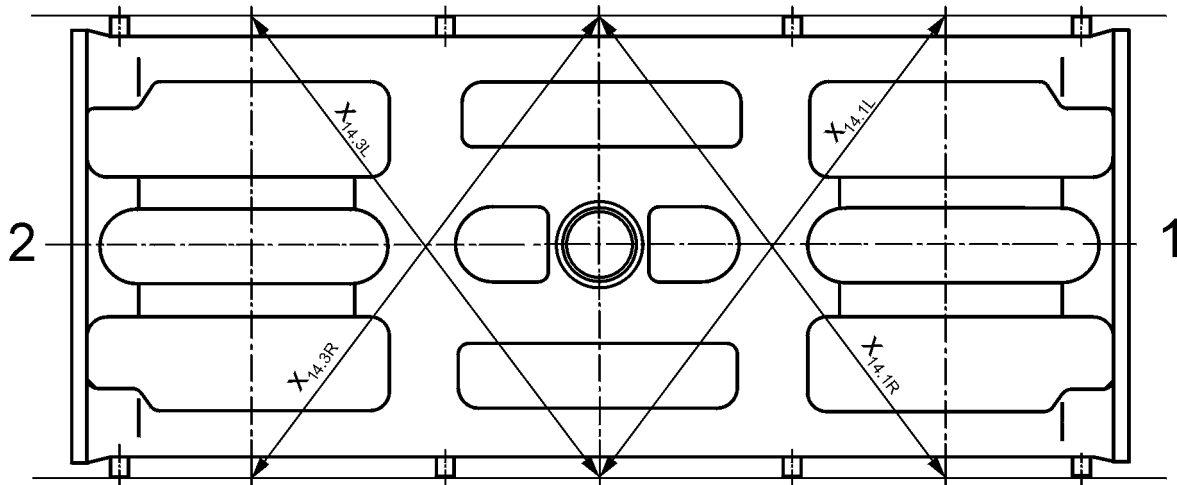


Figure 5

The diagonal distances x_{14} between the centres of the associated pairs of suspension brackets are measured (see Figure 5).

Permissible difference for two diagonally associated x_{14} dimensions: 3 mm

Measuring process 6

Concentricity of the bogie pivot.

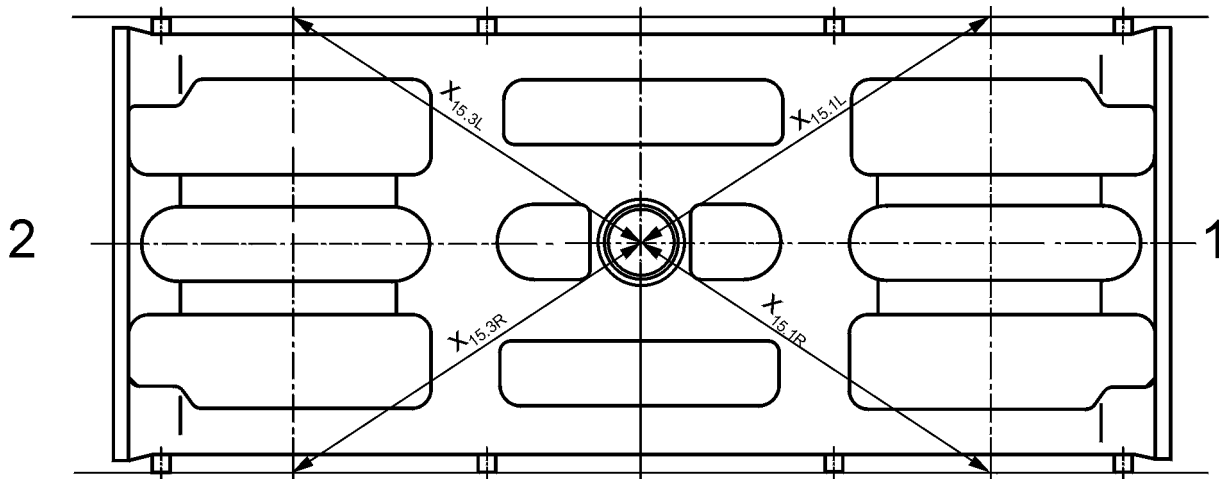


Figure 6

The dimensions $x_{15.1}$ and $x_{15.3}$ are measured on the right-hand and left-hand sides (see Figure 6).

Permissible difference for x_{15} : 4 mm

Measuring process 7

Wheel base

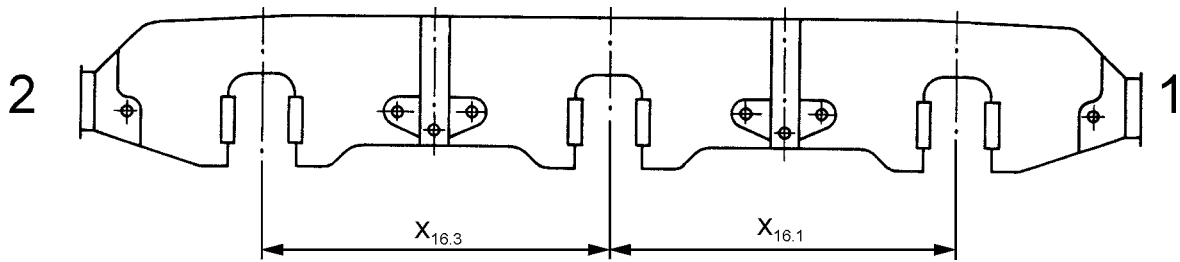


Figure 7

The distances between the pairs of suspension brackets are measured at measuring points $x_{16.1}$ and $x_{16.3}$ on the right-hand and left-hand sides (see Figure 7).

Limit deviations for x_{16} : ± 2 mm

Permissible difference between $x_{16.1 R}$ and $x_{16.1 L}$: 2 mm

and $x_{16.3 R}$ and $x_{16.3 L}$: 2 mm

Measuring process 8

Distance between the suspension bracket holes and/or the compensating beam holes.

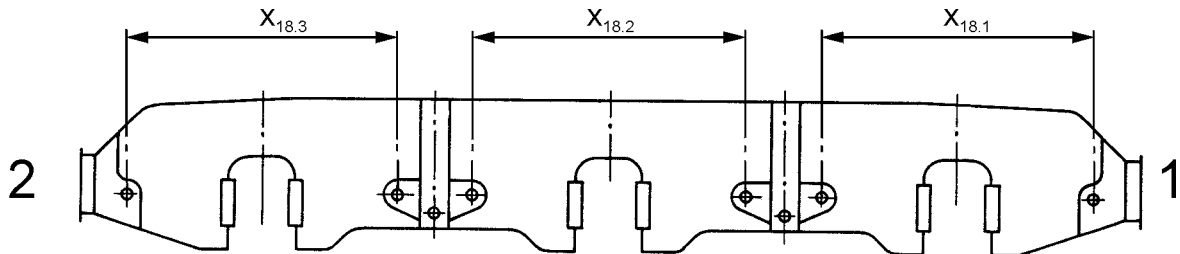


Figure 8

The dimensions $x_{18.1}$ to $x_{18.3}$ are measured on the right-hand and left-hand sides (see Figure 8).

Limit deviations for x_{18} : ± 2 mm