

Railway applications — Measuring of new and modified freight wagons —

Part 1: Measuring principles

The European Standard EN 13775-1:2003 has the status of a
British Standard

ICS 45.060.20

National foreword

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The UK participation in its preparation was entrusted by Technical Committee RAE/1, Railway applications, to Subcommittee RAE/1/-/9, Wagons (tank/freight), which has the responsibility to:

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- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Railway applications - Measuring of new and modified freight wagons - Part 1: Measuring principles

Applications ferroviaires - Mesure des wagons lors de leur construction et lors de modifications - Partie 1: Principes de mesure

Bahnanwendungen - Vermessung von Güterwagen beim Neubau und bei Umbauten - Teil 1: Meßgrundsätze

This European Standard was approved by CEN on 14 February 2003.

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Foreword

This document (EN 13775-1:2003) 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of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by December 2003.

This series of European Standards "Railway applications - Measuring of new and modified freight wagons" comprises the following parts:

- | | |
|--------------|---|
| EN 13775-1 | Part 1: Measuring principles |
| EN 13775-2 | Part 2: Freight wagons with bogies |
| EN 13775-3 | Part 3: Freight wagons with 2 wheelsets |
| prEN 13775-4 | Part 4: Bogies with 2 wheelsets |
| prEN 13775-5 | Part 5: Bogies with 3 wheelsets |
| prEN 13775-6 | Part 6: Tight-coupled freight wagons |

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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 requirements for measuring freight wagons and bogies. This ensures that the measuring methods are applied in accordance with uniform criteria. It applies to new and modified freight wagons and bogies. Provisions going beyond the scope of these requirements ought to be agreed upon by the contracting parties involved.

The measuring methods relate to the whole or parts of the underframes with or without add-ons if the geometrical structure does not permit anything else. Where appropriate, other measuring methods not specified here are necessary and ought to be specified in each individual case. This applies as appropriate to bogies.

2 Normative references

Non Applicable.

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

3.1

modified freight wagons

modifications which change the original identity of the freight wagon

Note In this case, the sub-assemblies ensuring operational safety ought to be measured in accordance with this series in addition to the components changed by the modification.

3.2

modified bogies

modifications which change the original identity of the bogie

NOTE In this case, the sub-assemblies ensuring operational safety ought to be measured in accordance with this series in addition to the components changed by the modification.

3.3

finished product

product in a finished state in which it leaves the supplier

NOTE A product can be a sub-assembly (e.g. underframe bolster), a rough structure (underframe or body) or a finished vehicle.

3.4

substantial modification

modification that changes the original purpose and/or structural shape of the freight wagon, bogie or parts of it

NOTE Substantial modifications can have new inspection and approval methods as a consequence.

3.5

original identity

description of the purpose and structural shape of the freight wagon or bogie in the original inspection or approval records

3.6

component

a clearly definable product that is regarded as inseparable for a specific planning or controlling purpose and/or that cannot be disassembled without destroying it

4 Requirements

4.1 General

Every new or modified freight wagon or bogie shall be measured in accordance with this series.

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

Deviations from this European Standard are permitted as long as they do not include any dimension that represents a hazard to operation. However, they shall be agreed with the relevant contracting party and inspection agency.

The results shall be documented.

4.2 Conditions

The wagon or the components shall be unrestrained.

The limit deviations apply to the finished product. It remains optional to carry out the measurements in the operating or backbone position or in a different sequence to the one specified. There is no link to any specific production method.

4.3 Temperature

Measurements shall be carried out at an ambient temperature of $20\text{ °C} \pm 10\text{ °C}$.

The temperature of the component to be measured shall have the ambient temperature approximately. It shall be ensured that the component is not exposed to a heat source (in particular a radiant heat source).

4.4 Measuring principle

The individual measuring processes are valid under the assumption that the limit deviations do not exceed a size which endangers operation.

4.5 Measuring equipment

Only measuring devices, equipment and instruments with adequate precision shall be used in order to carry out the measurement with the required accuracy. Generally, measuring apparatus with a precision of $\pm 0,5$ mm is adequate.

If calibrated measuring apparatus, devices and instruments are used, the calibration shall be repeated in accordance with the application of the measuring apparatus and documented. Where this apparatus is used, it shall be indicated in the particular measuring process.

4.6 Measuring points, dimensional designations

4.6.1 General

The dimensional designations listed in this series relate to the measuring points and are formed from:

4.6.2 the dimensional letters

x = longitudinal dimension

y = transverse dimension

z = height dimension

4.6.3

an index to differentiate between the dimensions, e.g. x_1 , x_2 etc.

4.6.4

an additional digit in the index to designate the position of the measuring points, numbered from vehicle end 1 upwards per vehicle side, e.g. $x_{3.1}$, $x_{3.2}$ etc.

4.6.5

an additional letter in the index to designate the vehicle side, and looking in the normal position from vehicle end 2 to vehicle end 1:

R is the right-hand side

L is the left-hand side

e.g. $x_{3.1R}$, $x_{3.1L}$ etc.

5 Driving direction, vehicle ends and sides

5.1 General

The following diagrams are given as a guide to orientation only.

5.2 Driving Direction

The driving direction is shown as from left to right (see Figure 1). For vehicles without a preferred direction of travel, the basic rules apply with the following additional requirements for the individual structural shapes.

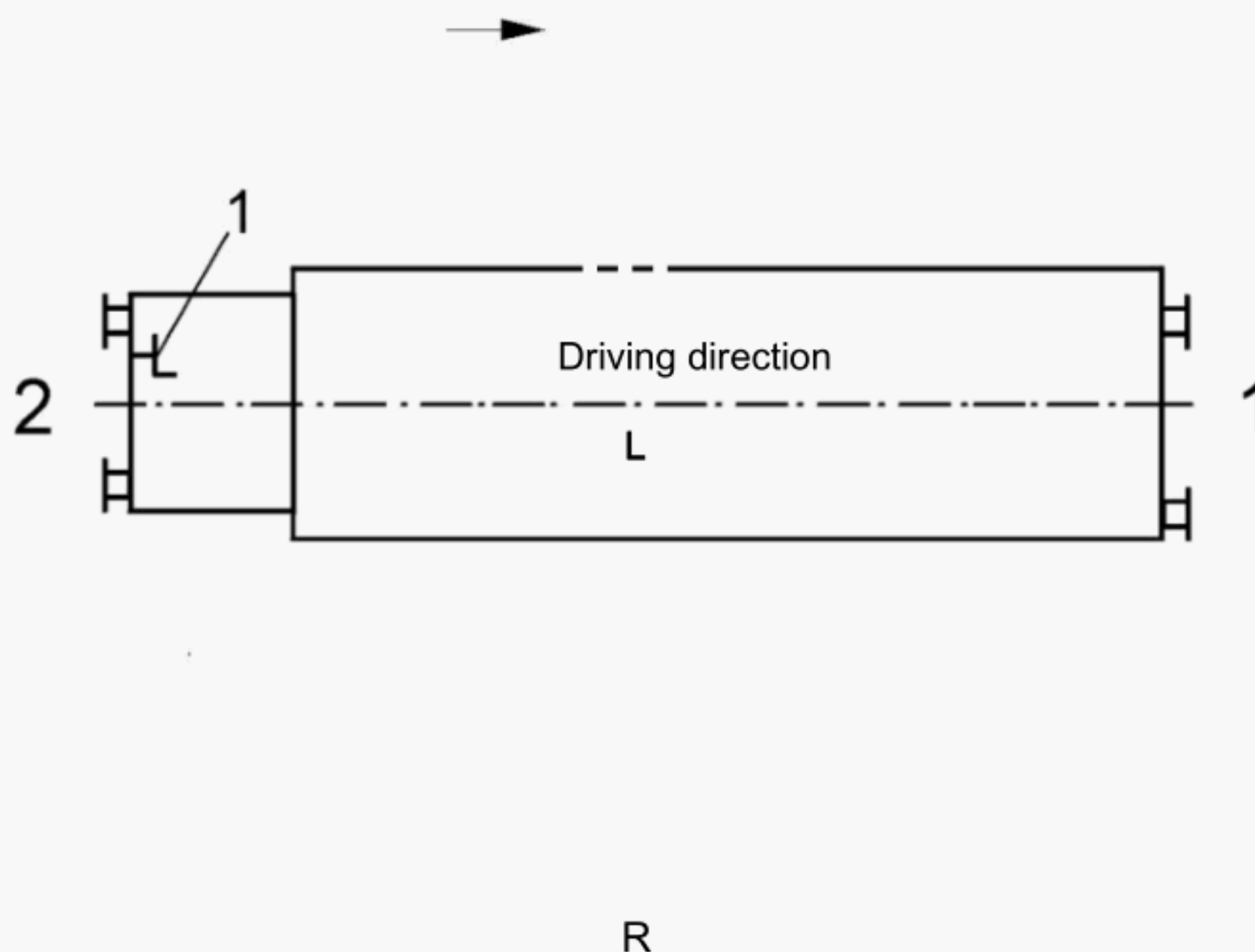
If none of the following additional requirements is applicable, the vehicle ends are specified by the design engineer.

5.3 Vehicle ends and sides

The front end of the vehicle in the driving direction and therefore shown on the right shall be designated end 1 and the other end 2.

The vehicle sides shall be designated L (left) and R (right). The right-hand and left-hand sides of the vehicle are determined as such when looking from vehicle end 2 towards vehicle end 1.

In the case of freight wagons with a hand brake, the hand brake is located at vehicle end 2 (see Figure 1) or towards.

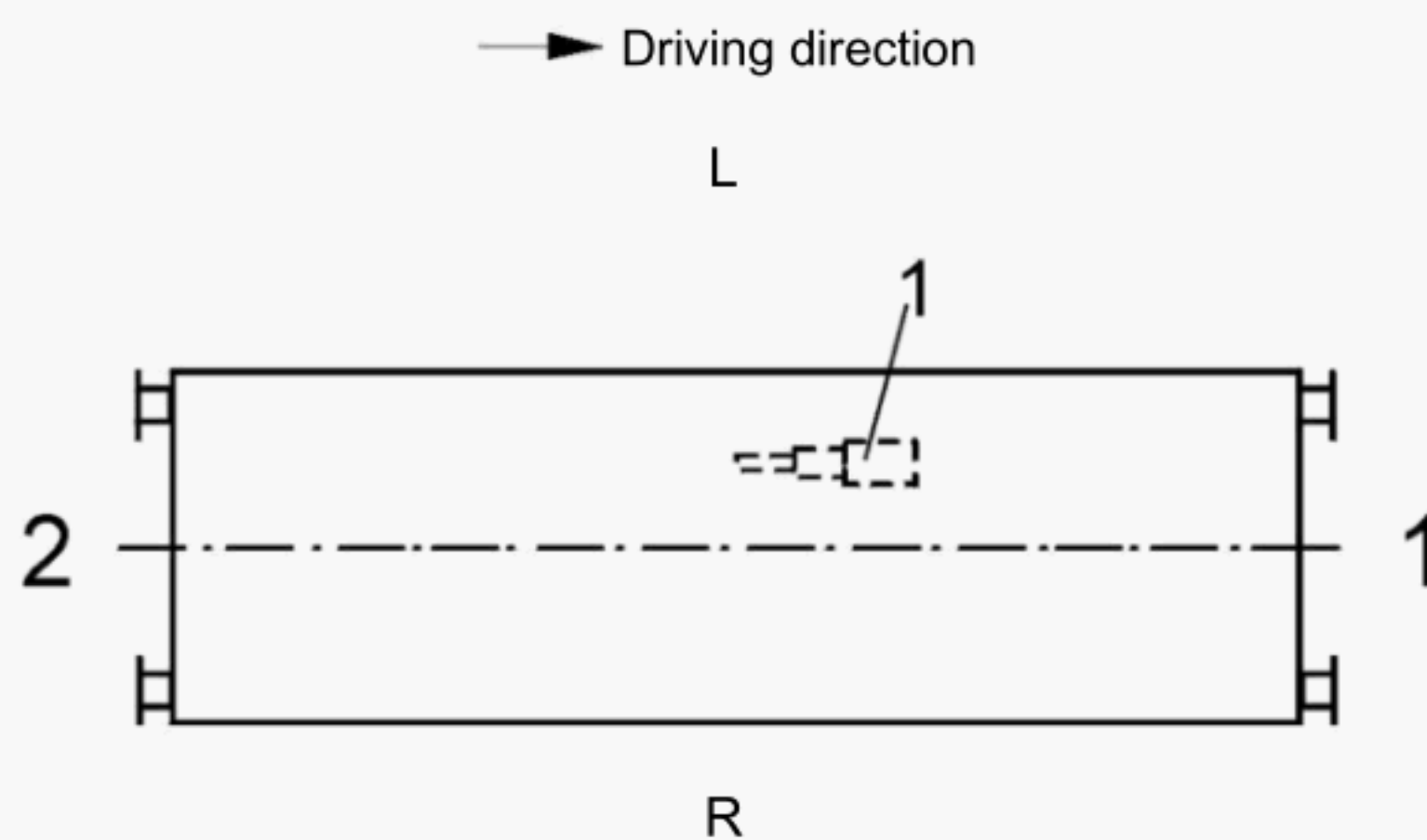


Key

1 Hand brake

Figure 1

In the case of freight wagons with an air brake, vehicle end 2 is on the piston rod side of the brake cylinder (see Figure 2).



Key

1 Brake cylinder

Figure 2

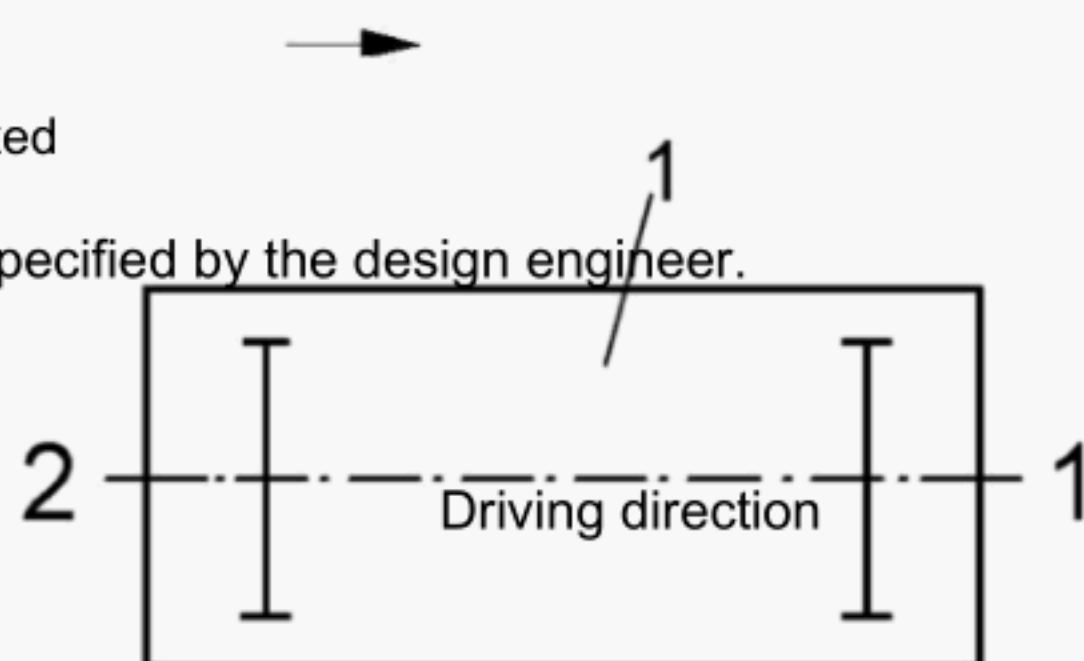
5.4 Bogie ends

The bogie end where the brake fixed point is located shall be numbered 1 and the other end 2 (see

Figure 3). In the case of bogie ends with no brake fixed points or with

symmetrically positioned fixed

points, the bogie ends are specified by the design engineer.



Key

1 Brake fixed point

Figure 3

Bibliography

- | | |
|--------------|---|
| EN 13775-2 | Railway applications - Measuring of new and modified freight wagons - Part 2: Freight wagons with bogies |
| EN 13775-3 | Railway applications - Measuring of new and modified freight wagons - Part 3: Freight wagons with 2 wheelsets |
| prEN 13775-4 | Railway applications - Measuring of new and modified freight wagons - Part 4: Bogies with 2 wheelsets |
| prEN 13775-5 | Railway applications - Measuring of new and modified freight wagons - Part 5: Bogies with 3 wheelsets |
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