SLOVENSKI STANDARD
oSIST prEN 15877-2:2025

01-marec-2025

Železniške naprave - Oznake na železniških vozilih - 2. del: Zunanje oznake na potniških vagonih, motornih garniturah, lokomotivah in težki tirni mehanizaciji za gradnjo in vzdrževanje

Railway applications - Markings of railway vehicles - Part 2: External markings on coaches, motive power units, locomotives and railbound construction and maintenance machines

Bahnanwendungen - Kennzeichnungen von Schienenfahrzeugen - Teil 2: Außenanschriften an Reisezugwagen, Triebfahrzeugeinheiten, Lokomotiven und schienengebundenen Bau- und Instandhaltungsmaschinen

Applications ferroviaires - Inscriptions pour véhicules ferroviaires - Partie 2: Inscriptions extérieures sur voitures voyageurs, éléments automoteurs, locomotives et engins de travaux

Ta slovenski standard je istoveten z: **prEN 15877-2**

ICS:

01.075	Simboli za znake	Character symbols
45.060.20	Železniški vagoni	Trailing stock

oSIST prEN 15877-2:2025 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 15877-2

January 2025

ICS 45.060.20

Will supersede EN 15877-2:2013

English Version

Railway applications - Markings of railway vehicles - Part 2: External markings on coaches, motive power units, locomotives and railbound construction and maintenance machines

Applications ferroviaires - Inscriptions pour véhicules ferroviaires - Partie 2: Inscriptions extérieures sur voitures voyageurs, éléments automoteurs, locomotives et engins de travaux

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. prEN 15877-2:2025 E

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European foreword

This document (prEN 15877-2:2025) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15877-2:2013.

prEN 15877-2:2024 includes the following significant technical changes with respect to EN 15877-2:2013:

— normative references have been updated

— document has been newly structured and editorially revised;

— markings have been revised and coloured;

— new markings have been added; Figure 1, Figures 5 to 7, Figure 20, Figure 21, Figure 23 b), Figure 26, Figure 28 c), Figure 28 d), Figure 29 b), Figure 30 b), Figure 41 b), Figure 42 b), Figure 42 c), Figure 44, Figures 47 to 50, Figure 52 a), Figure 52 b), Figure 53, Figure 59 a), Figure 59 b), Figure 60 c), Figure 65 b), Figures 66 to 67, Figure 68 b), Figure 69 c), Figure 74 to 79;

— new Table 2 and Table 3 have been added;

— unused markings have been deleted: former Figure 4, Figure 10, Figure 12, Figure 13, Figure 22 b), Figure 34, Figure 35, Figure 36, Figure 39, Figure 42, Figure 62, Figure 65;

— Annex ZA has been updated;

— Bibliography has been updated.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Introduction

This document describes standardized external markings for use on heavy rail coaches, motive power units, locomotives and railbound construction and maintenance machines. These markings are used to provide various items of information relating to the characteristics and intended use of rail vehicles in a clear and concise manner. Among those markings are safety signs used to alert equipment operators to hazards that can be encountered in the use or maintenance of the rail vehicles.

In addition to the markings shown in this document, there might be other markings and text applied to external markings used on rail vehicles, e.g. instructions and warnings concerning the use of equipment. Such additional markings are not in contravention of this document provided they do not interfere with or affect the markings in the document.

1 Scope

This document specifies the external markings on heavy rail vehicles including heavy rail railbound construction and maintenance machines but except freight wagons relating to their technical and operational characteristics.

This document specifies the characteristics of these markings, the requirements pertaining to their presentation, their shape and position on a rail vehicle and their meaning.

Some markings are accompanied with note(s) where appropriate.

Service markings relating to passenger information are not addressed by this document.

The document is applicable to all heavy rail coaches, motive power units, locomotives and railbound construction and maintenance machines operating within the European Union, the European Free Trade Association Member States and States which are member of OTIF (Intergovernmental Organization for International Carriage by Rail).

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 14198:2016+A2:2021, *Railway applications - Braking - Requirements for the brake system of trains hauled by locomotives*

EN 15179:2007, *Railway applications - Braking - Requirements for the brake system of coaches*

EN 15663:2017+A1:2018,[1] *Railway applications — Vehicle reference masses*

EN 15273-2:2013+A1:2016,[2] *Railway applications — Gauges — Part 2: Rolling Stock*

EN 16834:2019, *Railway applications - Braking - Brake performance*

EN 17343:2023, *Railway applications - General terms and definitions*

EN ISO 7010:2020, *Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010:2019, Corrected version 2020-06)*

ISO 3864-4:2011, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

[1] The document is currently being amended. Current stage: EN 15663:2017+A1:2018/FprA2:2024.
[2] The document is currently under revision. Current stage: prEN 15273-2:2023.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17343:2023 and the following apply.

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

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

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

3.1.1
decal
picture or design printed on special material for the purpose of adherence to a rail vehicle

3.1.2
light reflectance value
LRV
total quantity of visible light that is reflected by a surface at all wavelengths and directions when illuminated by a light source, or proportion of visible light reflected by a surface, weighted for the sensitivity to light of the human eye

Note 1 to entry: This is equivalent to CIE Tristimulus Y10 when viewed under Illuminant D65 and when measured with the appropriate specimen and measurement geometry. Further details of the CIE Tristimulus values are given in CIE 15:2004 and further details of the measurement of reflection are given in CIE 130:1998.

3.1.3
contrast
K
perception of a difference visually between one surface or element of a rail vehicle and another by reference to their light reflectance values (LRV)

Note 1 to entry: When applying colour to two adjacent surfaces, to provide sufficient contrast, the contrast between the colours will be determined by the light reflectance value.

Note 2 to entry: For the purposes of this standard, “contrast” will be assessed by the diffused light reflectance value.

Note 3 to entry: Contrast by the diffused light reflectance value’ will mean contrast of surfaces described in the following formula:

$$K = \frac{(L_0 - L_h)}{L_0 + L_h}$$

where

K is the contrast;

L_0 is the diffused light reflectance value of the object;

L_h is the diffused light reflectance value of the background or adjacent surface.

3.1.4
marking
lettering or symbols applied to a rail vehicle by means of decals, hand painting or by another agreed method with the purpose of providing information concerning the rail vehicle retro-reflecting material

3.1.5
stencil
template for the required lettering

3.1.6
motive power unit
self-propelled unit capable of carrying passengers and/or luggage/mail

3.2 Abbreviated terms

Term	Definition
ATMF	COTIF (Admission procedures), Appendix G
CIE	International Commission on Illumination, Vienna, Austria. http://www.cie.co.at
COTIF	Convention concerning International Carriage by Rail (COTIF) in the version of the Protocol of Modification of 3 June 1999
EBO	Emergency Brake Override
ECM	Entity in Charge of Maintenance
ep	Electropneumatic brake
ERA	European Railway Agency
EVN	European Vehicle Number
MND	Design mass under normal payload in accordance with EN 15663:2017+A1:2018**Error! Bookmark not defined.**
MVO	Operational mass in working order in accordance with EN 15663:2017+A1:2018**Error! Bookmark not defined.**
OTIF	Intergovernmental Organization for International Carriage by Rail
PAS	Passenger Alarm System
RAL	Colour standardization system of the German Institute for Quality Assurance and Certification
RIC	Agreement governing the exchange and use of coaches in international traffic (*Regolamento Internationale delle Carrozze*)
TSI	Technical Specification for Interoperability: the specifications by which each subsystem or part subsystem is covered in order to meet the essential requirements and ensure the interoperability of the trans-European rail system
TEN	Trans European Network
UIC	International Union of Railways
VKM	Vehicle Keeper Marking

4 Markings

4.1 General principles

4.1.1 The markings and the content of information are as given in 4.4.

Where a marking is specified in this document other markings indicating the same function/facility shall not be applied.

4.1.2 A marking shall be located on the rail vehicle at a position easily visible by staff standing and presented in a way clearly understandable to persons concerned. If the marking is intended to be read by a person standing at ground level, it should not be located at a level higher than 2 000 mm above the running surface.

For the assessment of the location criteria, the ground level should not be lower than 200 mm below the running surface. In accordance with anthropometric data, the eye level of the reading person should not be less than 1 500 mm

The visibility shall also be ensured if the marking needs to be read from a position other than ground level or if it is placed on a non-vertical surface. Hazard markings, e.g. the warning marking for live catenary, shall be located in such a position that they can be seen before the hazard zone is actually reached.

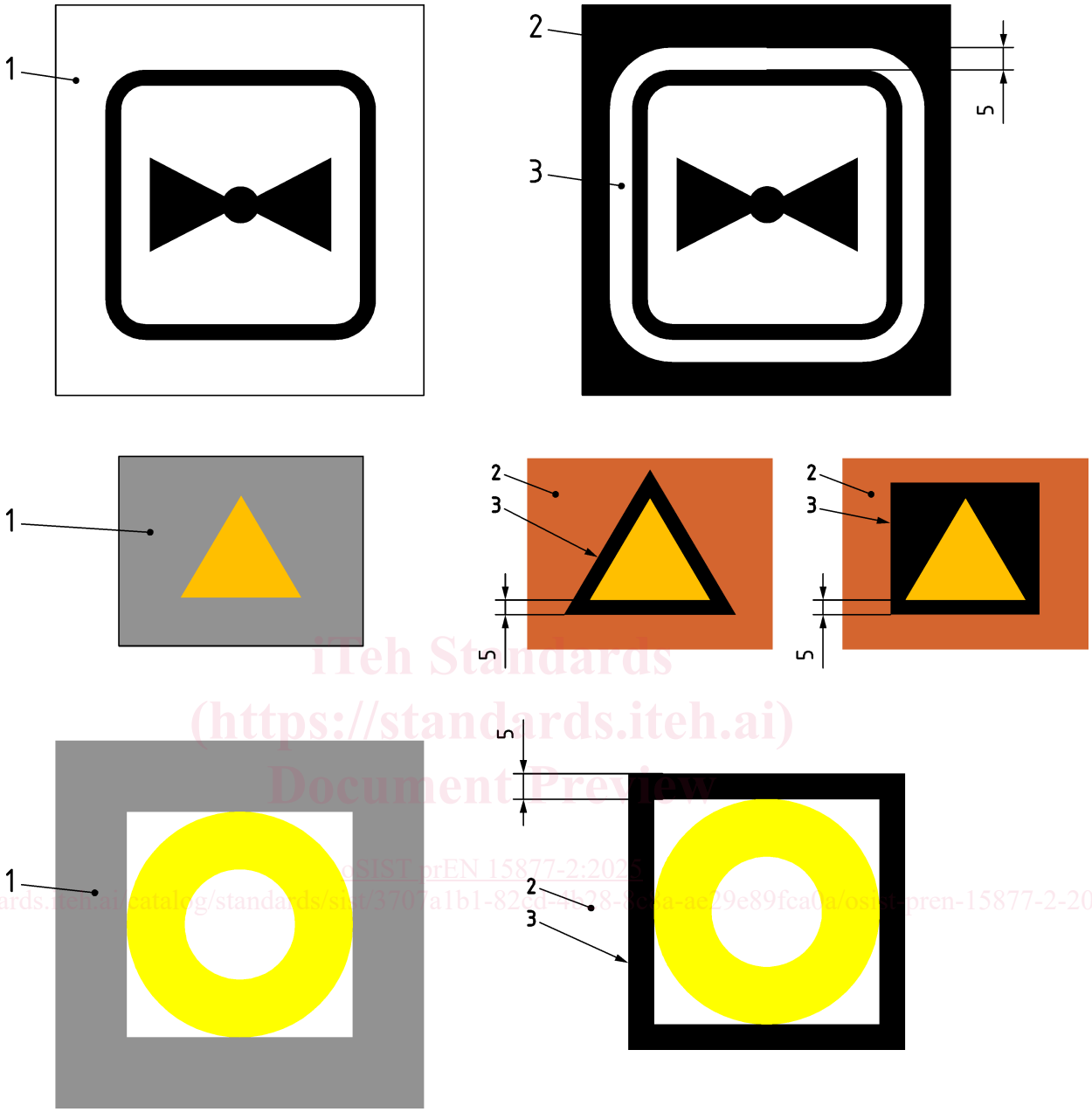
4.1.3 Advertising, designs or other text or pictures not relating to markings applied to a rail vehicle shall not affect the visibility and the clear and unambiguous understanding of the marking. Such advertising or markings shall not encroach within 100 mm of the markings defined in this document.

In this case, a border of minimum 100 mm shall be placed around each marking or composition of markings; these borders shall have a “neutral” colour or be the colour which accentuates the marking.

For all required markings, where there is not sufficient contrast between marking and background, the marking shall have a contrasting frame of at least 5 mm.

Figure 1 shows examples of markings that due to sufficient contrast can stand alone and others which need a frame to stick out from their background.

Dimensions in millimetres



a) Background with sufficient contrast

b) Markings with contrasting frame due to background

Key

1 background with sufficient contrast

2 background without sufficient contrast

3 contrasting frame (≥5 mm)

Figure 1 — Examples of markings with/without sufficient background contrast

4.1.4 Unless otherwise indicated in the figures, the markings shall be placed on both sides of the rail vehicle.

4.1.5 A marking shall ensure durable, non-degraded marking for a period of at least 6 years under a temperature range of −40 °C to +90 °C. It shall be weather-resistant and resistant to cleaning agents, high pressure water or air cleaning and cleaning machines with brushes.

4.1.6 Markings shall use Latin characters and Arabic numerals. The font shall be non-italic, sans serif and of a type such as Univers 67, Helvetica or Arial.

4.1.7 The distances between value and unit shall be clearly separated by space.

NOTE See EN ISO 80000-1:2022, e.g. 7.1.4.

4.1.8 The dimensions indicated in this document may have a tolerance of plus or minus 10 % when the marking is hand produced.

4.2 Colour

4.2.1 Colours used shall correspond to ISO 3864-4:2011 (see Annex A of this document).

4.2.2 Unless otherwise indicated in the figures of this document, the colours need not be made of retro-reflecting material.

4.2.3 The luminance contrast *k* shall correspond to ISO 3864-4:2011.

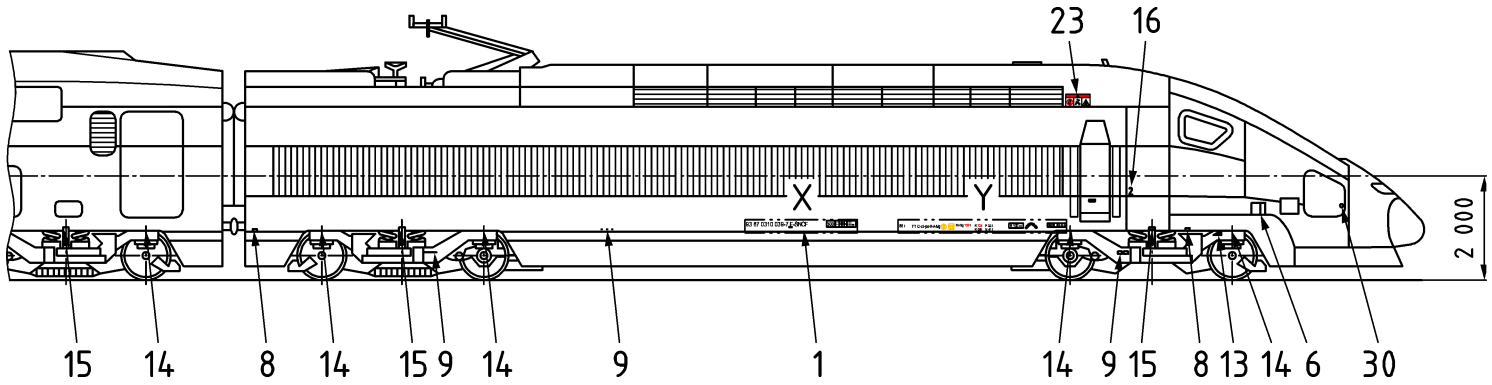
4.2.4 If there is no extra colour specification (e.g. yellow, green) indicated with the specification of a marking, the colour of the informative part (the symbol, letters/numbers, borders and lines) shall be black on a light uniform background or white on a dark background. The background for decals, stencils and painted markings may be transparent and thereby represented by the colour of the material on which the marking is placed, i.e. the bodyside of the rail vehicle. In any case, when a part of the marking is indicated to be the rail vehicle colour background, the requirement to the luminance contrast shall be met.

4.3 Positioning

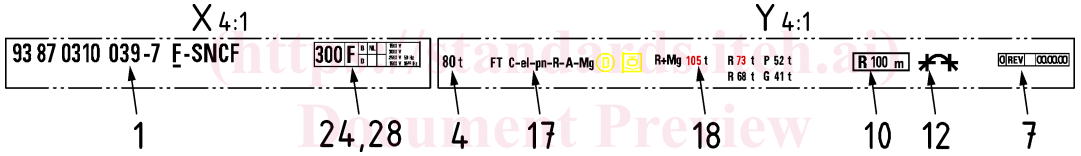
Markings should be positioned in accordance with Figure 2, Figure 3 and Figure 4. The list of markings is contained in Table 1 and their position and meaning described in 4.4. Not all markings can be accommodated in the figures. If no specific position for a marking is prescribed in 4.5, the following general rules shall be followed.

A marking indicating a lever, a button, a nozzle, an indicator, hidden equipment or a point for action (e.g. a lifting point) shall be located next to that item (normally above, beneath or on the cover concealing the item) and may not lead to any misunderstanding or confusion.

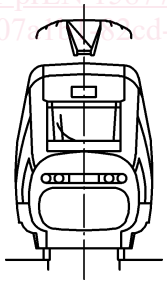
Dimensions in millimetres



a) Side view



b) Marking details "X" and "Y"



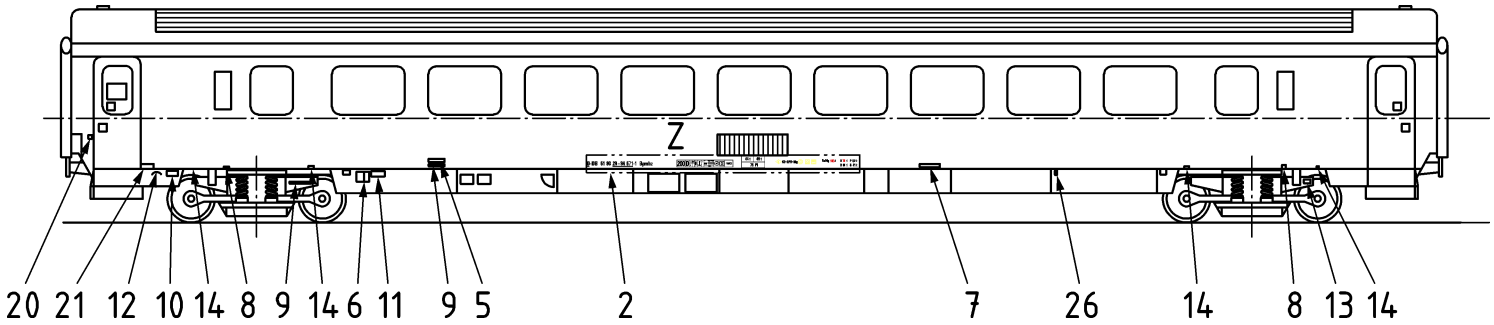
c) Front view

Key

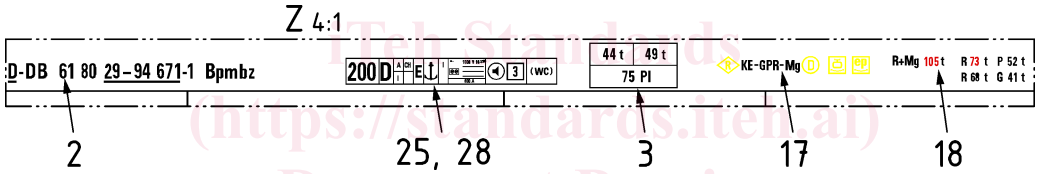
See Table 1.

Figure 2 — Positioning of markings for leading/trailing vehicles of fixed formations or motive power units

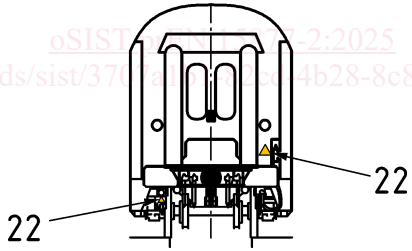
Dimensions in millimetres



a) Side view



b) Marking detail "Z"



c) Front view

Key

See Table 1.

Figure 3 — Positioning of markings for coaches