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Railway applications – Markings of railway vehicles – Part 2: External markings on coaches, motive power units, locomotives and on track machines

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EUROPEAN STANDARD

EN 15877-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2013

ICS 45.060.20

English Version

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

Applications ferroviaires - Inscriptions pour véhicules
ferroviaires - Partie 2: Inscriptions extérieures pour voitures,
engins moteur, locomotives et engins de pose de voie

Bahnanwendungen - Kennzeichnungen von
Schienenfahrzeugen - Teil 2: Außenanschriften an
Personenfahrzeugen, Triebwagen, Lokomotiven und
Gleisbaumaschinen

This European Standard was approved by CEN on 24 August 2013.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 15877-2:2013) 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of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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.

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

The series of European Standards, *Railway applications — Marking on railway vehicles*, consists of the following parts:

- *Part 1: Freight wagons;*
- *Part 2: External markings on coaches, motive power units, locomotives and on track machines.*

Some markings in Part 1 may also be used for on track machines as appropriate.

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

Introduction

This standard has been developed to provide a European standard for external markings used on railway vehicles. These markings are used to provide various items of information to railway staff relating to the technical and operational characteristics and intended use of vehicles in a clear and concise manner. Among those markings are safety markings used to alert equipment operators to hazards that may be encountered in the use or maintenance of the vehicles and markings relevant to emergency and rescue.

The standard is applicable to coaches, motive power units, locomotives and on track machines operating within the European Union, the European Free Trade Association Member States and States which are member of OTIF (Intergovernmental Organisation for International Carriage by Rail) and it satisfies the legal requirements within these institutions.

The standard is consistent with:

- a) the Technical Specification for Interoperability Subsystem:
 - 1) Rolling Stock Scope for Conventional and High Speed Locomotives and Passenger rolling stock;
 - 2) Traffic Operation and Management;
- b) the Convention Concerning International Carriage by Rail (COTIF) of 9th May 1980 in the Version of the Protocol of Modification of 3rd June 1999 which entered into force on 1st July 2006.

It therefore supports the essential requirements of:

- Directive 2008/57/EC on the Interoperability of the Railway System;
- COTIF 1999, Appendix F, Annex 1-A.

It is intended to be used by all parties concerned with the marking of railway vehicles.

1 Scope

This part of the European Standard identifies the information required or recommended to be marked on coaches, motive power units, locomotives and On Track Machines, relating to their technical and operational characteristics. It defines the characteristics of these markings, the requirements pertaining to their presentation, their shape and position on a vehicle and their meaning. Some markings are accompanied with note(s) where appropriate.

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

The provisions of this standard cover external markings on vehicles as required by:

- the TSIs;
- the COTIF regulations.

In addition to the markings shown in this European Standard, there might be other markings and text applied to these vehicles, e.g. instructions and warnings concerning the use of equipment specific to the vehicle. Such additional markings are not in contravention of this standard provided they do not interfere with, create ambiguity or in any other way affect the markings in this standard.

This European Standard is applicable to all railway motive power units, coaches, baggage and mail vans and car carrying coaches intended to be included in passenger trains, locomotives and On Track Machines operating within and between Member States of the European Union, the European Economic Area Member States and States which are member of OTIF (Intergovernmental Organisation for International Carriage by Rail) and it satisfies the legal requirements within these institutions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15663, *Railway applications — Definition of vehicle reference masses*

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

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1

decal

picture or design printed on special material for the purpose of adherence to a 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 railway 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.

For the purposes of this standard, "contrast" will be assessed by the diffused light reflectance value.

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 vehicle by means of decals, hand painting or by another agreed method with the purpose of providing information concerning the vehicle

3.1.5 retro-reflecting material

material which reflects radiation (light) in a direction close to the opposite of the direction from which it came

3.1.6 stencil

template for the required lettering

3.1.7 vehicle

in this standard, smallest part in a train (a single vehicle) which features an individual bodyshell lying on its own sets of bogies or wheels or sharing them with adjacent vehicles

3.1.8 railway vehicle

vehicle suitable for circulation on its own wheels on railway lines with or without traction

3.1.9 motive power unit

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

3.1.10 train

operational formation consisting of one or more vehicles