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Technical drawings - Railway applications - Part 2: Parts lists

Technische Zeichnungen - Bahnanwendungen - Teil 2: Stücklisten

Dessins techniques - Applications ferroviaires - Partie 2: Listes de pieces

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Ta slovenski standard je istoveten z: EN 15016-2:2004

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45.020	Železniška tehnika na splošno	Railway engineering in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15016-2

June 2004

ICS 01.100.01

English version

Technical drawings - Railway applications - Part 2: Parts lists

Dessins techniques - Applications ferroviaires - Partie 2:
Listes de pièces

Technische Zeichnungen - Bahnanwendungen - Teil 2:
Stücklisten

This European Standard was approved by CEN on 9 January 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 15016-2:2004) 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of an identical text or by endorsement, at the latest by December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.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 document has been prepared under a mandate (M024) given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This document has been prepared under Mode 4 co-operation with CENELEC TC9X. In the event of an amendment being required to this standard, the co-op TC will be consulted before proceeding to amend this document.

Particular considerations were made to standardize the computerised transfer of the content of the documents, its output on conventional information carrier and its reproduction without loss of quality. Remarks in international standards with regard to document handling are respected and supported by this standard and if necessary adopted or completed to the well-established procedures in the European railway business.

This European Standard "Technical drawings — Railway applications" consists of the following parts:

- EN 15016-1: General principles
- EN 15016-2: Parts lists
- EN 15016-3: Handling of modifications of technical documents
- prEN ISO 21267-4: Data exchange

The annexes A and B are normative. Annex C is 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 United Kingdom.

EN 15016-2:2004 (E)**Introduction**

In railway business, the customer very often requires, as part of a contract, technical documents in a certain form. In order to support co-operation and effective exchange of information between customers, suppliers and partners, it is necessary to have the document requirements precisely defined.

This European Standard refers to EN, ISO or IEC standards dealing with technical drawings. In cases where ISO or IEC standards are not sufficiently precise, this standard gives specific details. These additions to EN, ISO and IEC standards facilitate the exploitation and the administration of the drawings.

These requirements have been drawn up in order to accommodate:

- the large variety of users;
- ease of transfer of documents;
- any specific series of documentation related to the railway material they define.

Special consideration has been given to those producing drawings by computer or microcopying and their reproduction without loss of quality.

NOTE The range of documents covers documents such as specifications, conditions for acceptance or further technical specifications which may not be graphically represented. This is meant to highlight the difference between "graphical representation" and "verbal description".

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1 Scope

This European Standard specifies the requirements for the preparation and reproduction of design parts lists for railway applications.

This European Standard specifies the design parts list and describes the basic principles, their structure and the minimum requirements of a design parts list.

The European Standard applies throughout the total life span of the parts list. This standard applies to all the railway organisations and partners concerned with the design parts list, and to suppliers preparing parts list on behalf of network users.

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 15016-1, *Technical drawings — Railway applications — Part 1: General principles*.

EN ISO 216:2001, *Writing paper and certain classes of printed matter — Trimmed sizes — A and B series (ISO 216:1975)*.

EN 61355, *Classification and designation of documents for plants, systems and equipment (IEC 61355:1997)*.

EN ISO 10209-2:1996, *Technical product documentation — Vocabulary — Part 2: Terms relating to projection methods (ISO 10209-2:1994)*.

ISO 639, *Codes for the representation of languages — Part 1: Alpha-2 code*.

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*.

ISO 4882, *Office machines and data processing equipment — Line spacings and character spacings*.

ISO 10209-1:1992, *Technical product documentation — Vocabulary — Part 1: Terms relating to technical drawings: General and types of drawings*.

ISO 16016, *Technical product documentation — Protection notices for restricting the use of documents and products*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in ISO 10209-1:1992 and EN ISO 10209-2:1996 and the following apply.

NOTE In contrast to the use of the term 'item list' in ISO 10209-1:1992, 3.12, the term 'parts list' is used in this series of standards in accordance with common practise.

The parts list is the main document to describe an object, independent of the hierarchy in which the object is situated in the product structure.

There is no difference between an assembly and detail parts list.

3.1

parts list

formally built-up list for an object, complete as regards to specific purpose and containing all the necessary documents and articles appertaining thereto, giving their name, item number, quantity and unit. Only those summaries are designated in the parts lists which relate to the quantity 1 of an object

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3.2

design parts list

created in the design phase where the final product is defined

NOTE It defines the design and is neutral with respect to workshop.

4 Characteristic features of parts lists

4.1 General

A parts list can be presented as follows:

- as a separate document without drawing;
- as a separate document with relation to a drawing (separate parts list);
- entered on a drawing.

Any sheet of parts lists shall bear an identification number. When more sheets together form an entity, it shall be clearly indicated on the first sheet which and how many sheets form the entity.

All pages of the parts list should correspond with the specimen shown in annex B.

Requirements for copying and scanning are to be defined.

4.2 Base

Parts list as a separate document shall preferably be printed on white paper with a minimum weight of 70 g/m². In case of entering parts lists on drawing sheets, see EN 15016-1.

4.3 Size

Separate parts lists shall be to A4 size in accordance with EN ISO 216:2001, series A.

4.4 Border

The border is shown in annex B.

4.5 Centring marks

Reference marks for centring required for the adjustment of the position of the parts list on the setting plane of the photographic copying device, appear in the margin at the locations defined in annex B.

4.6 Characteristics of lines and entries

4.6.1 Optical density

All lines and entries including those added during revision should have a contrast of at least 0,7 with respect to base according to EN ISO 6428.

4.6.2 Line wideness of separate parts lists

Printed parts lists shall fulfil the same requirements as parts lists on drawings for microcopying and scanning suitability. For fulfilling these requirements, it is recommended to use line wideness according to Table 1.

Table 1 — Line widenesses

	Wideness (mm)
Borderlines	0,7
Main lines	0,35
Other lines	0,25

4.6.3 Characteristics of lettering

Separate parts lists shall be printed with lettering having height between 2,3 mm and 2,6 mm and a width of 2,5 mm to ensure microcopying and scanning legibility. The line and character spacing shall be in accordance with ISO 4882.

Entries in parts list on drawings shall be in accordance with EN 15016-1.

5 Specification

5.1 Title block

A title block, intended for taking the necessary headings for identification and use, shall appear on all parts lists.

It is recommended to use the same title block format on all pages of the parts list. It is permissible to use a reduced version on the pages following page 1; this block shall as a minimum have the same identification zone as shown in annex A.

The mandatory requirements of the title block are defined in annex A.

5.2 Columns and lines

The parts list consists of eight columns for the entry of various data describing the items required for analysis and interpretation of the drawing.

The columns are separated from each other by a continuous line of at least 0,35 mm wideness.

The layout of separate parts list is given in annex B.

5.3 Data fields

5.3.1 General

The data fields of the parts lists are given in Table 2 (see also annex B).

Table 2 — Data fields

Column	Column text	Character type	Text alignment	Language dependency
1	Item number	alphanumeric	right	No
2	Quantity, no. of pieces	alphanumeric	right	No
3	Unit	alphanumeric	centre	No
4	Title, designation, name of item	alphanumeric	left	Yes
5	Item number, standard code designation	alphanumeric	left	No
6	Material/ technical data	alphanumeric	left	Yes
7	Mass/unit	numerical	centre	No
8	Remark	alphanumeric	left	Yes

5.3.2 Item reference

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Identical parts shown in the same assembly should have the same item reference.

The item reference is a number which is added as a serial characteristic to objects listed in parts lists and shown on drawings. The reference number shall be rising graded.

If a revision causes an item to be removed from a parts list, the remaining items retain their numbers, thus reducing the need to revise the drawing and other associated documentation.

The field "Item number" may be left empty in the parts list section for a single part.

5.3.3 Quantity, number of pieces

The column shows the total number of that particular item necessary for one complete assembly (see ISO 7573).

If reference to a document shall be given in this column, a capital cross (X) shall be entered (see annex C).

When the quantity needed cannot be specified at the design stage or if it is not necessary to specify, the capital letter N (meaning: not defined) shall be given in the field "Quantity".

5.3.4 Unit

Refers to the unit of measure for the quantity. The SI units according to ISO 1000 including their multiples shall be used.

5.3.5 Title, designation, name of item

The identification of the specified item or document, wherever possible, shall be the same as the description given on the main document for the item. When referring to standards, the standardised designation for the relevant items shall be used.

5.3.6 Item number, standard code designation

Contains the identification number of the item. In case the item has not a specified parts list identification number, the field should contain the following:

- drawing identification number of the specified item; or
- parts list identification number; or
- document identification number, e.g. references to standards, working documents, etc.;
- standard components which are defined in international or national standards shall use designations as defined in those standards;
- when specifying raw material, a reference should be given to a standard and to the dimensions of the item.

5.3.7 Material, technical data

This field contains informative data for an item identified with its identification number in the field "Item number, standard code designation". The purpose is to improve the understanding of which material is specified. Where there is no identification number, the material quality is specified in this field. Wherever possible, material designations according to international (exceptionally to national) standards shall be used. If there are no appropriate standards, designations according to established practice or well-known trade names shall be used.

5.3.8 Mass / unit

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In this field, the finished mass per item is to be indicated in kg per unit. Indication of weight is not necessary for items the weight of which is already listed in ancillary parts lists. Decimal figures may be written with a comma indicating the decimal marker and indicated to a maximum number of three decimal places.

5.3.9 Remark

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This field is for any additional text information.

For items represented in circuit diagrams, the item reference designation (apparatus) should be entered in this field.

If there is not sufficient space for explanatory remarks, an asterisk (*) or number is to be entered in this field and the remark is to be detailed over the entire width of the parts list block.

5.3.10 Copyright and exploitation right

The designation shall be in accordance with ISO 16016. Exploitation rights shall be declared. The name of the legal owner or the creator of the parts list shall be written in the title block. Information concerning the copyright can be added outside the parts list frame (see annexes B and C).

Information concerning exploitation right is given in the parts list field.

5.3.11 Intellectual property

The designation shall be in accordance with ISO 16016. Property rights should be positioned at an appropriate place outside the title block and/or in the parts list.