



BSI Standards Publication

Railway applications - Marking on railway vehicles

Part 1: Freight wagons

National foreword

This British Standard is the UK implementation of EN 15877-1:2012+A1:2018. It supersedes BS EN 15877-1:2012, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by A1 A1.

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INS, RST and ENE speed conversions	
km/h	mph
5	3
10	5
20	10
30	20
80	50
160	100
190	120

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English Version

Railway applications - Marking on railway vehicles - Part 1: Freight wagons

Applications ferroviaires - Inscriptions pour véhicules
ferroviaires - Partie 1: Wagons pour le fret

Bahnanwendungen - Kennzeichnung von
Schienenfahrzeugen - Teil 1: Güterwagen

This European Standard was approved by CEN on 9 March 2012 and includes Amendment 1 approved by CEN on 15 July 2018.

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European foreword

This document (EN 15877-1:2012+A1:2018) 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

This document includes Amendment 1 approved by CEN on 2018-07-15.

This document supersedes EN 15877-1:2012.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

A1 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 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. A1

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European standard describes standardised markings for use on railway vehicles. These markings are used to provide various items of information relating to the characteristics and intended use of vehicles in a clear and concise manner. Among those markings are safety signs used to alert equipment operators to hazards that may be encountered in the use or maintenance of the vehicles.

The standard consists of two parts:

- *Part 1: Freight wagons;*
- *Part 2: External Markings on Coaches, Motive Power Units, Locomotives and On Track Machines.*

The provisions of this Part 1 of the standard cover:

- the markings required by the Conventional Rail Rolling Stock Freight Wagon TSI which mandates the minimum set of markings relevant to its design and operation to be carried by any wagon which is certified as TSI and/or UTP compliant;
- the markings, in addition to those which are TSI/UTP mandatory, which are relevant to its design and operation as required by industry.

In addition to the markings shown in this standard, there might be other industrial markings and text applied to a freight wagon, e.g. instructions and warnings concerning the use of equipment. Such additional markings are not in contravention of this standard provided they do not interfere with or affect the markings in the standard.

The standard is applicable to all railway freight wagons 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:



- the Technical Specification for Interoperability Subsystem: Rolling Stock Scope: Freight Wagons as published in the Official Journal L 104, 12.4.2013, p.1, and its amendments;
- the Technical Specification for Interoperability Subsystem: Operation and Traffic Management published in the Official Journal L 165, 30.06.2015, p.1;
- the Convention Concerning International Carriage by Rail (COTIF) as amended by the Vilnius Protocol in force from 1.7.2006, applicable from 01.01.2011

It therefore supports the essential requirements of:

- Directive 2008/57/EC on the interoperability of the rail system within the Community;
- COTIF UTP GEN-A: General provisions – Essential requirements (A 94-01A/1.2009) in force since 1st August 2009.

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

1 Scope

This European Standard identifies the information required to be marked on freight wagons, or parts of freight wagons, relating to their technical, operational and maintenance 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 a note(s) where appropriate.

Tank barrel manufacturers' design criteria, test and product specification plates have not been considered in this European Standard as they are specified in EN 12561-1:2011, Railway applications — Tank wagons — Part 1: Identification plates for tank wagons for the carriage of dangerous goods.

Dangerous Goods markings have not been considered in this European Standard where fully specified in RID (dimensions, colour, location and form). Where markings are not fully specified in RID they are included in this standard

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 12561-1, *Railway applications — Tank wagons — Part 1: Identification plates for tank wagons for the carriage of dangerous goods*

EN 15528, *Railway applications — Line categories for managing the interface between load limits of vehicles and infrastructure*

prEN 15877-2, *Railway applications — Marking on railway vehicles — Part 2: External markings on coaches, motives power units, locomotives and on track machines*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

CIE 015-2004, *Colorimetry* — 3rd edition

CIE 054.2-2001, *Retroreflection: Definition and Measurement*

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

buffer stroke

measured distance difference between an uncompressed and a fully compressed buffer

3.1.2

decal

a picture or design printed on specially prepared plastic sheeting for the purpose of adherence to a freight wagon

3.1.3

luminance contrast, k

luminance of colour L_1 divided by the luminance of colour L_2 where L_1 is greater than L_2

$$k = \frac{L_1}{L_2}$$

[SOURCE: IEC 60050-845:1987, 845-04-69]"

3.1.4

luminance factor, β

ratio of the luminance of the surface element in a given direction to that of a perfect reflecting or transmitting diffuser identically illuminated

3.1.5

marking

lettering or symbols applied to a freight wagon by means of decals, hand painting or by another agreed method, with the purpose of providing information concerning the wagon

3.1.6

paint

liquid mixture, usually of a solid pigment in a liquid medium such as oil or water

3.1.7

railway vehicle

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

3.1.8

stencil

template for the required lettering

3.1.9

tare

weight of a railway vehicle without fuel or load

Note 1 to entry: To follow common practice, "weight" is used throughout this standard as kilogramme or tonne.

3.1.10

vehicle

vehicle is the smallest part in a train (a single vehicle)

Note 1 to entry: It features an individual body shell lying on its own sets of bogies or wheels or sharing them with adjacent vehicles

3.1.11

wagon

railway vehicle without traction designed to carry freight or goods

3.2 Abbreviations

Term	Definition
AC	Alternate current
ATP	Automatic Train Protection

CER	Community of European Railways and Infrastructures Companies.
CIE	International Commission on Illumination, Vienna, Austria. http://www.cie.co.at/cie/
COTIF	Convention concerning International Carriage by Rail (COTIF) of 9 May 1980 in the version of the Protocol of Modification of 3 June 1999
CR	Conventional Rail System
DC	Direct current
EFTA	European Free Trade Association
ERA	European Railway Agency
EU	European Union
EVN	European Vehicle Number - Article 32 of the 2008/57/EC
OSJD	Warsaw based Organisation for Collaboration between Railways
OTIF	Intergovernmental Organisation for International Carriage by Rail
PPV/PPW	OSJD Rules for International Operation of Wagons and Coaches of 01/01/1956 updated 01/01/1997
RAL	Colour standardisation system of the German Institute for Quality Assurance and Certification
RID	RID means the Regulations concerning the International Carriage of Dangerous Goods (Appendix C to COTIF 1999) (RID is also Annex to EU Council Directive 2008/68/EC)
RIV	"RIV" means the agreements between Railway Undertakings governing the exchange and use of wagons between railway undertakings (version 2000)
RST	Rolling stock
RU	Railway Undertaking
TSI	Technical Specifications 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
UIP	International Union of Private Wagon Owners.
UIRR	International Union of Combined Road-Rail Transport Companies.
UNIFE	Union of the European Railway Industries.
UITP	International Association of Public Transport.
UTP	Uniform Technical Prescriptions according to Appendix F (APTU) of COTIF1999
VKM	Vehicle Keeper Marking
WAG TSI	Freight Wagons TSI

4 Markings

4.1 General principles

4.1.1 The markings and the content of information are as given in 4.5.

4.1.2 A marking shall be located on the wagon at a position easily visible by staff standing at ground level 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 rail surface¹⁾. The visibility shall also be ensured if the marking needs to be read from a

¹⁾ For the assessment of the location criteria, the ground level should not to be lower than 200 mm below the rail surface; in accordance with anthropometric data, the eye level of the reading person should not to be less than 1500 mm

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

The location of a marking shall be such that correctly positioned tarpaulins, which may be used to sheet the wagon, do not obscure the marking.

4.1.3 Advertising, designs or other text or pictures not relating to the markings applied to a wagon shall not affect the visibility and the clear and unambiguous understanding of the marking. Such items may only be placed on the side walls or on the tank shell. 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 same colour which accentuates the marking. The requirement for a 100 mm minimum width shall also apply if the colour of the material on which the marking is placed does not provide enough contrast to the marking; for example, the markings in 4.5.13 which have a yellow outer part will need a border if they are placed on a wagon that is painted yellow.

4.1.4 Graffiti which affects the visibility or understanding of the markings shall be removed.

4.1.5 Unless otherwise indicated in the diagrams, the markings shall be placed on both sides of the wagon.

4.1.6 A marking shall ensure durable, non-degraded marking for a period of at least 6 years under a temperature range of -40 to +90 °C. If a marking is defective or illegible, it shall be restored. It shall be weather-resistant and resistant to cleaning agents, high pressure water or air cleaning and cleaning machines with brushes. If a marking has faded e.g. due to sunlight, it shall be restored.

4.1.7 Alphanumeric characters used on markings shall use Latin characters and Arabic numerals. The font to be used shall be non-italic, sans serif and of a type such as Univers 67, Helvetica, Arial.

4.1.8 The dimensions indicated in this document may have a tolerance of plus or minus 10 % when hand produced. For better readability, it is recommended to use industrial foils or stencils for hand produced markings.

4.1.9 When employing the use of moveable panels it shall be ensured that the required panel is suitably secured so as not to be inadvertently changed or get lost.

4.1.10 The inscription panel may be replaced by applying the requisite markings directly to the sidewall or tank.

4.2 Colour

4.2.1 Colours used shall conform to the colour areas indicated in the chromaticity diagram (Figure 1). Table 1 shows the coordinates in the chromaticity diagram of the four corners which, connected by straight lines, indicates the boundaries for the allowed variation of the colour. Colours that do not meet these chromaticity coordinates shall not be used. The colours indicated in the diagrams are defined according to ISO 3864-1.

4.2.2 Unless otherwise indicated in the diagrams, the colours need not be made of retro reflecting material.

above ground; and the reading distance should be minimum 700 mm from the side of the wagon. Tilting the head back, it should be possible to look up at an angle of 45 degrees above horizontal; a calculation using these parameters gives the limitation 2000 mm.

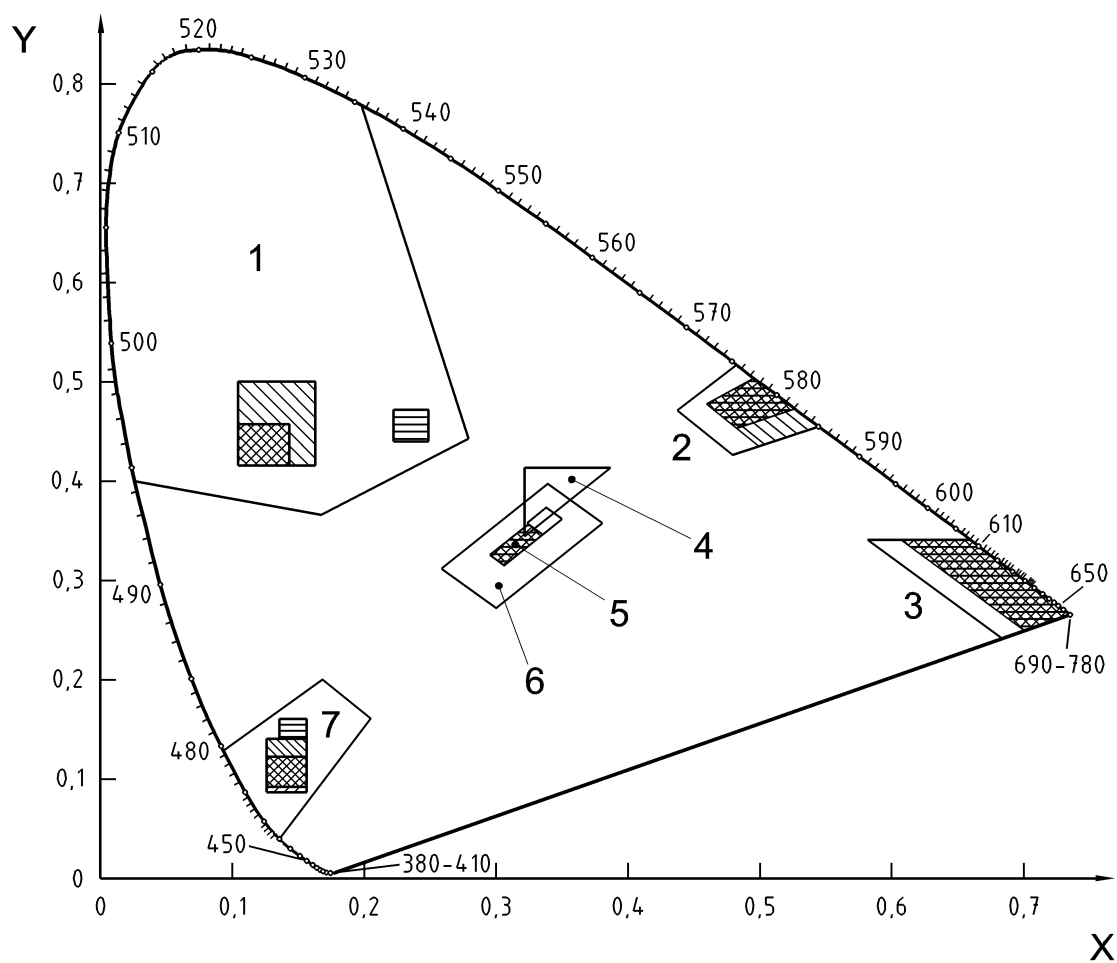
4.2.3 The luminance contrast k shall be greater than 5.

4.2.4 If there is no colour specification 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 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, e.g. the wall of the wagon. In any case, when a part of the marking is indicated to be the wagon colour background, the requirement to the luminance contrast shall be met.

Table 1

	Chromaticity coordinates of corner point					Luminance factor β		
Colour		1	2	3	4	ordinary material	retro reflecting	RAL®
<u>Red</u>	x	0,735	0,681	0,579	0,655	$\geq 0,07$	$\geq 0,05$	3020
	y	0,265	0,239	0,341	0,345			
<u>Blue</u>	x	0,094	0,172	0,210	0,137	$\geq 0,05$	$\geq 0,01$	5015
	y	0,125	0,198	0,160	0,038			
<u>Yellow</u>	x	0,545	0,494	0,444	0,481	$\geq 0,45$	—	1023
	y	0,454	0,426	0,476	0,518			
Yellow retro reflecting	x	0,494	0,470	0,493	0,522	—	$\geq 0,27$	
	y	0,505	0,480	0,457	0,477			
<u>Green</u>	x	0,201	0,285	0,170	0,026	$\geq 0,12$	$\geq 0,04$	6018
	y	0,776	0,441	0,364	0,399			
<u>White</u>	x	0,350	0,305	0,295	0,340	$\geq 0,75$	$\geq 0,35$	9016
	y	0,360	0,315	0,325	0,370			
<u>Black</u>	x	0,385	0,300	0,260	0,345	$\leq 0,03$	—	9011
	y	0,355	0,270	0,310	0,395			
Orange*	x	0,520	0,520	0,578	0,618	$\geq 0,22$	$\geq 0,12$	2003
	y	0,380	0,400	0,422	0,380			
* This colour is not specified in ISO 3864 but is specified in RID.								

The column RAL® is not normative for colour matching, but an example from an industry colour order system to indicate what the respective colours look like.



Key

- 1 green
- 2 yellow
- 3 red
- 4 yellowish phosphorescent white
- 5 white
- 6 black
- 7 blue

Figure 1 — Chromaticity diagram

4.2.5 Conditions

The physical requirements that safety signs have to meet are primarily related to daytime colour.

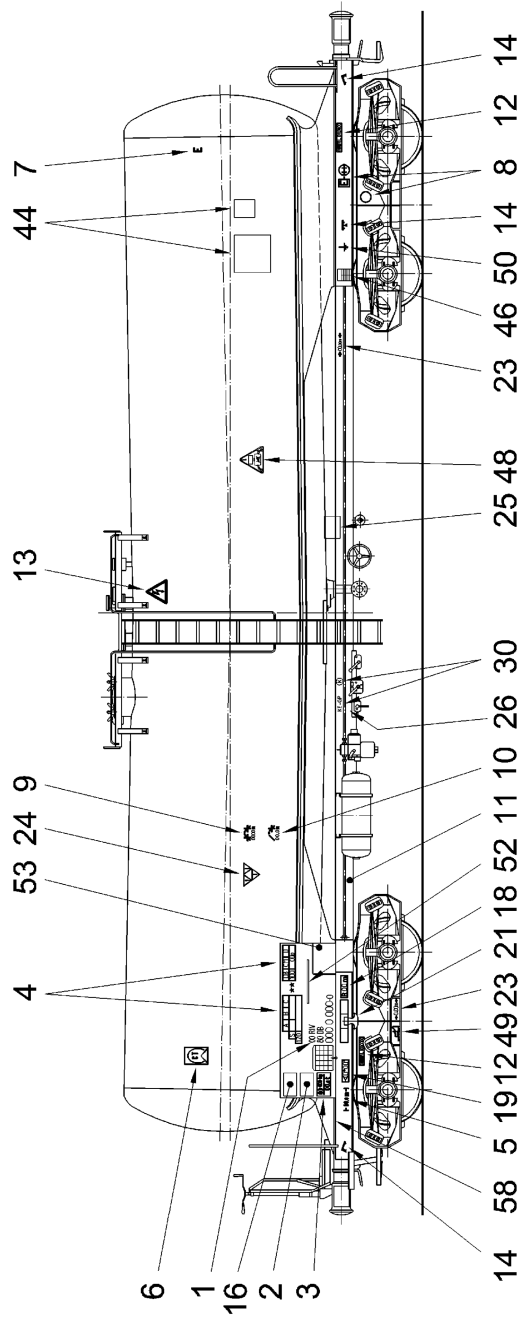
Measurements of chromaticity coordinates and luminance factor β shall be made as specified in CIE 015-2004.

For the measurement of chromaticity coordinates and luminance factor β of ordinary, luminescent and retro reflecting markings, the material is considered to be illuminated by daylight as represented by the standard illuminant D65 at an angle of 45° with the normal to the surface and the observation made in the direction of the normal (45/0 geometry).

The coefficient of retro reflection shall be measured in accordance with CIE 054.2-2001, using standard illuminant A with the condition that the entrance and observation angles are in the same plane.

4.3 Positioning

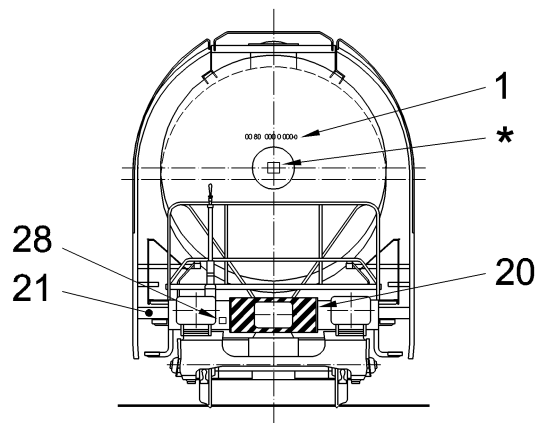
Where applicable, markings shall be positioned generally according to Figures 2.a, 2.b and 3. The list of markings is contained in the table under 4.4 and their position and meaning described in 4.5. Not all markings can be accommodated in the diagrams.



Key

See 4.4

Figure 2a



Key

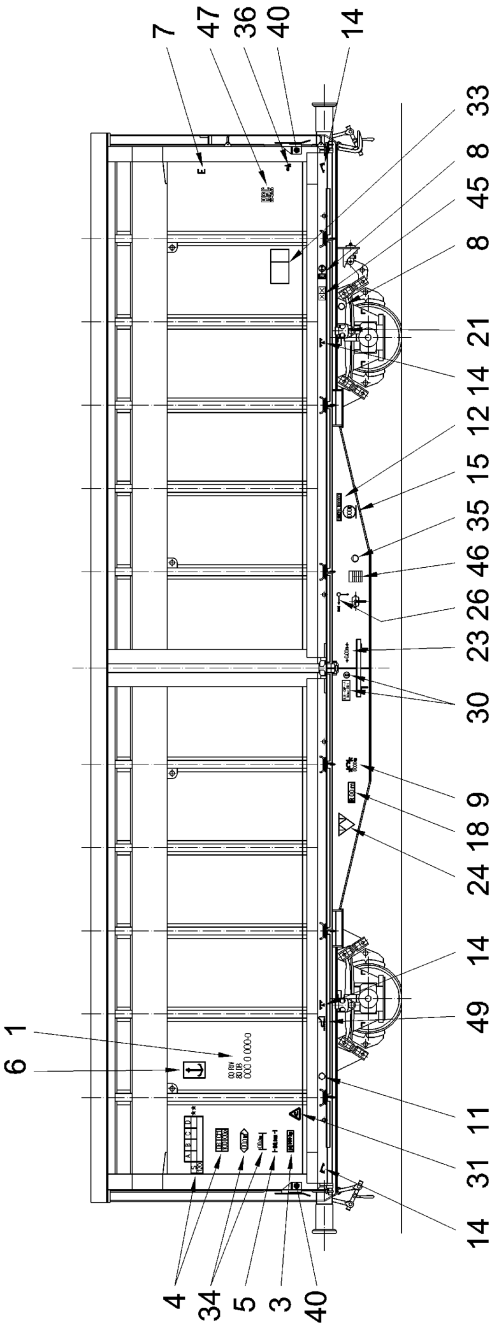
See 4.4

NOTE Where movable panels are used, the name of the substance transported position No. 52 and the maximum permissible load weight for that substance should be written on the same panel but shall not exceed the maximum permissible loads as indicated on the tank identification plate* or the maximum of the load table Position No.4

* Details of the Tank Identification Plate are specified in EN 12561-1 "Railway applications — Tank wagons —

Part 1: Identification plates for tank wagons for the carriage of dangerous goods".

Figure 2b



Key

See 4.4

Figure 3

4.4 List of markings

Position No.	Description	Subclause
1	Vehicle unique number (EVN)	4.5.1
2	Gauge marking	4.5.2
3	Wagon tare weight and hand braked weight	4.5.3
4	Wagon load table	4.5.4
5	Length over buffers	4.5.5
6	Traffic to and from Great Britain	4.5.6
7	Wagons built for running between networks with different track gauges	4.5.7
8	Wagons with gauge changing wheelsets	4.5.8
9	Shunting prohibited on humps with a small curve radius	4.5.9
10	Bogie wagons with a distance between inner axles in excess of 14,0 m and which are accepted for hump shunting	4.5.10
11	Wagons prohibited from passing through retarders or other stopping devices in service mode	4.5.11
12	Table of maintenance dates	4.5.12
13	High voltage warning notice (lightning flash)	4.5.13
14	Lifting and jacking points	4.5.14
15	Carrying capacities	4.5.15
16	Volumetric capacities	4.5.16
17	Height of the loading plane for container wagons in tare condition	4.5.17
18	Minimum curve radius	4.5.18
19	Maximum ferry ramp angle	4.5.19
20	Impact protection	4.5.20
21	Wagons fitted with projecting tow hooks	4.5.21
22	Concentrated payloads	4.5.22
23	Distance between end axles or bogie centres	4.5.23
24	Wagons which need special care when being shunted	4.5.24
25	Manually applied parking brake	4.5.25
26	Isolating brake handle	4.5.26
27	Instructions and safety advices for special equipment	4.5.27
28	Buffer stroke	4.5.28
29	Numbering of wheelsets	4.5.29
30	Brake system markings	4.5.30
31	Wagons fitted with the automatic coupler (conforming to the OSJD standard)	4.5.31
32	Customs authorisation plate for wagons operating on 1520 mm gauge railways	4.5.32
33	Derogation Plate	4.5.33
34	Length for load and floor space	4.5.34

Position No.	Description	Subclause
35	Spark arrestor plates	4.5.35
36	Removable wagon accessories	4.5.36
37	Marking for the inside of wagons: "Do not use nails/wire staples"	4.5.37
38	Combined transport wagons	4.5.38
39	Permanently coupled wagon units	4.5.39
40	Wagons fitted with a train line	4.5.40
41	Wheels able to withstand high thermal stresses	4.5.41
42	Tyred wheels	4.5.42
43	Ventilation pipes	4.5.43
44	Tank code , special provision code(s) and next inspection due	4.5.44
45	Replacement of springs	4.5.45
46	Wheel tyre inspection	4.5.46
47	Inspection periods for temperature controlled units	4.5.47
48	Protection of the inner lining of wagons	4.5.48
49	Permissible diameter of the wheel	4.5.49
50	Earthing protection	4.5.50
51	Prohibition to run with open sliding doors, curtains or hood	4.5.51
52	Transported goods	4.5.52
53	Orange Plate for dangerous goods (RID subclause 5.3.2)	4.5.53
54	Wheel point loading	4.5.54
55	Elevated temperature	4.5.55
56	Vacuum insulated tanks	4.5.56
57	Smoking and naked flames forbidden	4.5.57
58	High strength coupling	4.5.58
59	Derailment Detector	4.5.59

4.5 Details of vehicle markings

4.5.1 Vehicle unique number (EVN)

The vehicle number lettering shall be at least 80 mm.

The markings shall be inscribed on the wagon bodywork as in the following examples:

A1

Dimensions in millimetres

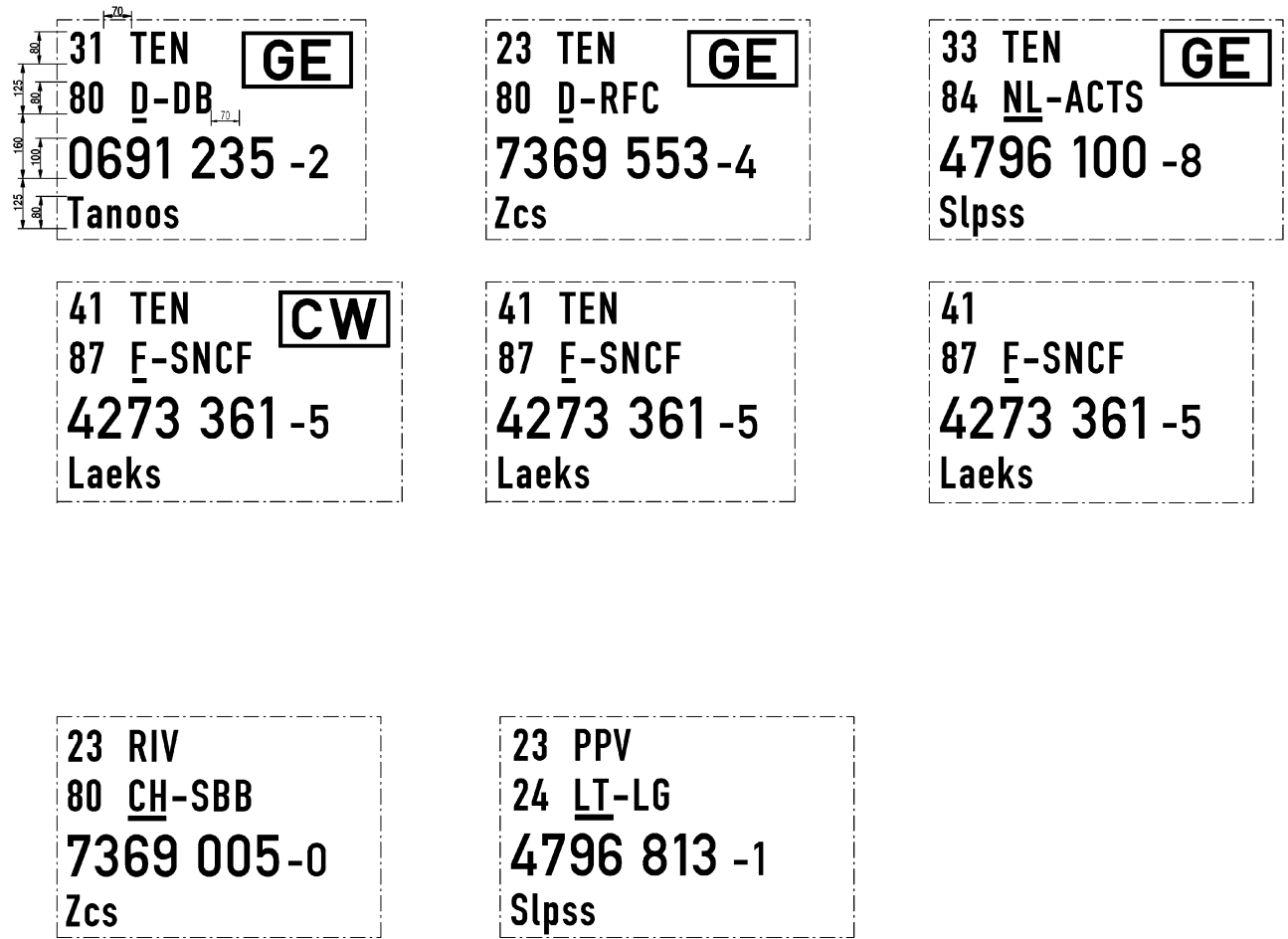
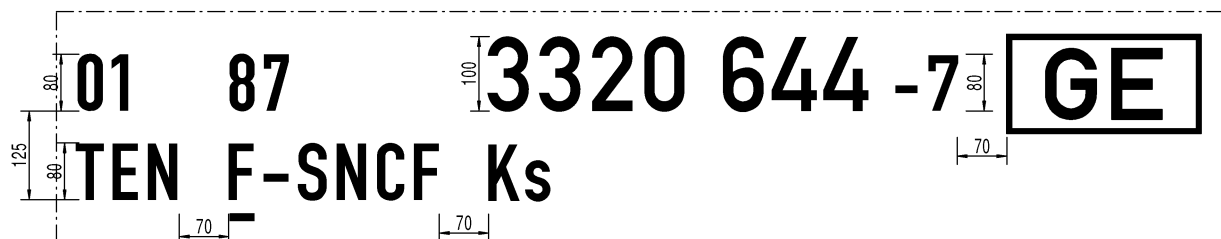


Figure 4 A1

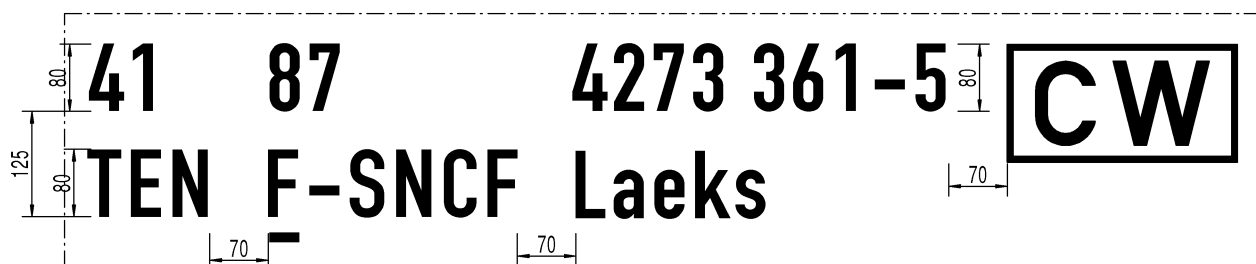
When the wagon body does not provide sufficient surface area for this layout (flat wagons in particular) the markings shall be applied as follows:



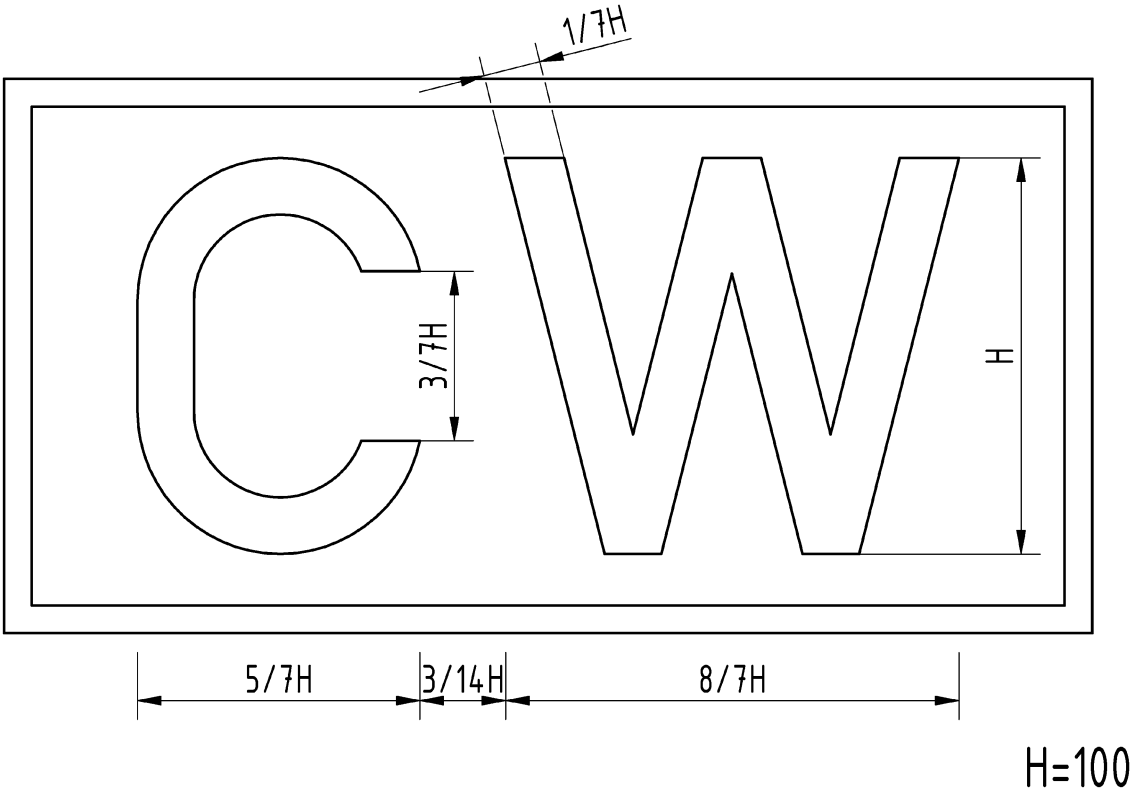
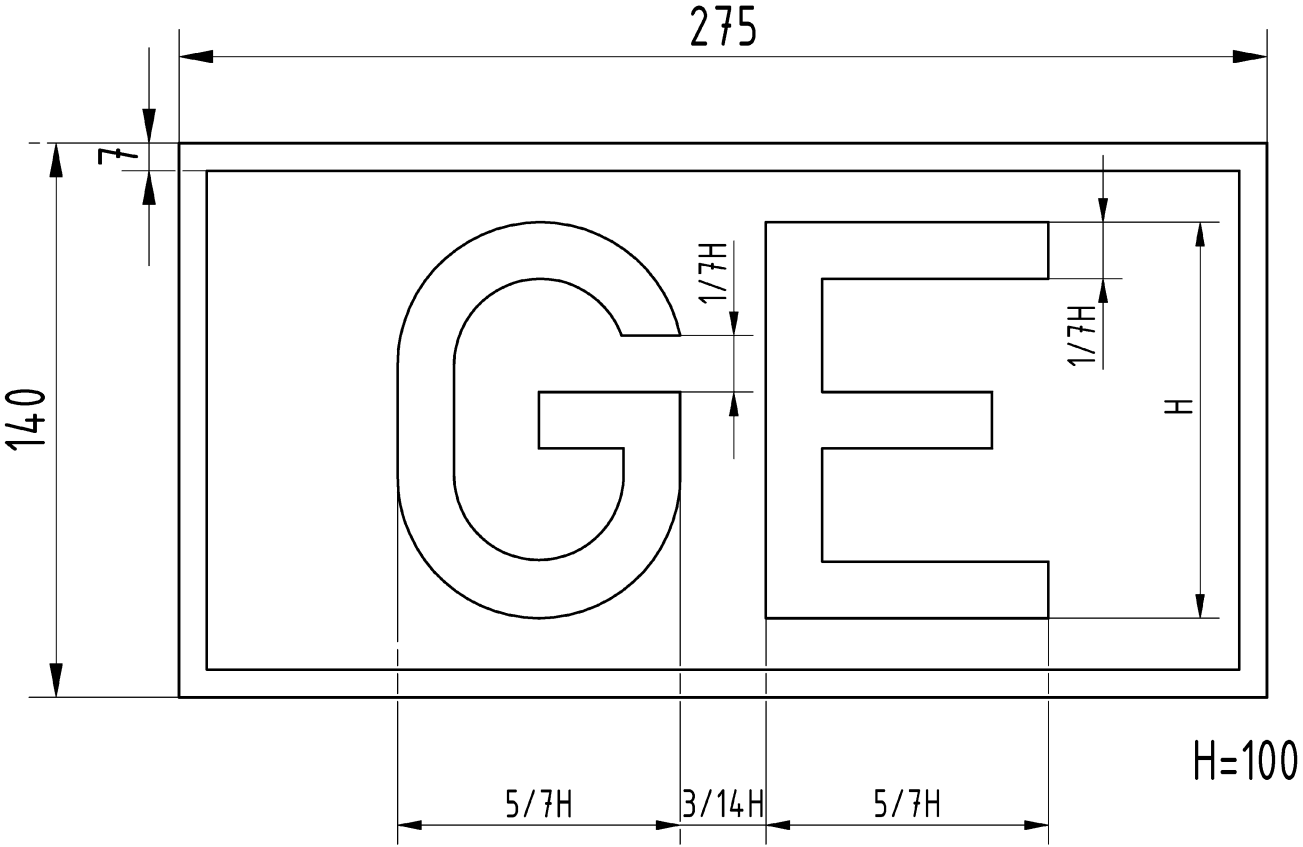
Dimensions in millimetres



a)



b)



c)



NOTE The dotted frame around the markings in Figures 4 and 5 is not part of the marking.

Position: On the left of each side wall, or the left of each solebar in the case of low-sided open wagons or on inscription panels in the case of wagons without side walls (e.g. tank wagons). The marking is to be located not higher than 2 metres above rail level.

Meaning: (based on the examples in Figure 4 above).

31: Fitness for interoperability (2 digits).

80: Country in which the wagon is registered (2 digits) in accordance with TSI OPE P.4.

0691: Principal technical characteristics (4 digits).

235: Generic number of the wagon in its registration series.

-2 : Check digit.

PPV/PPW: OSJD Rules for International Operation of Wagons and Coaches of 01/01/1956 updated 01/01/1997.

RIV: The RIV marking on a wagon means that the wagon, in addition to having been approved against the rules in force, also meets the regulations of railway Technical Unity (TU) and the provisions of leaflets in the UIC Code.

TEN: The TEN marking according to Annex P.5 of the EU regulations as set out in 2006/920/EC and as amended by 2009/107/EC and corresponding COTIF regulations.

D: Country in which the wagon is registered, in this example Germany.

DB: Vehicle Keeper Marking (VKM); this information is compulsory if the full name of the company, complete with full address, is not given.

F: Example without VKM.

When the full name and address information is inscribed on the vehicle, a VKM is not required for Vehicles of Keepers with such a limited vehicle fleet that this does not warrant the use of a VKM,

or

specialised vehicles for infrastructure maintenance.

Figure 5

4.5.2 Gauge marking

Dimensions in millimetres

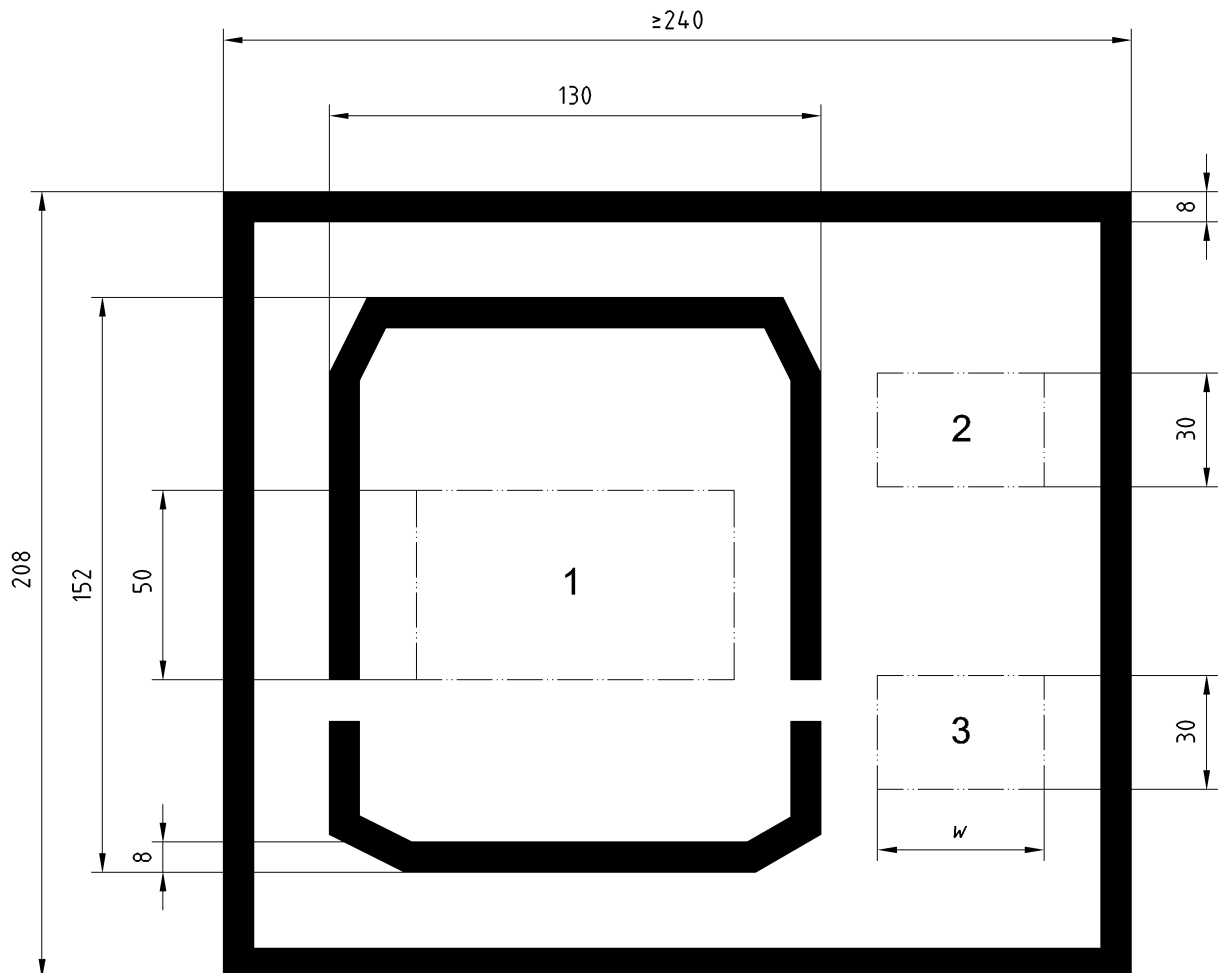
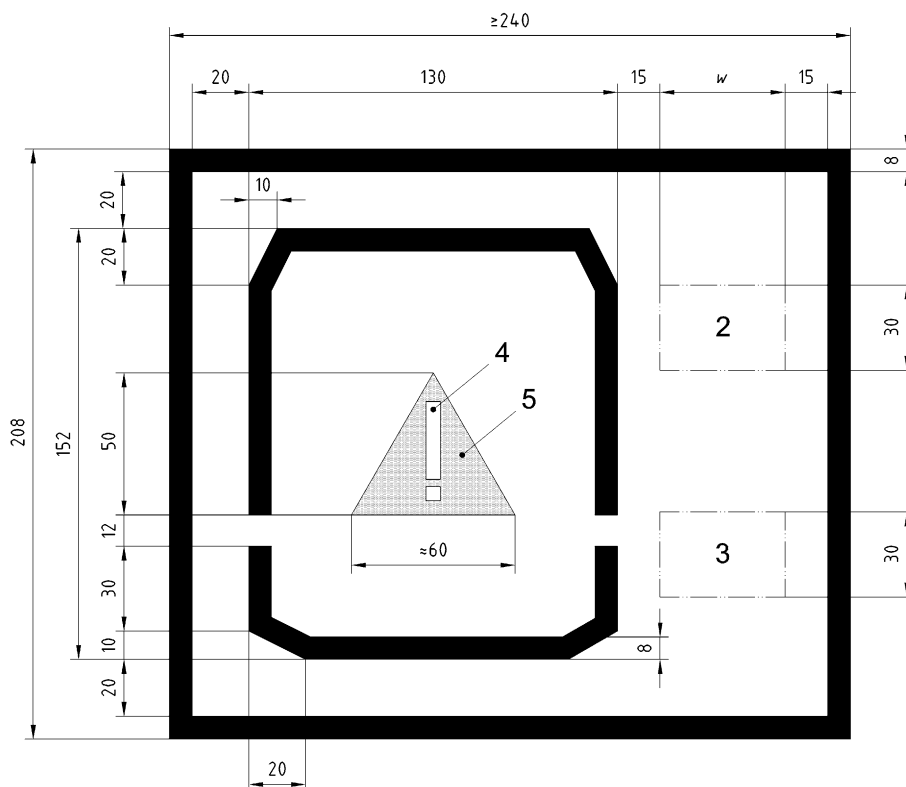


Figure 6a

Dimensions in millimetres



Key: 1, 2 and 3 classification of kinematic gauges in accordance with EN 15273-2

4 white

5 red

w width depending on the font chosen

Position: On the left of each side wall, or the left of each solebar, or on inscription panels, near to the vehicle number.

Meaning: Key 1: G1 or GA or GB or GC indicates the Kinematic reference contour of the wagon as requested in the WAG TSI and OTIF regulations.

Figure 6b is used when the gauge is different from G1 or GA or GB or GC.

Key 2: indicates the kinematic reference contour for the superstructure of the wagon.

The contour of the kinematic gauge must be smaller or equal to the kinematic gauge according to Key 1.

For example G1 or G2 or GB1 or GB2, etc.,

Key 3: indicates the kinematic reference contour for the infrastructure of the wagon

For example GI1 or GI2 or GI3, etc.

NOTE This gauge marking does not indicate the loading gauge of the wagon. For instance it is possible to load G11 flat wagon in respect of the GC loading gauge and in accordance with operational rules.

Figure 6b

4.5.3 Wagon tare weight and hand braked weight

Dimensions in millimetres

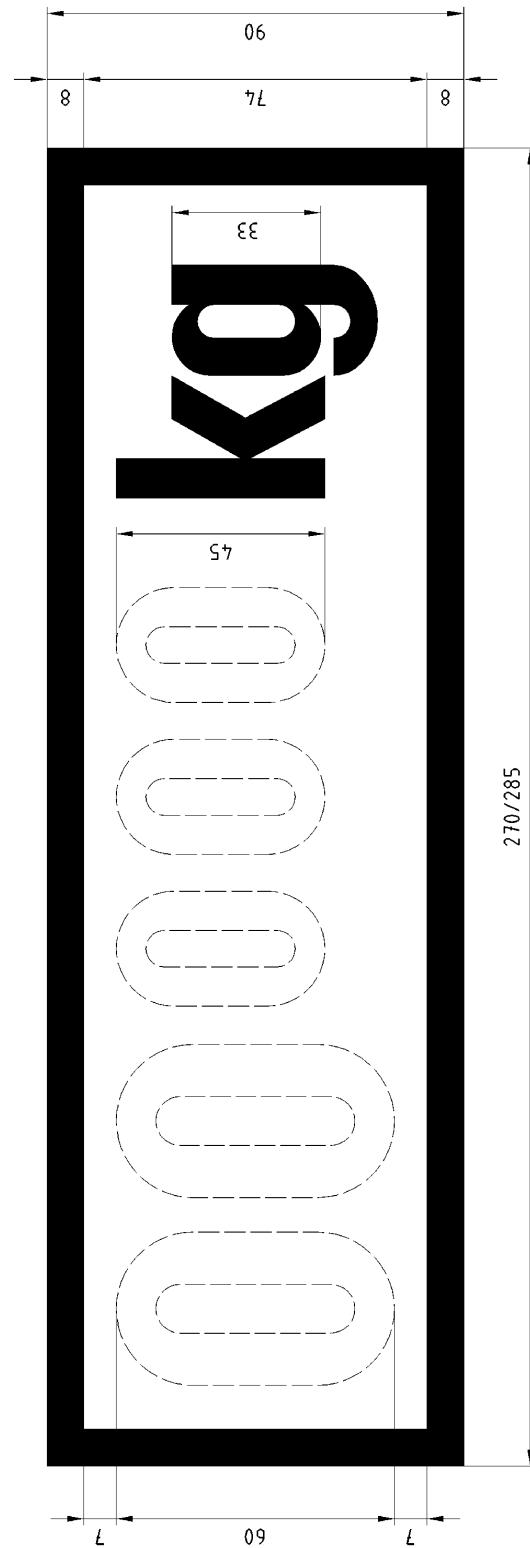


Figure 7 — Tare

Dimensions in millimetres

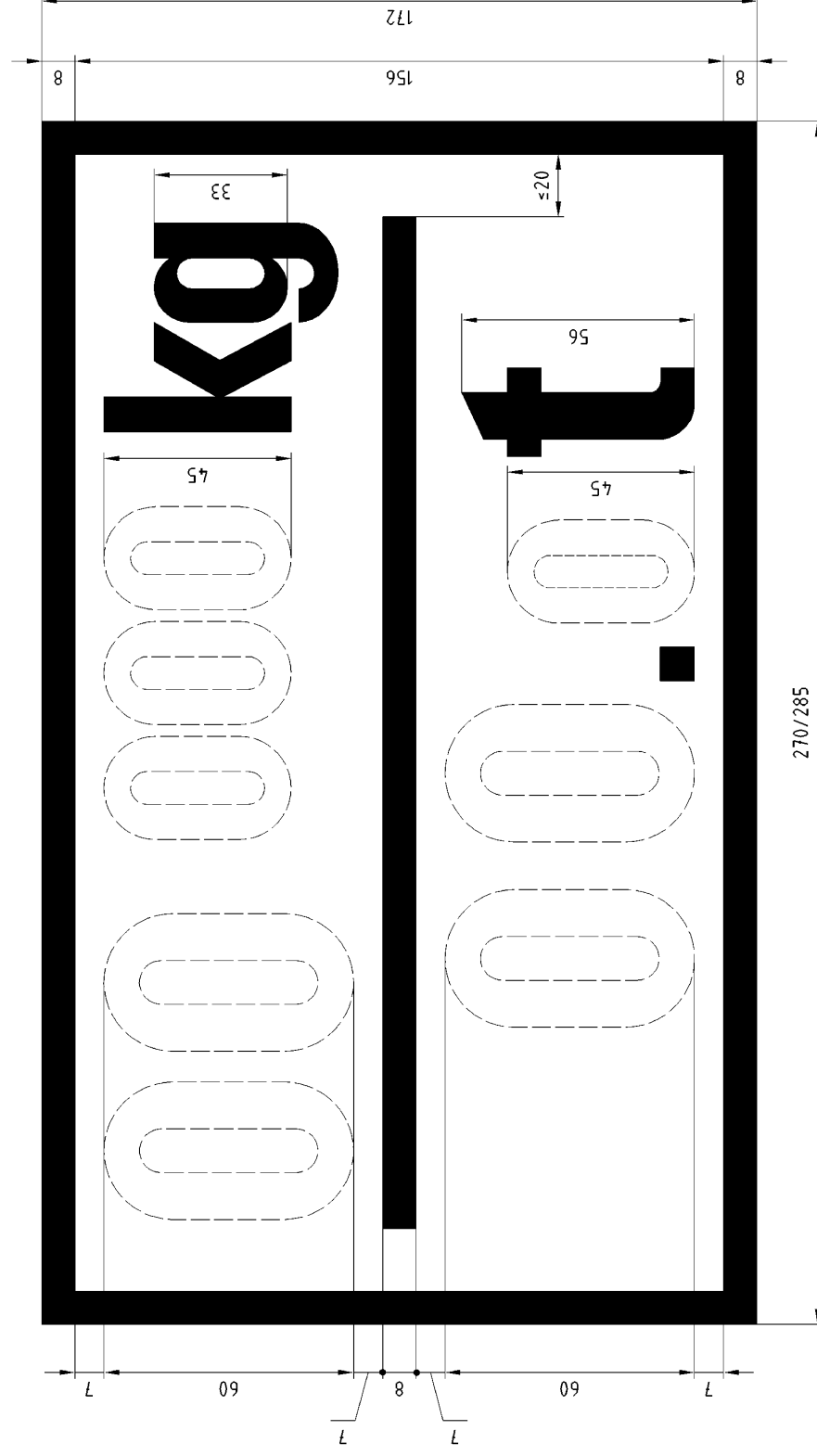
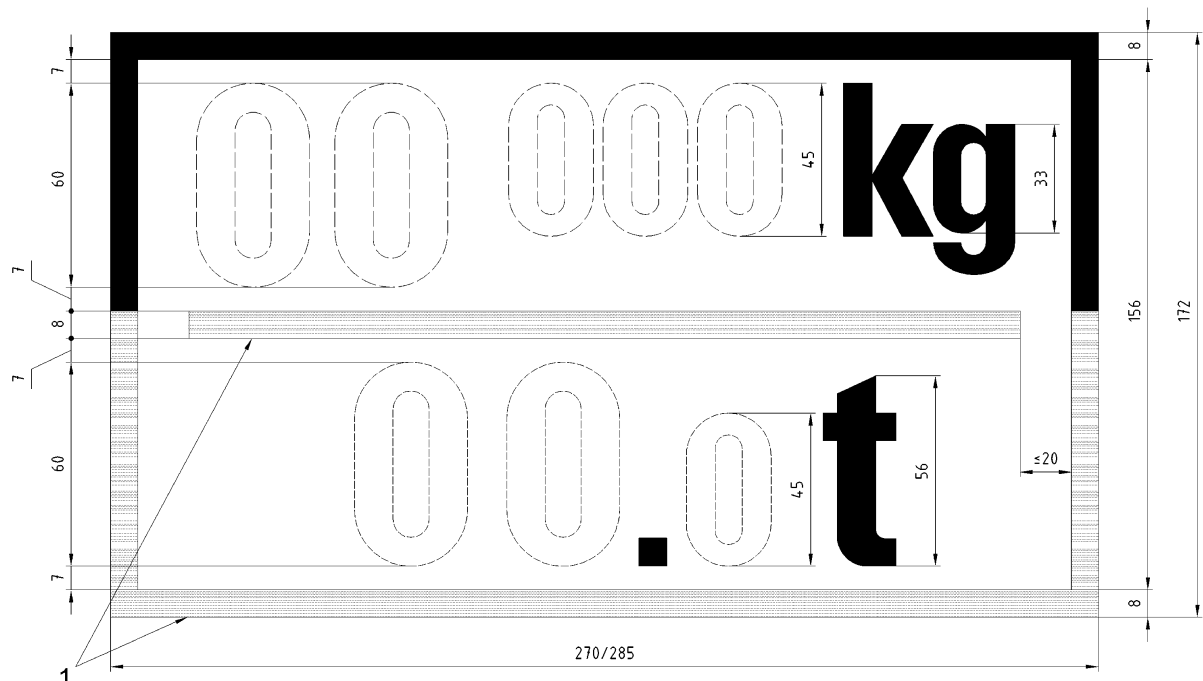


Figure 8 — Wagon tare and braked weight of the platform-operated hand brake

Dimensions in millimetres



Key: 1 red

Position: On the left of each side of the wagon.

Meaning: Indicates the wagon tare (upper figure) and hand braked weight (lower figure).

The marking shown in Figures 8 or 9 is marked on the wagon when the hand braked weight is less than the total weight of the vehicle (tare + load corresponding to the maximum weight).

The braked weight as shown in Figure 9 shall be marked in a red box when it refers to a ground-operated hand brake.

When a wagon is fitted with more than one independently-acting hand brake, the corresponding number of brakes shall be indicated in front of the braked weight (for example: 2 × 00,0 t).

NOTE The marking shown in Figure 7 should not be affixed to a wagon that is to carry the marking in Figures 8 or 9

Figure 9 — Wagon tare and braked weight of the ground-operated hand brake (the latter to be shown in a red box)

4.5.4 Wagon load table

Load limits – Figure 10 to Figure 18 are example formats.

Dimensions in millimetres

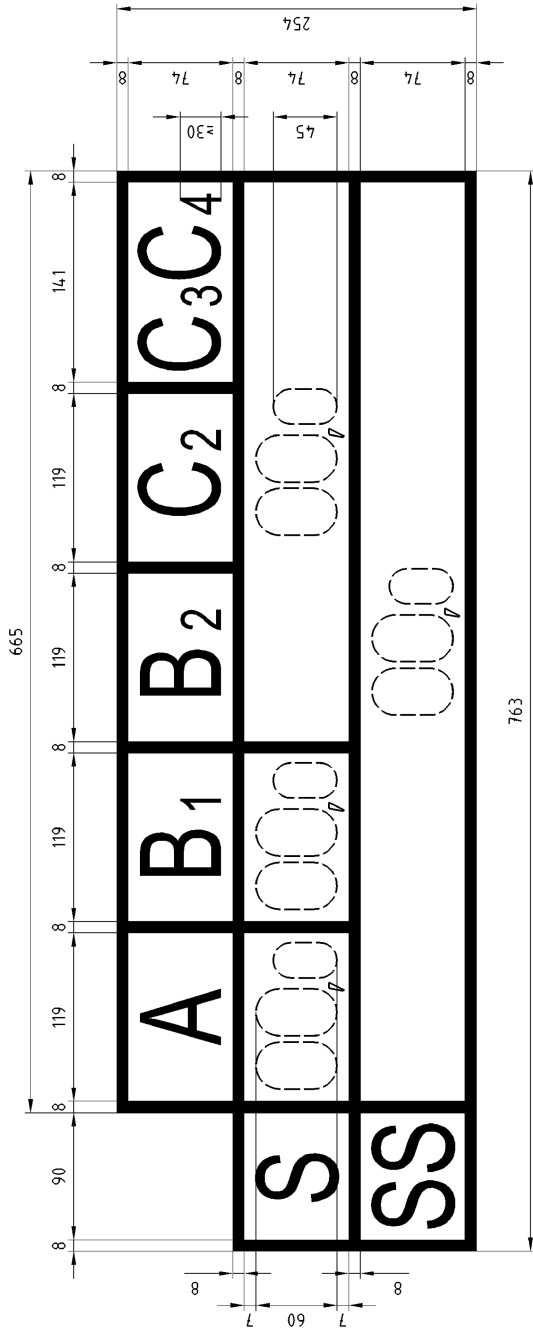


Figure 10

Dimensions in millimetres

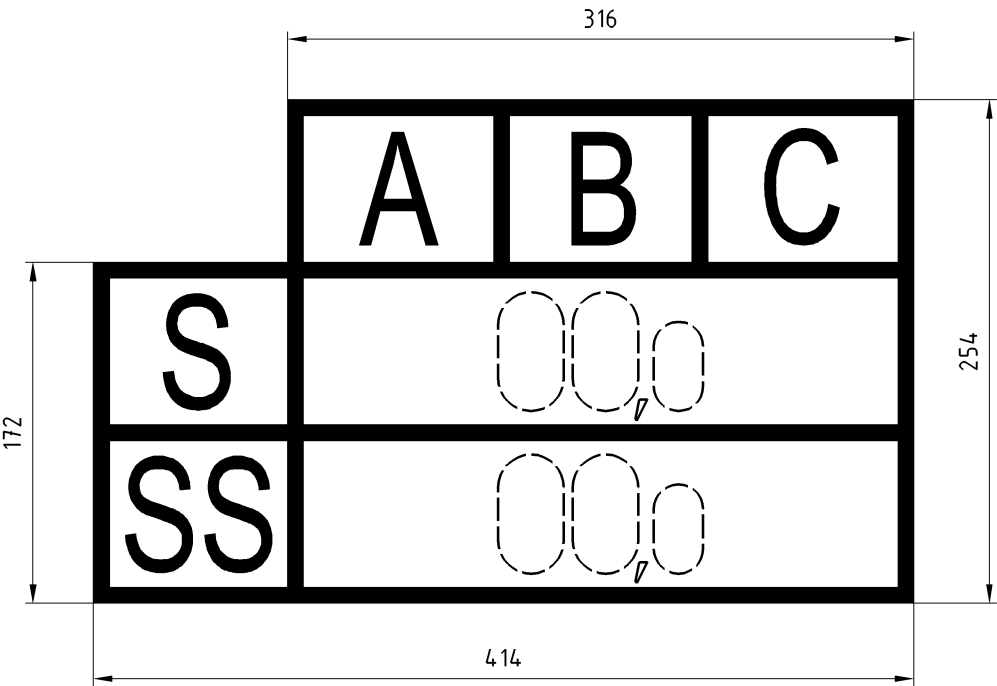


Figure 11

Dimensions in millimetres

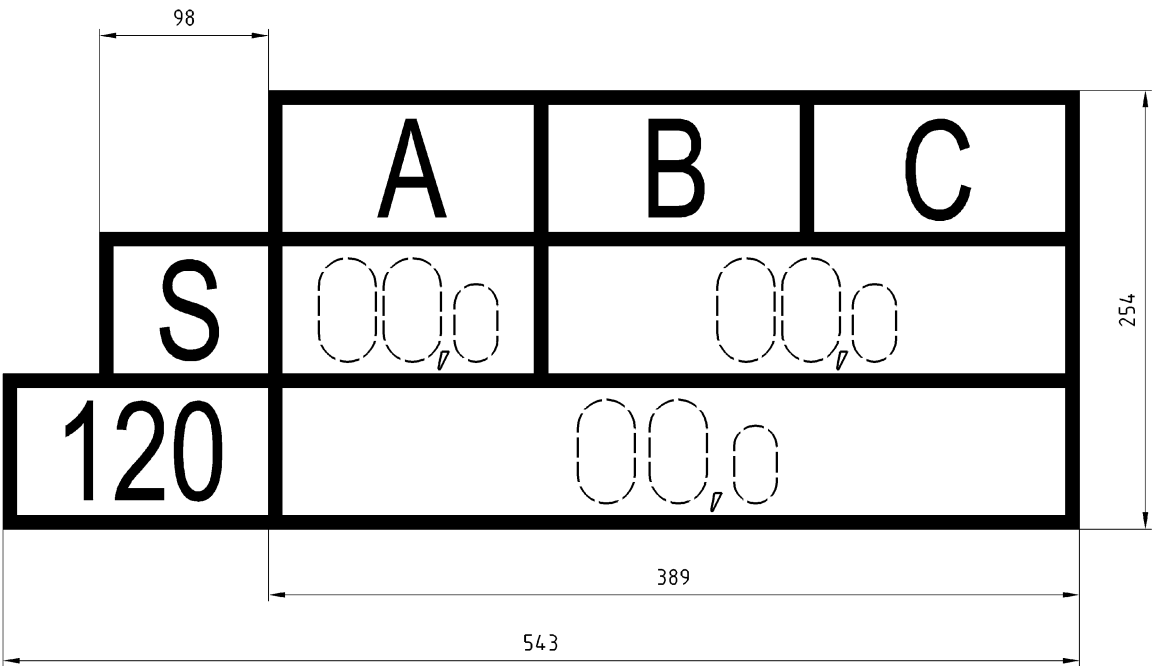


Figure 12

Dimensions in millimetres

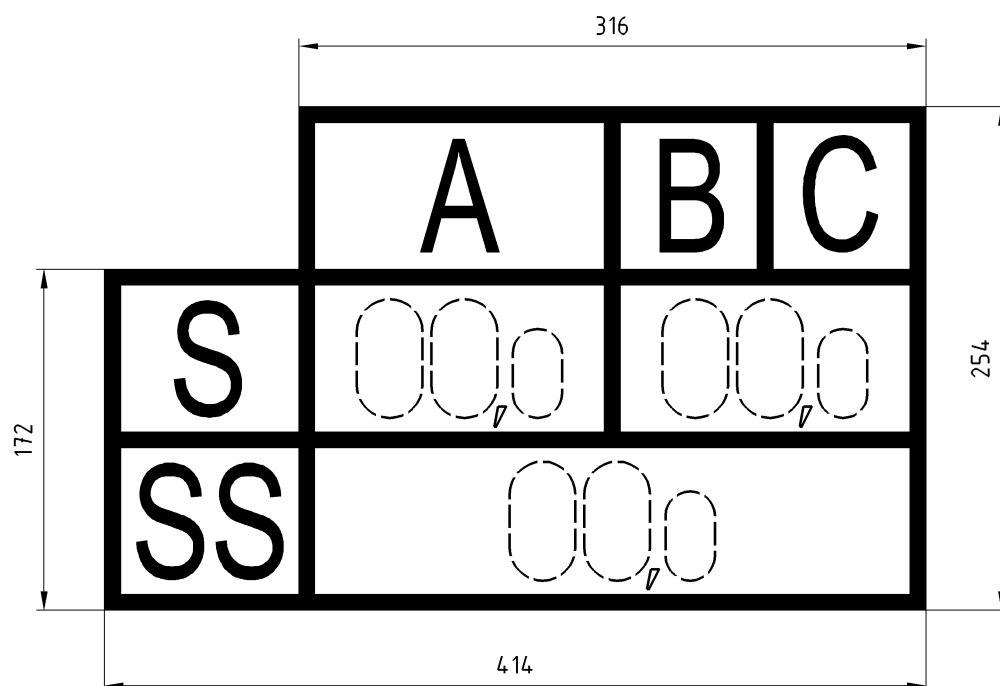


Figure 13

Dimensions in millimetres

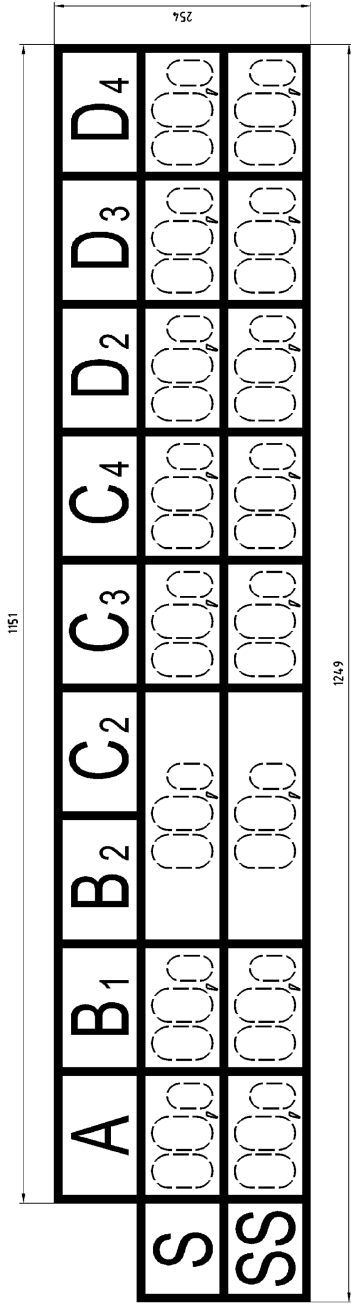


Figure 14

Dimensions in millimetres

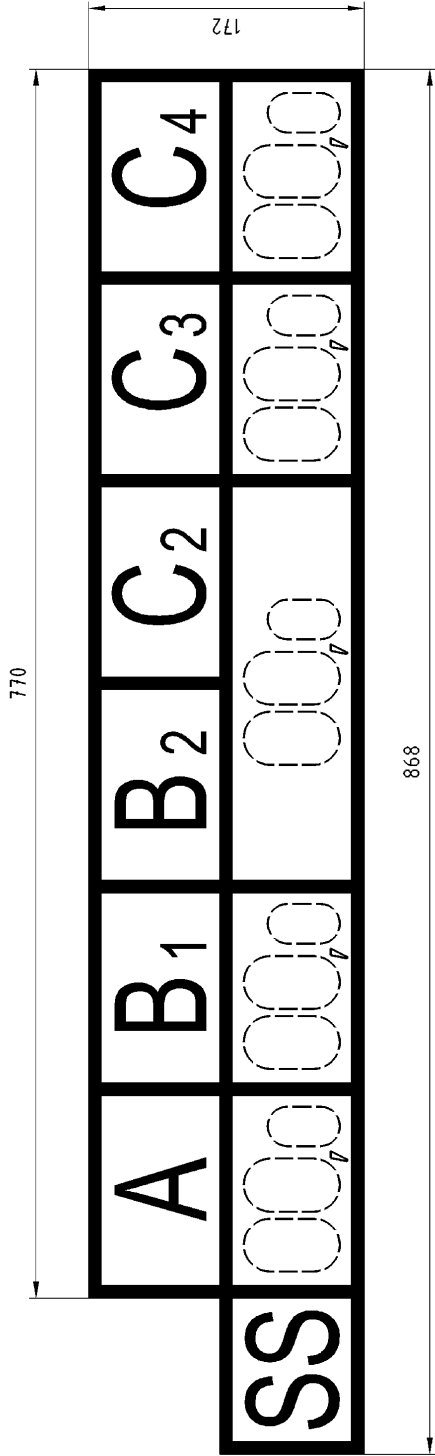
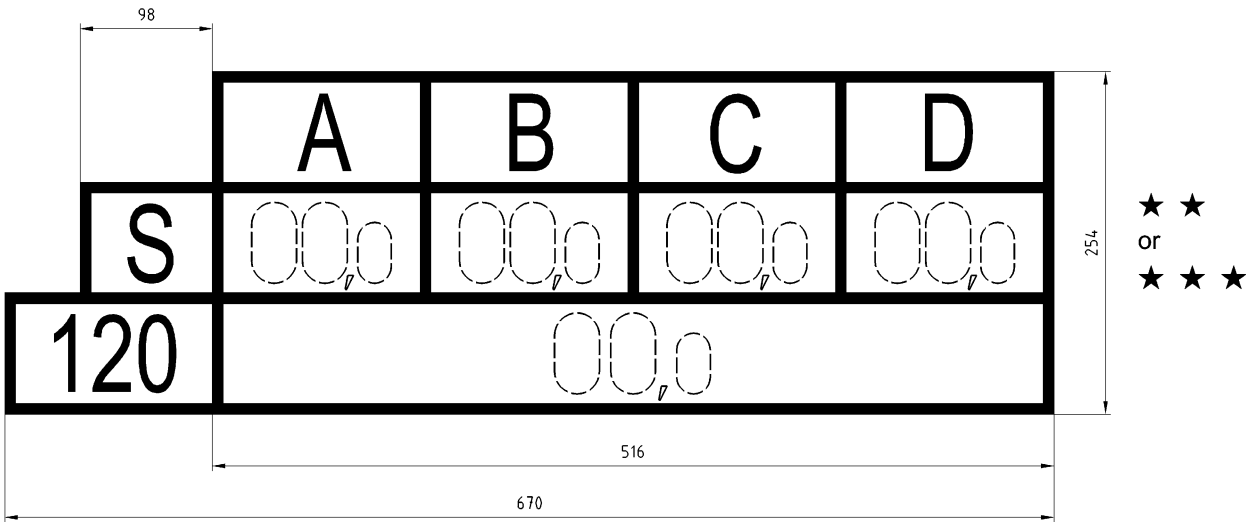


Figure 15

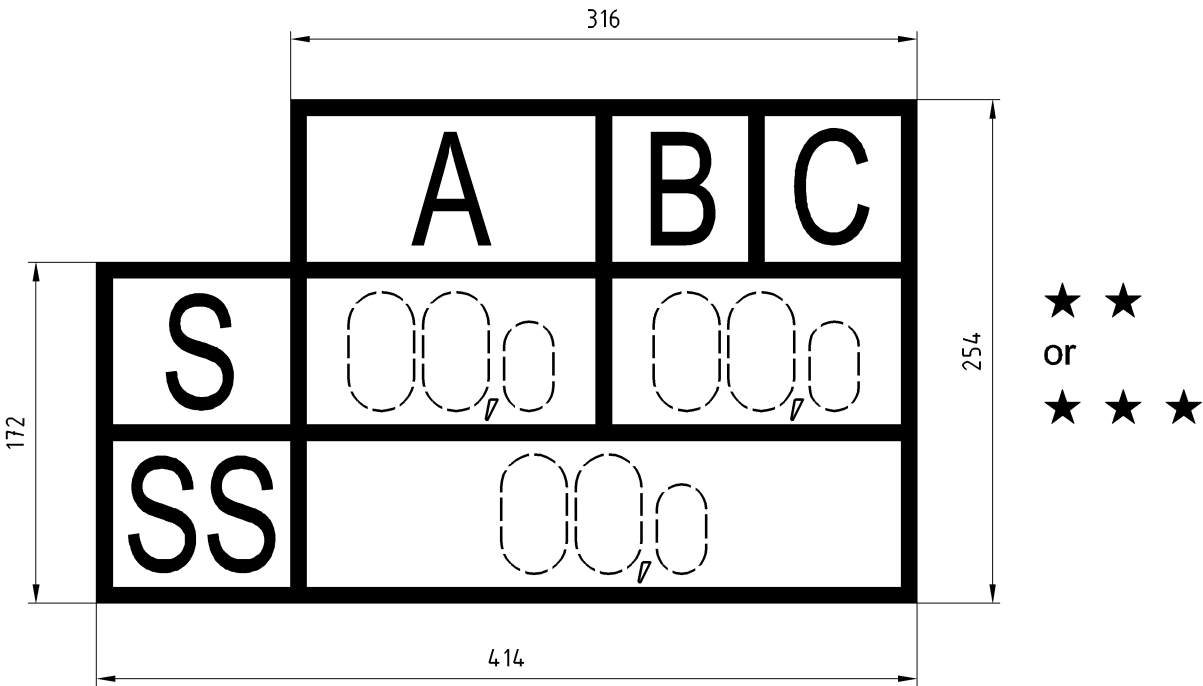
Dimensions in millimetres



NOTE As an exception to this rule, the stars may also be positioned to the left of the load limit panel.

Figure 16

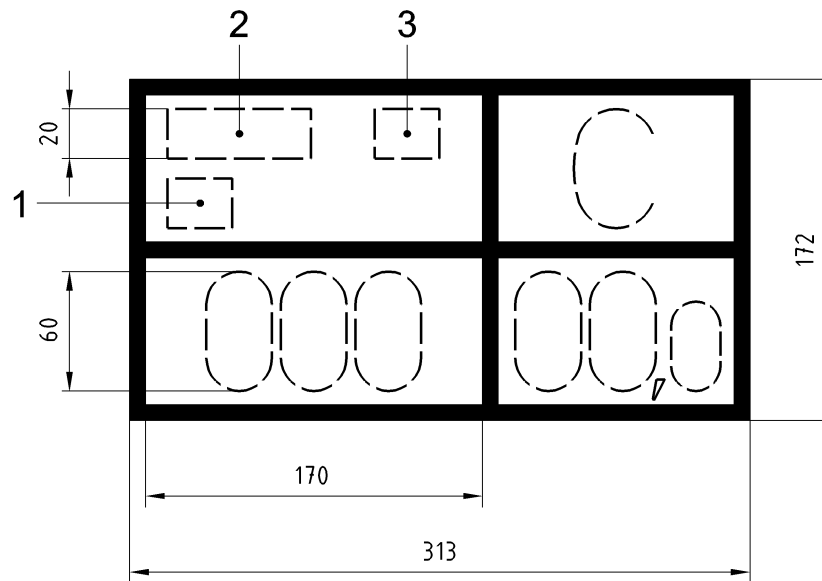
Dimensions in millimetres



NOTE As an exception to this rule, the stars may also be positioned to the left of the load limit panel.

Figure 17

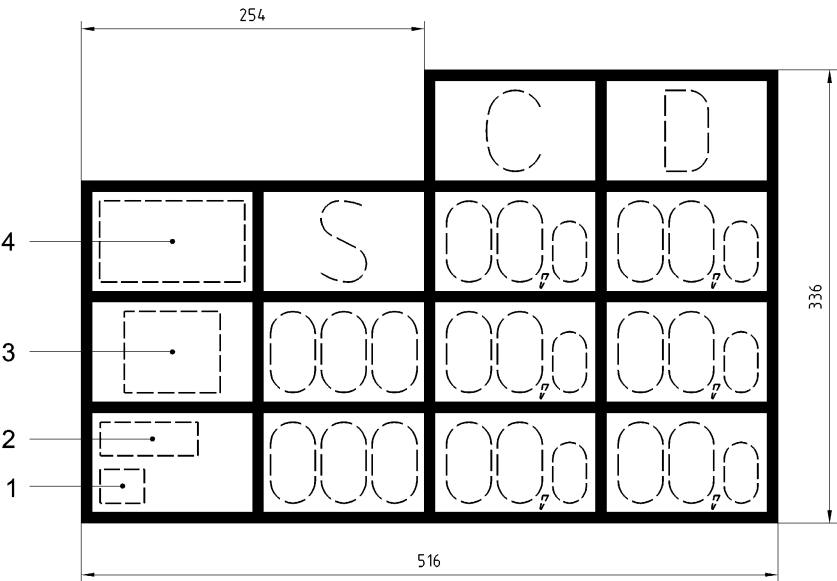
Dimensions in millimetres



Key: 1, 2, 3 are the mark(s) of the corresponding network(s).

Figure 18

Dimensions in millimetres



Key: 1, 2, 3, 4 are the mark(s) of the corresponding network(s).

Position: On the left of each side of the wagon.

Meaning for Figures 10 to 19 A, B, C, D and E Line categories as defined in EN 15528.
etc.,

S	Maximum payload in t (tonnes) for wagons running in trains operated under S conditions (maximum speed 100 km/h) with no particular operating restrictions.
SS	Maximum payload in t for wagons running in trains operated under SS conditions (maximum speed 120 km/h) with no particular operating restrictions.
120/00,0	Wagons authorised to run in trains up to 120 km/h when unloaded (Figures 12 and 16).
Fig.18-19	Between Contracting parties and exceeding the normal load limits. Figure 18 and Figure 19 are examples for interoperable wagons and with the payloads indicated for the networks indicated.
★★	Wagons built before entry into force of CR TSI RST Freight Wagon (31.01.2007). Maximum load in t for wagons authorised to run in trains up to 120 km/h with a brake that does not meet all the requirements for SS conditions.
★★★	Wagons built since entry into force of CR TSI RST Freight Wagon (31.01.2007) and fitted with a variable load valve. Maximum load in t for wagons authorised to run in trains up to 120 km/h with a brake that does not meet all the requirements for SS conditions.

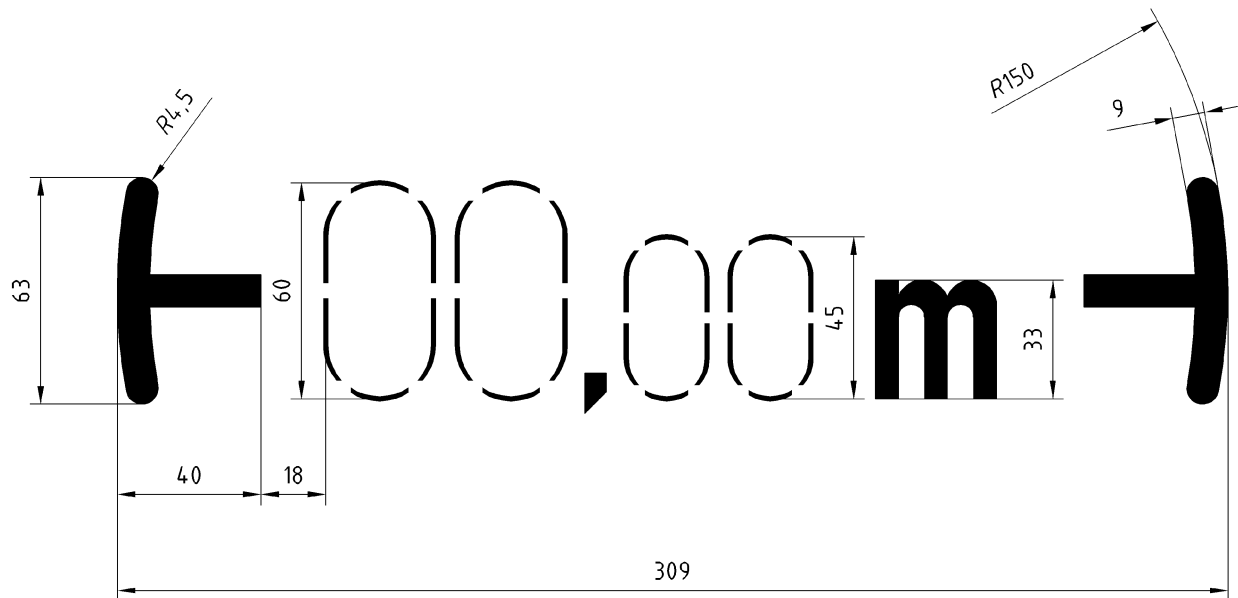
NOTE 1 The load table should record the maximum payload calculated in accordance with EN 15528 for each line category.

NOTE 2 For wagons carrying the ★★ or ★★★ marking, RUs should define the necessary rules for the correct formation of the train (achieving the correct brake percentage, timetable changes where appropriate, etc.).

Figure 19

4.5.5 Length over buffers

Dimensions in millimetres



Position: On the left hand side of the wagon.

Meaning: Indicates the wagon's length over uncompressed buffers in metres.

On wagons made up of separate units joined together by a permanent coupling (multiple wagon units) the total length of the wagon shall be indicated.

Figure 20

4.5.6 Traffic to and from Great Britain

Dimensions in millimetres

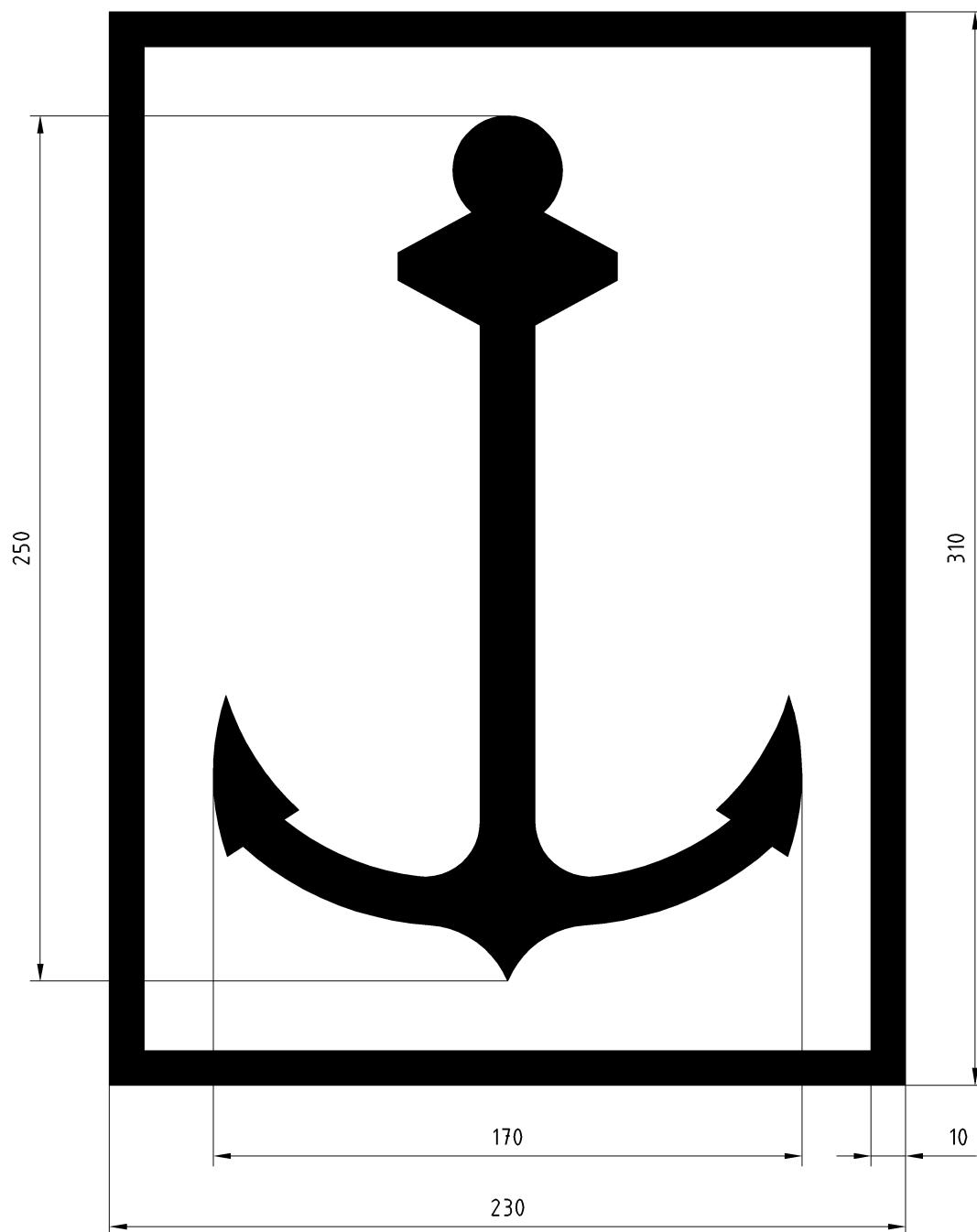
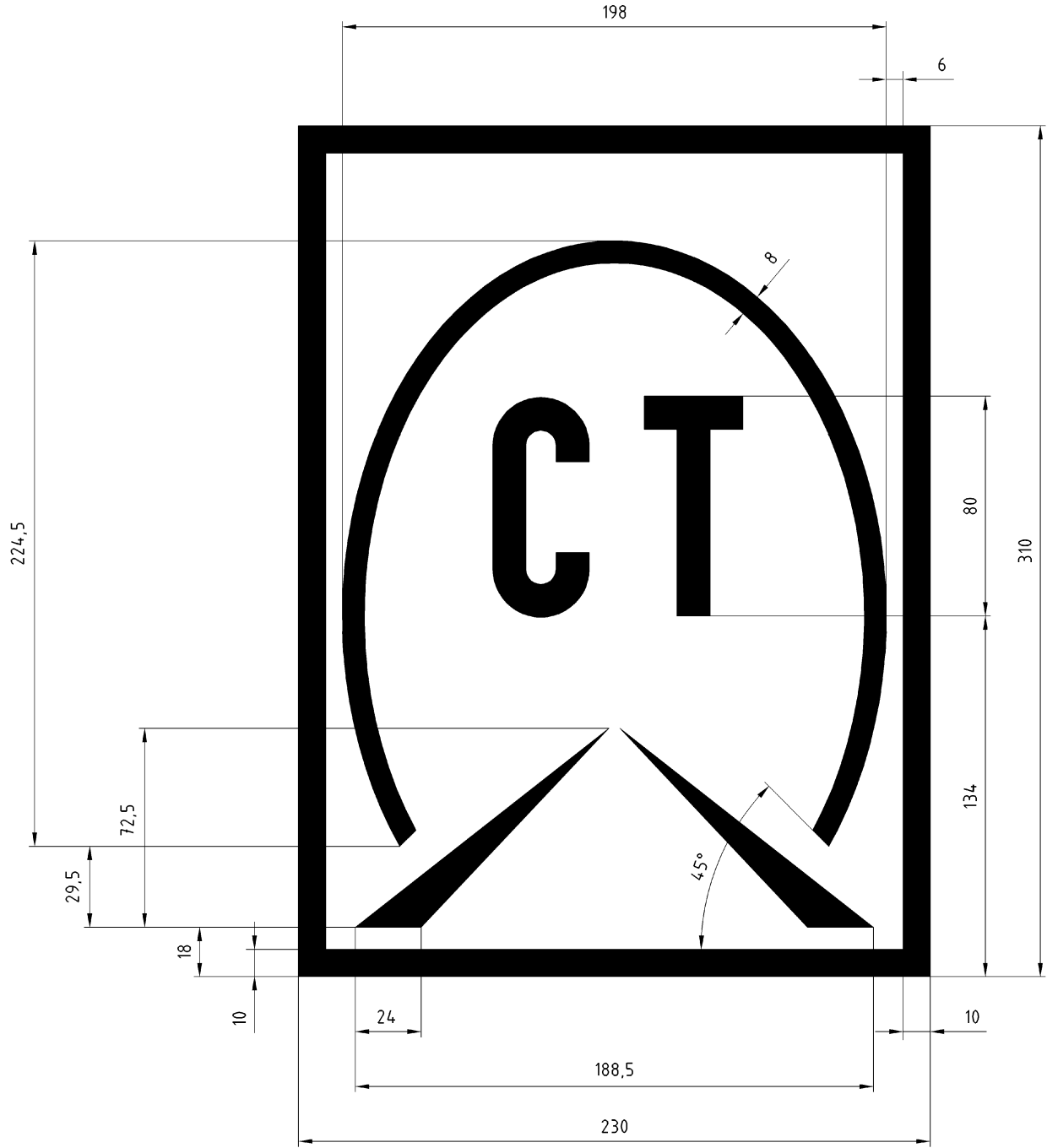


Figure 21 — For wagons accepted on train-ferries

Dimensions in millimetres



Position: On the left of each side wall.

Meaning: These markings are only for wagons, permitted to be used for traffic to and from Great Britain according to Figure 21 or Figure 22 or combination of Figures 21 and 22 (horizontally or vertically)

Figure 22 — For wagons accepted through the Channel Tunnel

4.5.7 Wagons built for running between networks with different track gauges

Dimensions in millimetres

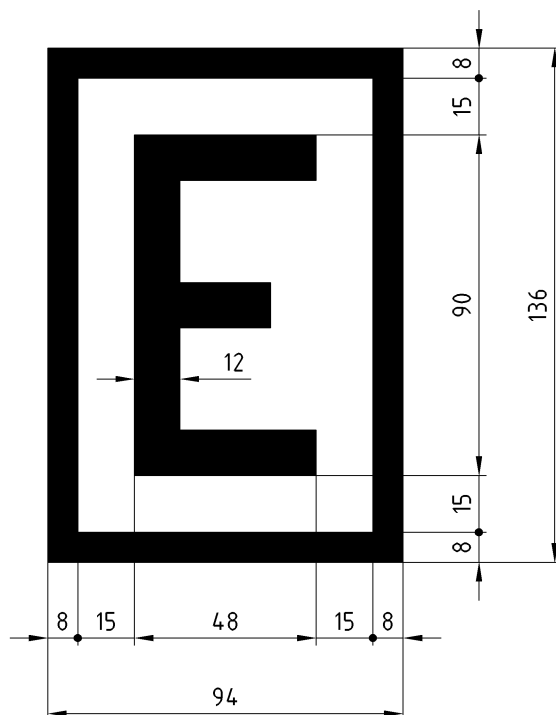


Figure 23a — Networks with 1520 mm track gauge

Dimensions in millimetres

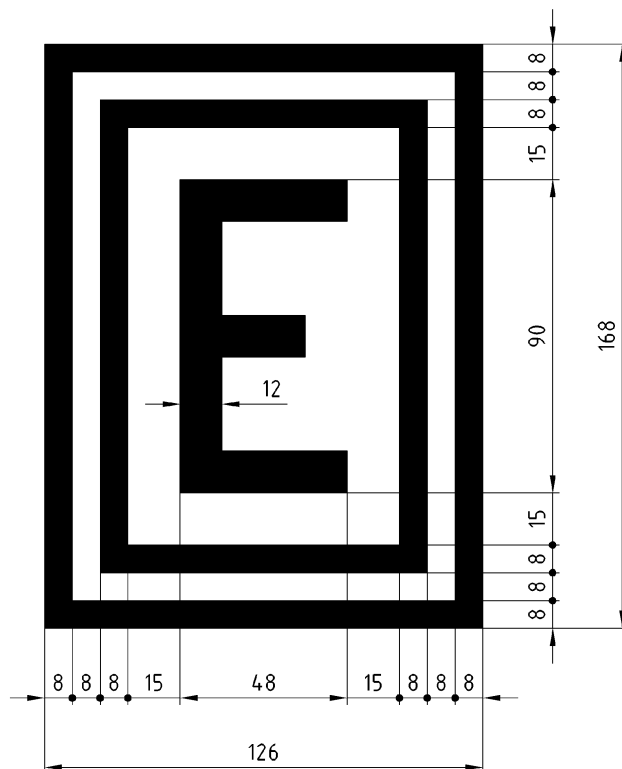


Figure 23b — Finland - 1524 mm track gauge

Dimensions in millimetres

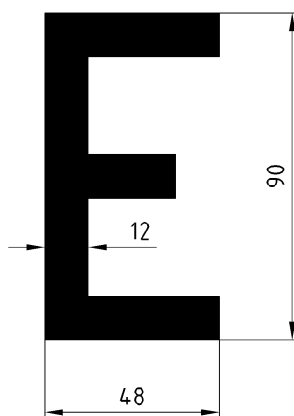


Figure 23c — Spain, Portugal - 1668 mm track gauge

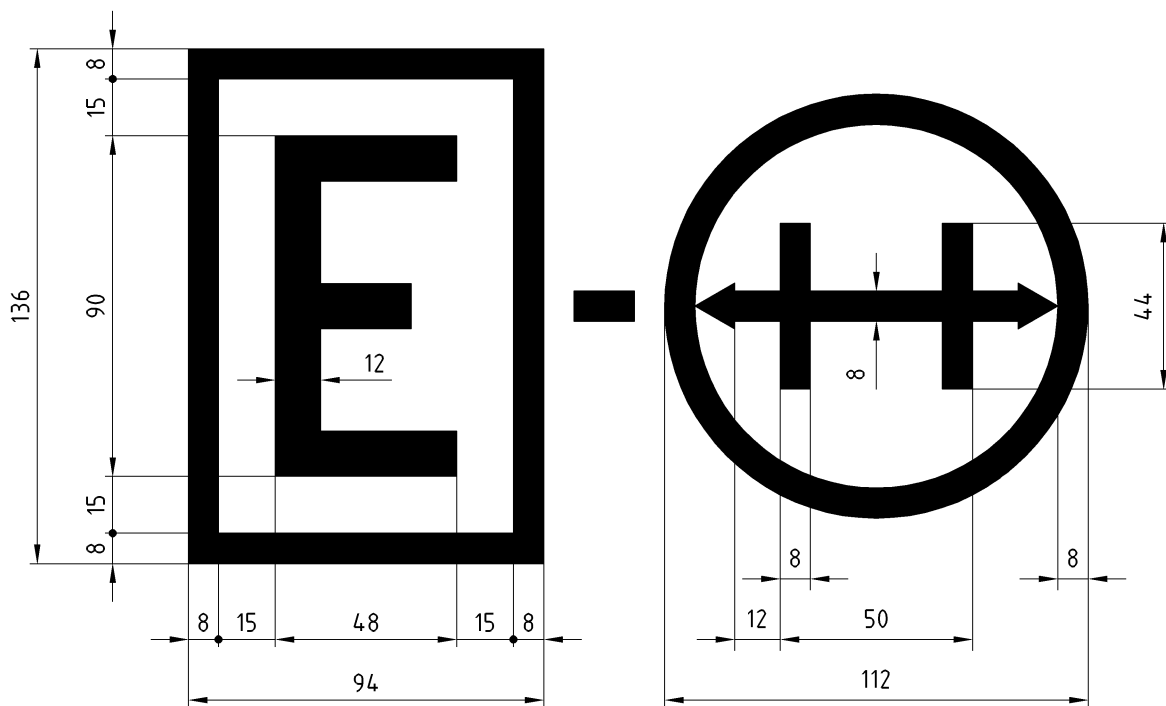
Position: On the right side on each sidewall or solebar
Meaning: Markings for wagons built for running between networks with different track gauges

Figure 23

4.5.8 Wagons with gauge changing wheelsets

4.5.8.1 Markings on the wagon body

Dimensions in millimetres



Position: On the right of each side wall or solebar.

Meaning: For wagons which are suitable for running between networks with different track gauges and fitted with automatic gauge changeover facilities. Wagons fitted with this type of running gear shall carry the appropriate combination of the markings shown in 4.5.7 and 4.5.8

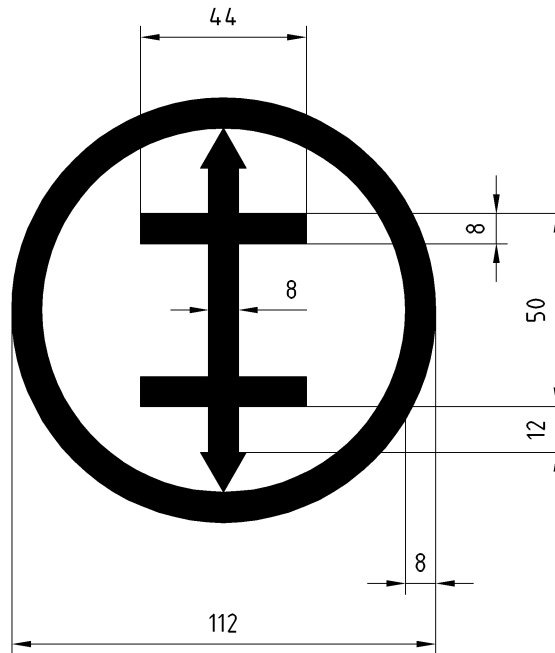
NOTE When changing axles of this type, the date (month and year) of the last axlebox overhaul should be marked, along with the VKM of the wagon keeper on the outside of each axle-box in white paint and clearly visible. Exchangeable bogies are to be fitted with a special overhaul plate.

Figure 24 — Example of combination

4.5.8.2 Markings on the running gear

4.5.8.2.1 Running gear with automatic gauge changeover capability between 1435 mm and 1668 mm track gauges

Dimensions in millimetres



Position: On the corresponding bogie frames or axle guard on 2 axle wagons

Meaning: This marking is carried by wagons that have running gear fitted with gauge adjustable axles with a nominal gauge of 1435 mm or 1668 mm.

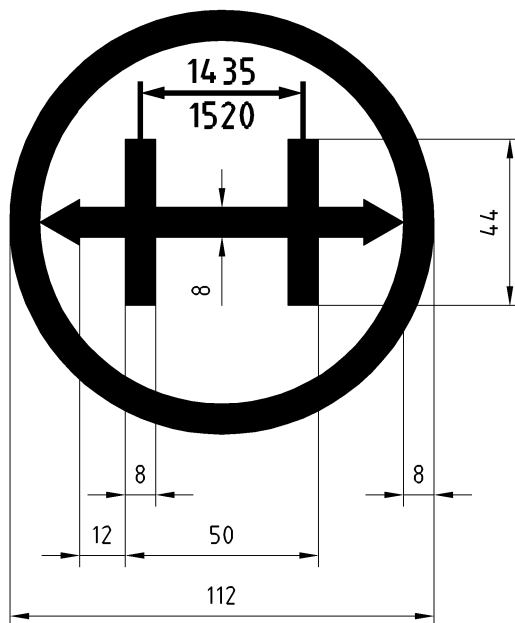
The provisions of 4.5.8.1 apply in principle.

Figure 25

4.5.8.2.2 Running gear with automatic gauge changeover capability between 1435 mm and 1520 mm track gauges

4.5.8.2.2.1 Running gear with nominal gauge 1435 mm

Dimensions in millimetres



Position: On the corresponding bogie frames or axle guard on 2 axle wagons

Meaning: This marking is carried by wagons that have running gear fitted with gauge-adjustable axles with a nominal gauge of 1435 mm.

The provisions of 4.5.8.1 apply in principle.

Figure 26