BRITISH STANDARD

BS EN
452:1996

Swap bodies — Swap bodies of Class A — Dimensions and general requirements

The European Standard EN 452:1995 has the status of a British Standard

ICS 55.180.10

UDC 621.869.888:62-777

Committees responsible

The preparation of this British Standard was entrusted to Technical Committee PKM/18, Freight containers, upon which the following bodies were represented:

Associated Offices Technical Committee
British Industrial Truck Association
British International Freight Association
British Railways Board
Chamber of Shipping
Department of Transport (Transport Industries)
Federation of the Electronics Industry
Health and Safety Executive
Institute of Logistics
Lloyds Register of Shipping
Ports' Safety Organization
Road Haulage Association Ltd.
Shipowners Refrigerated Cargo Research Association
Society of Motor Manufacturers and Traders Ltd.

The following body was also represented in the drafting of the standard, through subcommittees and panels:

Department of Transport

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board, was published under the authority of the Standards Board and comes into effect on 15 April 1996

The following BSI references relate to the work on this standard:
Committee reference PKM/18
Draft for comment 91/72693 DC

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Amd. No.	Date	Comments

Contents

National foreword

This British Standard has been prepared by Technical Committee PKM/18 and is the English language version of EN 452:1995 *Swap bodies — Swap bodies of Class A — Dimensions and general requirements,* published by the European Committee for Standardization (CEN).

EN 452 was produced as a result of international discussion in which the United Kingdom took an active part.

Cross-references

Publication referred to	Corresponding British Standard
EN 283:1991	BS EN 283:1991 *Swap bodies — Testing*
	BS 3951 *Freight containers* Part 1 *General*
ISO 1161:1984	Section 1.2:1985 *Specification for corner fittings for series 1 freight containers*
ISO 6346:1984	Section 1.6:1985 *Specification for coding, identification and marking*
ISO 1496-1:1990	Part 2 *Specification and testing of series 1 freight containers* Section 2.1:1991 *General cargo containers for general purposes*

There are no British Standards corresponding to the UIC Leaflets 592-4:1985 and 596-6:1986, but these leaflets can be obtained from:

UIC, 16 rue Jean Rey, F-75015 Paris.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 452

May 1995

ICS 55.180.10

Descriptors: Rail transport, road transport, freight transport, freight containers, mobile equipment, dimensions, specifications, marking

English version

Swap bodies — Swap bodies of Class A — Dimensions and general requirements

Caisses mobiles — Caisses mobiles de la classe A — Dimensions et spécifications générales

Wechselbehälter — Wechselbehälter der Klasse A — Masse und allgemeine Anforderungen

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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.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN 452:1995 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 119, Swap bodies for combined goods transport road/rail, of which the secretariat 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 November 1995, and conflicting national standards shall be withdrawn at the latest by November 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Contents

1 Scope

This European Standard specifies the dimensions and basic requirements for swap bodies of class A, which are designed as totally enclosed types e.g. box types, or as open types e.g. platform without or with cover/stake.

These swap bodies are suitable for international exchange and for conveyance by road and rail including interchange between these forms of transport.

NOTE Class A means that all swap bodies having this designation are equipped with bottom fittings positioned according to the specification for 1A (40′) ISO-Containers.

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.

EN 283:1991, *Swap bodies — Testing.*

ISO 1161:1984, *Series 1 Freight containers — Corner fittings — Specification.*

ISO 1496-1:1984, *Series 1 Freight containers — Specification and testing — Part 1: General cargo containers for general purposes.*

ISO 6346:1984, *Freight containers — coding, identification and marking.*

UIC 592-4:1985, *Swap bodies which can be handled by grabs — Technical conditions*[1)].

UIC 596-6:1991, *Traffic of road vehicles on wagons — Technical organization — conditions for coding load units in combined transport and combined transport lines*[1)].

3 Dimensions and ratings

The external dimensions, tolerances and rating (R) of the general cargo swap bodies of class A shall be as given in Figure 1 and Table 1. No part of the swap body shall project beyond the overall external dimensions.

4 General requirements

The strength requirements for swap bodies are given in EN 283. The swap bodies as complete units shall be capable of withstanding the loads and loadings specified in EN 283.

5 Mandatory features

5.1 General

General cargo swap bodies of class A shall be equipped with the following features:

— bottom fittings (see **5.2** and **5.3**)

— grappler arm lifting areas (see **5.4.1**)

— side bottom lifting apertures (see **5.4.2**)

— load transfer areas (see **5.5**).

5.2 Bottom fittings

Swap bodies shall be equipped with four bottom fittings, located in a horizontal plane and presenting an oblong aperture for connection to the trailer or wagon.

The aperture of the fittings shall comply with ISO 1161; the basic dimensions are specified in Figure 2.

No part of the swap body shall protrude beyond the base reference plane of the swap body.

NOTE The base reference plane of the swap body is the plane defined by the lower surface of the fittings.

5.3 Additional fittings

5.3.1 *Dimensions*

Two circular or oblong apertures located on the front shall be provided. Location and dimensions shall be as shown in Figure 3 and Figure 4.

5.3.2 *Flat bottom swap body*

(See **A.1**).

5.3.3 *Base structure with longitudinal tunnel over the whole length*

(See **A.2**).

NOTE Swap bodies of this type cannot be transported on a container-carrying chassis designed for transporting 40′ containers only.

5.3.4 *Flat bottom swap body with front for semi-trailer with gooseneck tunnel*

In accordance with the requirements of Annex E of ISO 1496-1:1984.

[1)] Available from: UIC, 16 rue Jean Rey, F-75015 Paris.

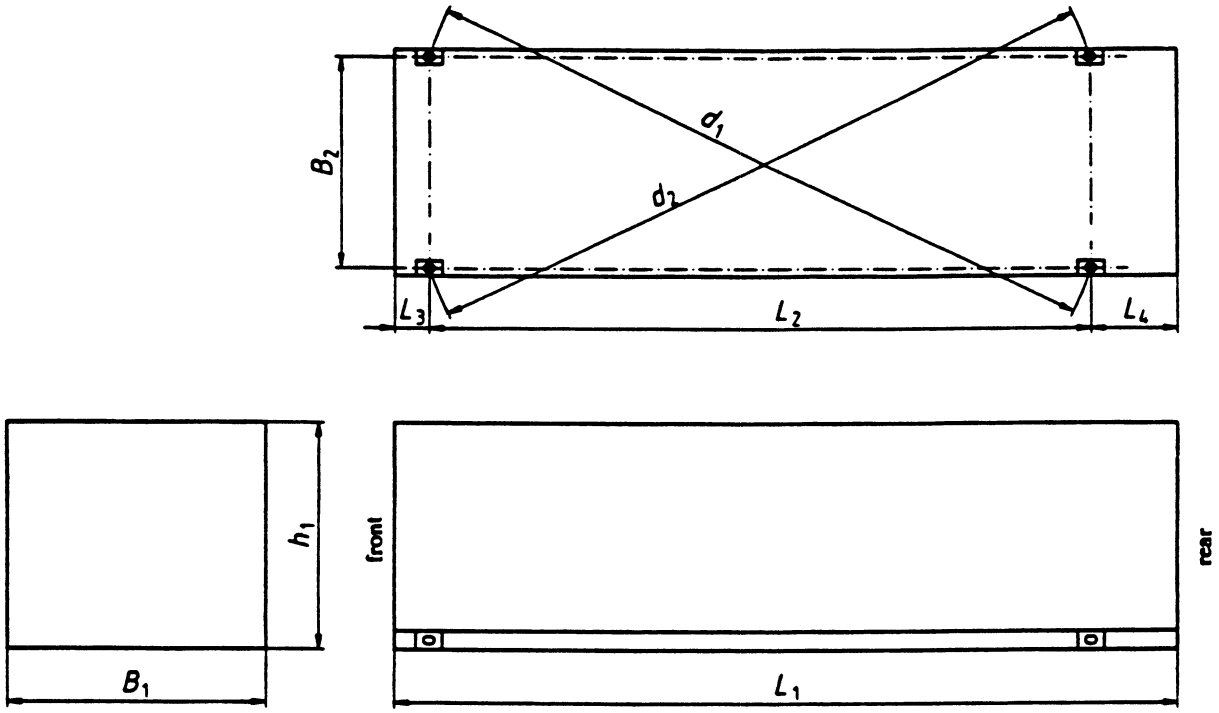


Figure 1 — Basic dimensions

Table 1 — Dimensions and rating

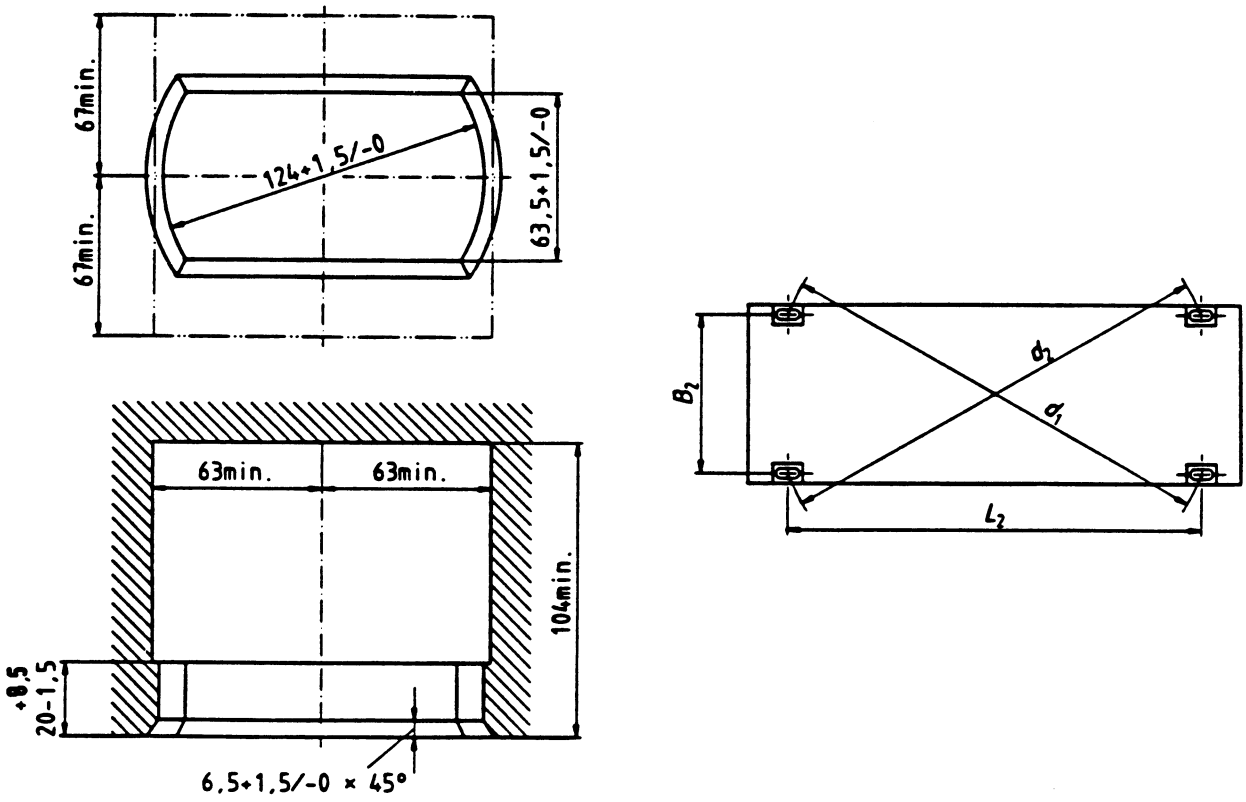
Dimensions in millimetres

Swap body designation	L_1	L_2	L_3	L_4	h_1[a]	B_1[b]	B_2	$d_1 - d_2$ $d_2 - d_1$	R[c]
A 1219	$12\,192\,^{0}_{-20}$	11 985 ± 4	103,5	103,5	2 670	2 500	2 259 ± 3	19 max.	34 t
A 1250	$12\,500\,^{0}_{-20}$		257,5	257,5					
A 1360	$13\,600\,^{0}_{-20}$		900	715					

[a] The body height of 2 670 mm assures transportation without hindrance on the main railway lines of continental Europe. It also takes into account the height limitation of 4 m for road vehicles according to European Community directive 85/3 EEC. For larger heights the International Union of Railways code for line categories UIC 596-6 shall be taken into consideration.

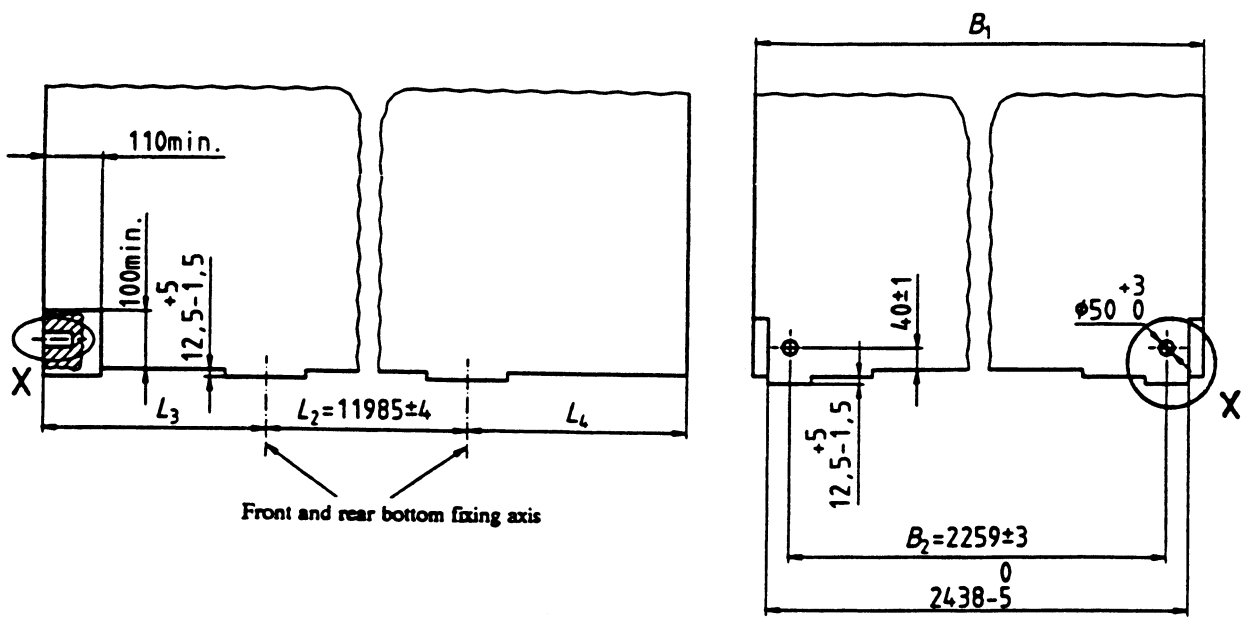
[b] A maximum width of 2 600 mm is permitted for certain thermal bodies according to Council Directive No. 88/218/EEC. The body width of 2 500 mm assures transportation without hindrance throughout Europe.
For larger widths the national road regulations and International Union of Railways code UIC 596-6 shall be taken into consideration.

[c] Lower gross masses may be agreed.



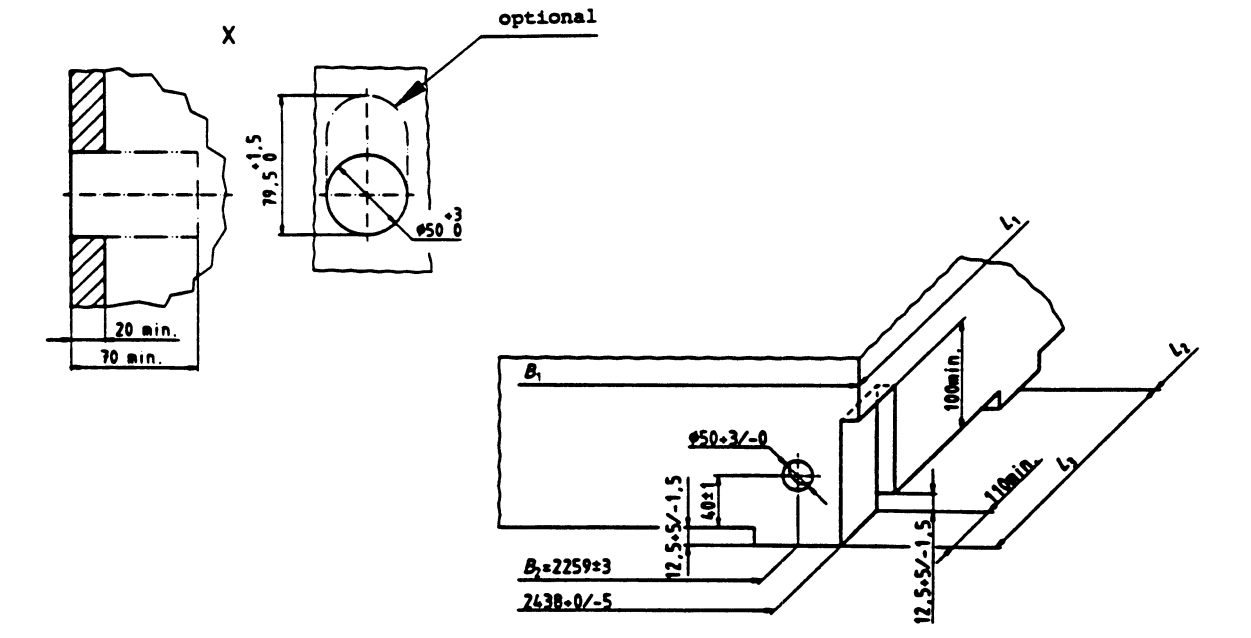
Dimensions in millimetres

Figure 2 — Basic dimensions of fittings



Dimensions in millimetres

Figure 3a) — Additional front fittings



Dimensions in millimetres

Figure 3b) — Details of Figure 3a)

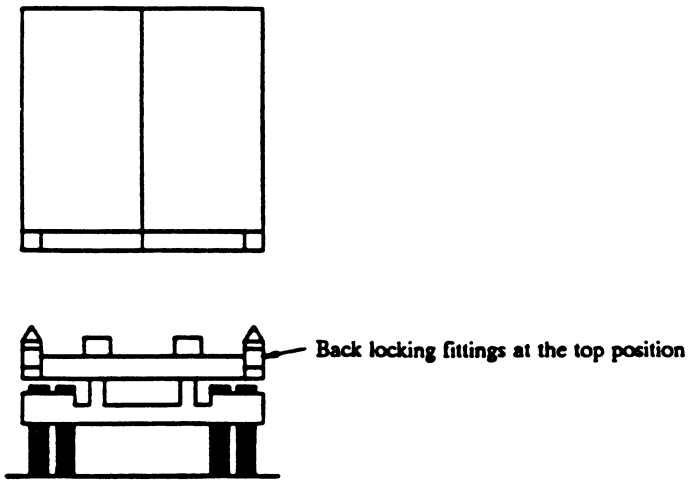
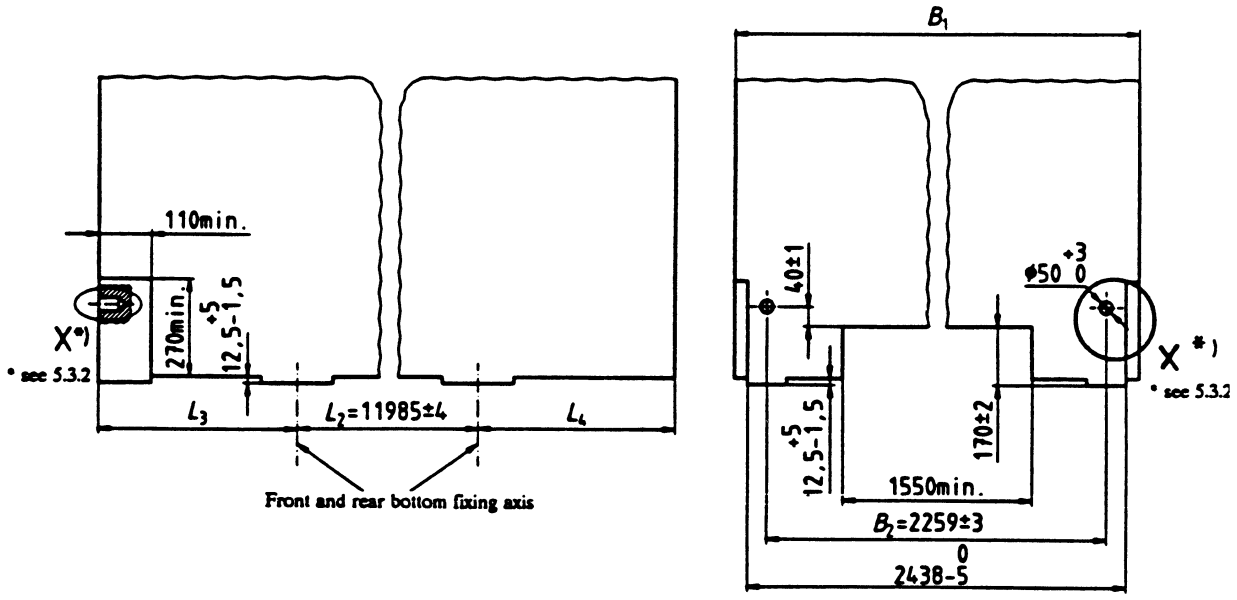
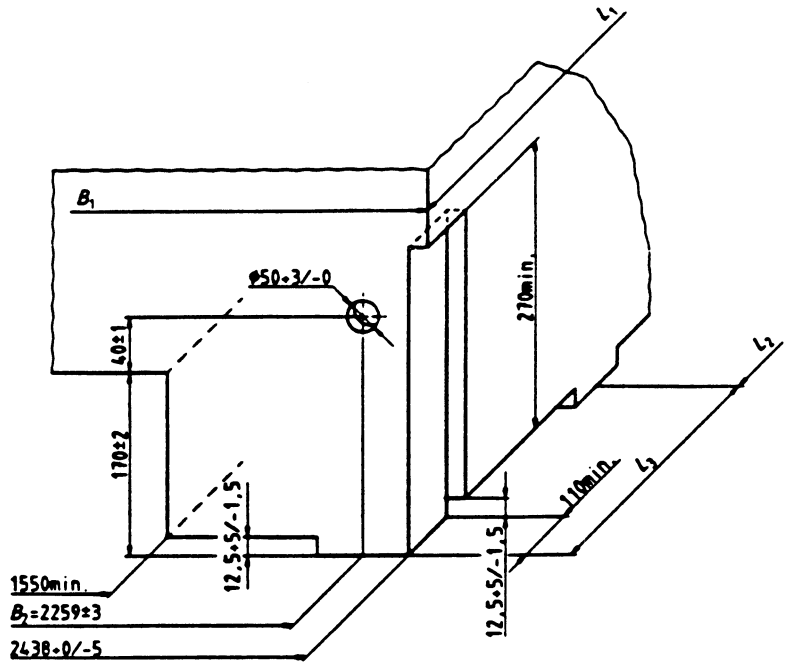


Figure 3c) — Position of back locking fittings on chassis when carrying flat bottom swap bodies



Dimensions in millimetres

Figure 4a) — Additional front fittings



Dimensions in millimetres

Figure 4b) — Detail of Figure 4a)

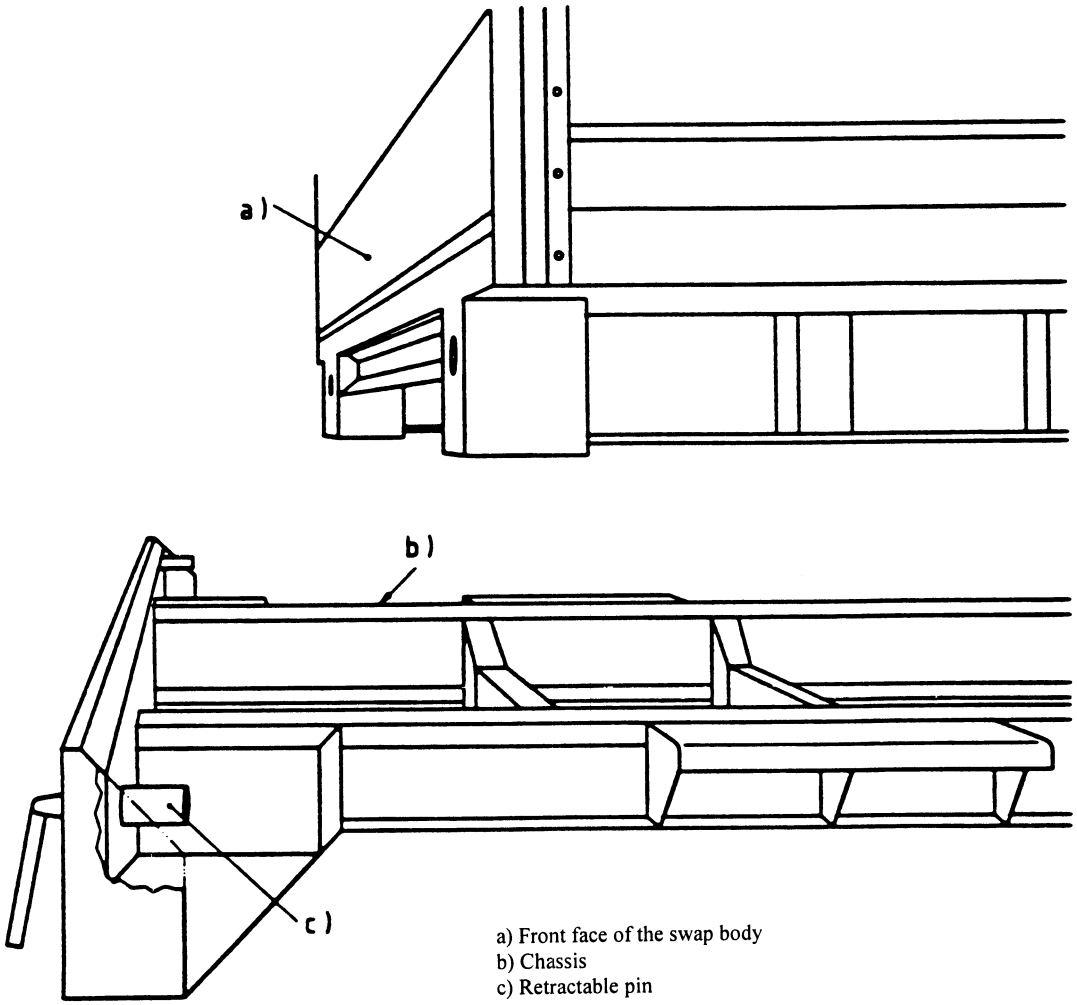


Figure 4c) — Longitudinal tunnel swap body before its securing on chassis

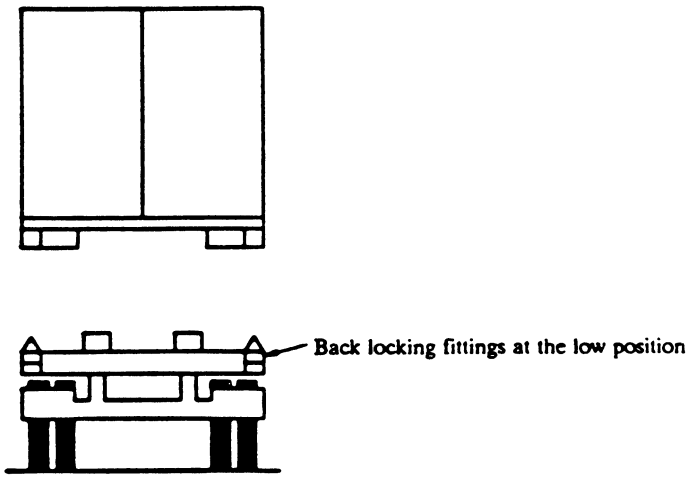


Figure 4d) — Position of back locking fittings on chassis when carrying tunnel type swap bodies

5.4 Handling devices

5.4.1 *Grappler arm lifting areas*

Swap bodies shall be equipped with four grappler arm lifting areas. Location and dimensions of grappler arm lifting areas shall be as shown in Figure 5 and Figure 6. They shall be designed to prevent grappler arms from sliding from the lifting area during longitudinal movement of the swap body relative to the lifting device.

NOTE In cases where it is difficult to manufacture a swap body of this design, the centre of the fitting groove may be positioned 2 438 mm ± 100 mm from the centre of gravity, *G*, of the swap body, bearing its maximum load uniformly distributed.

5.4.2 *Handling by means of sling*

Swap bodies shall be equipped with four apertures for handling by means of slings. Dimensions and locations of the apertures shall be as shown in Figure 7a) and Figure 7b).

If additional apertures for handling by means of slings are provided, the dimensions of the additional apertures shall also comply with Figure 7b).

Additional lateral apertures which are not to be used for the sling should be partially blocked so that they can only be used for visual inspection of locking.

5.5 Load transfer areas

Load transfer areas shall comply with Annex B of ISO 1496-1 for the part relative to the 40′ containers.

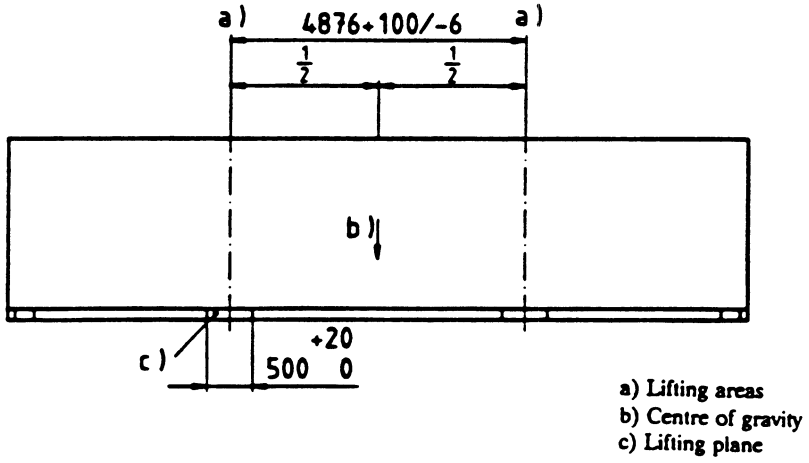
The undersides of the load transfer areas, including those of the crosspieces connecting the bottom fittings, shall be in a plane situated at $12{,}5\,^{+5}_{-1{,}5}$ mm above the base plane of the swap bodies (undersides of the bottom fittings) for the flat-bottomed swap bodies, and at 170 mm ± 2 mm for the longitudinal tunnel swap body.

6 Intermediate support (optional)

In cases where the swap body needs an additional support during transportation by rail, the additional support shall be as shown in Figure 8.

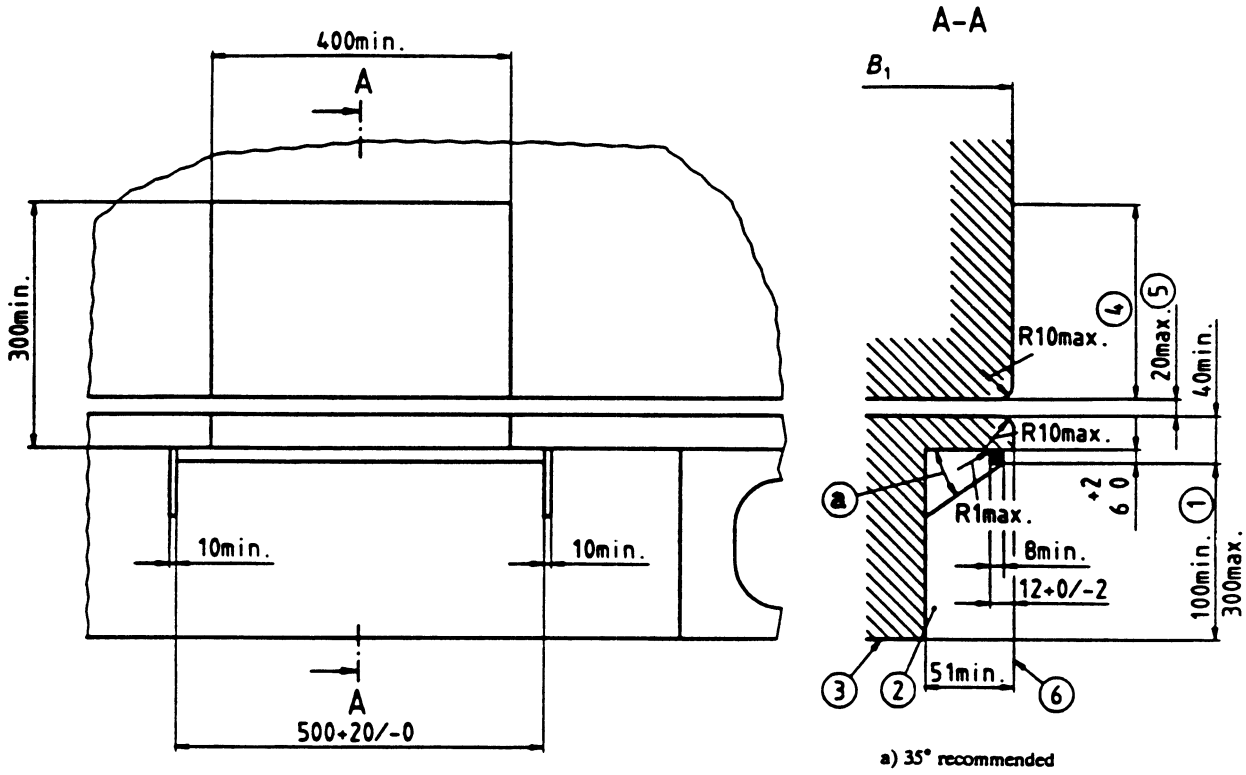
7 Marking

The swap bodies shall be marked in accordance with the UIC 596-6 sheet (piggyback plate). Additionally they may be marked in accordance with ISO 6346.



Dimensions in millimetres

Figure 5 — Location of grappler arm lifting areas



Dimensions in millimetres

① It is recommended to make this dimension larger than 100 mm. The larger the free height below the safety lip, the easier it will be to locate the grappler arms in the lifting position.

② Rigid or mobile parts shall not protrude in this area.

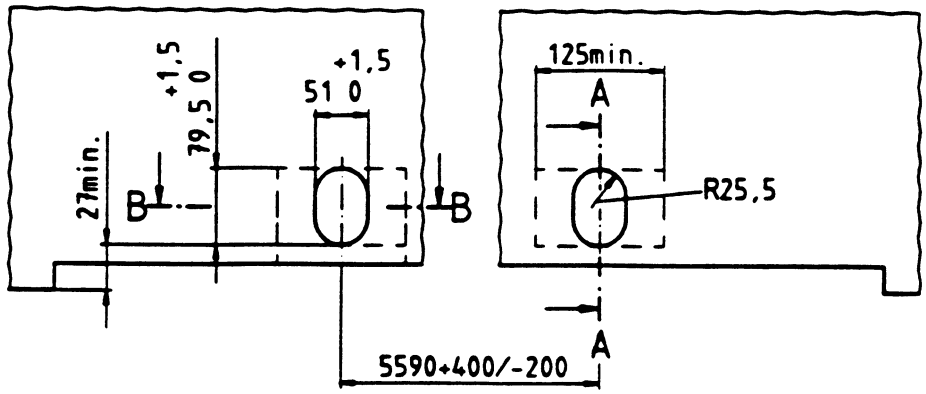
③ Plane of the bottom surfaces of the fittings.

④ The use of wear-resistant plates is recommended over the length of the grappler arm lifting area to afford protection of the side walls. Such plates shall not protrude beyond the outer plane of the grappler arm position.

⑤ The permissible clearance between the grappler arm lifting area and the bottom edge of the side wall shall be 20 mm maximum.

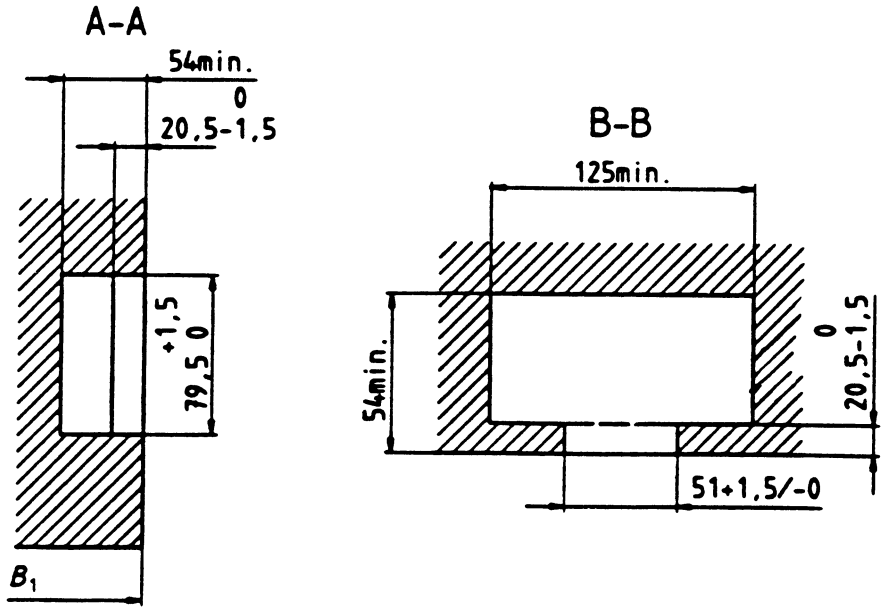
⑥ Outer plane of the grappler arm lifting area.

Figure 6 — Grappler arm lifting area



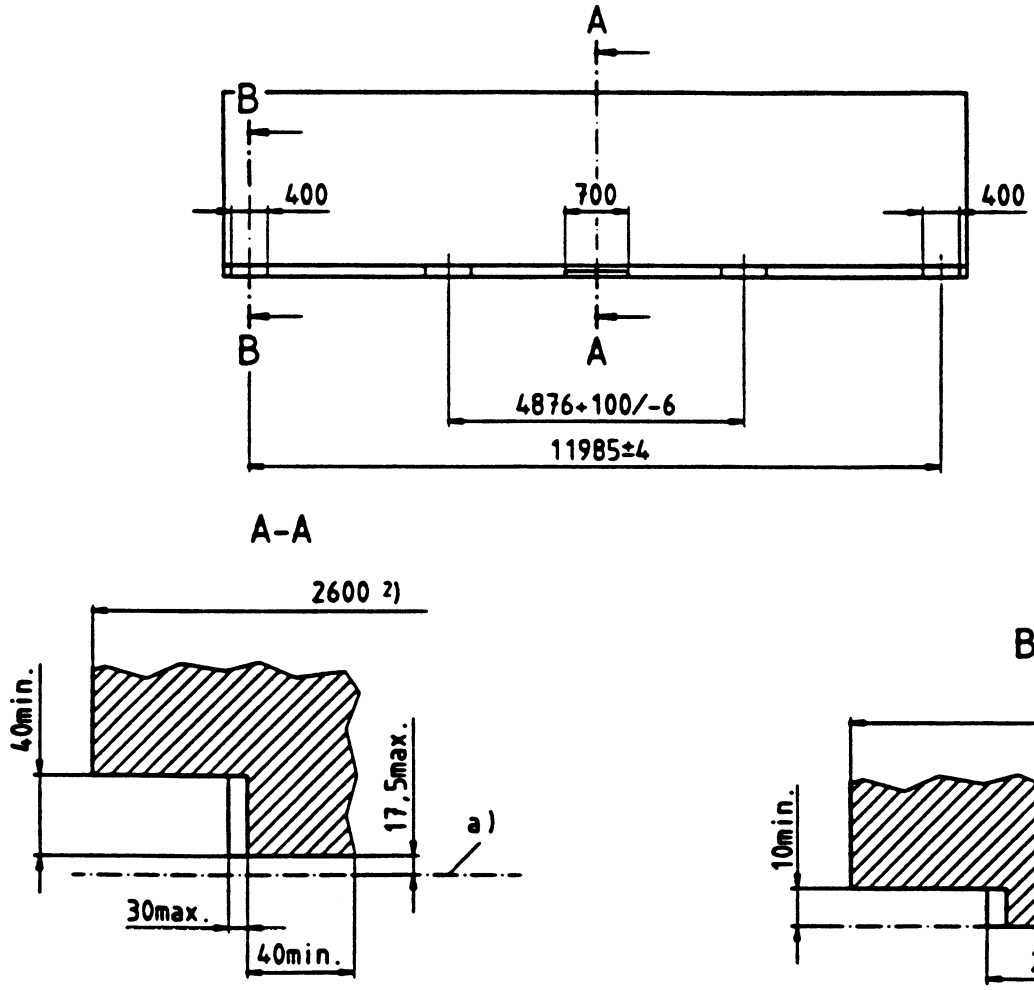
Dimensions in millimetres

Figure 7a) — Side apertures



Dimensions in millimetres

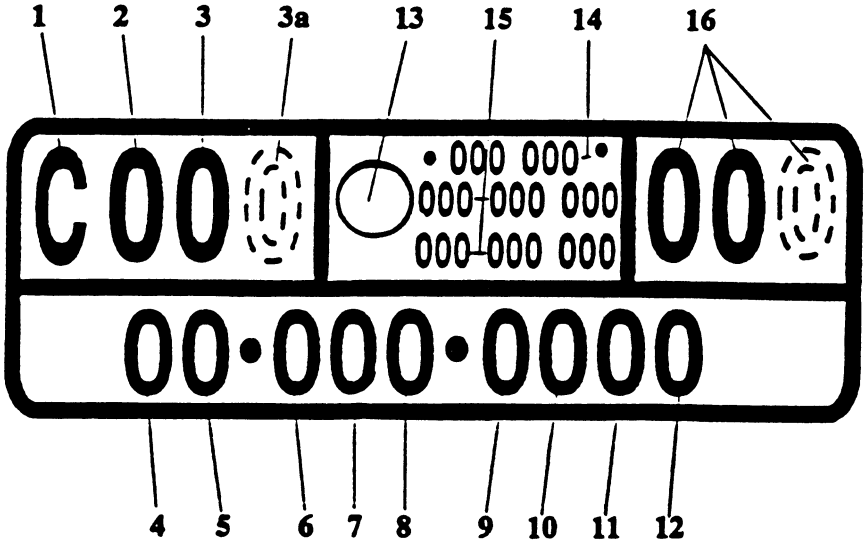
Figure 7b) — Side aperture details



a) Support plane for bottom fittings
2) See cross-reference 2) of table 1 paragraph 3

Dimensions in millimetres

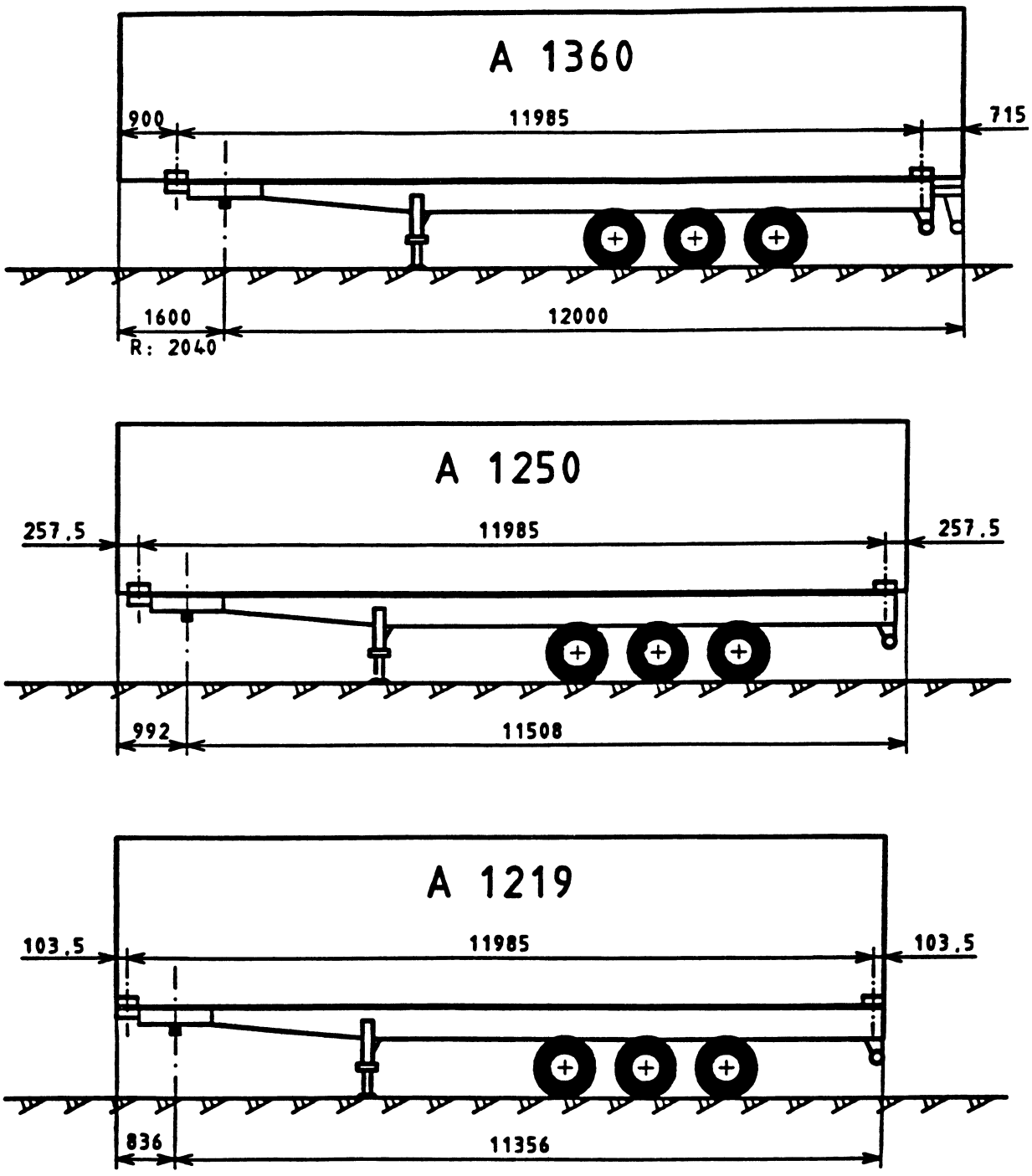
Figure 8 — Intermediate support



1	Wagon compatibility code	Technical numbers
2 3	For swap bodies having an external width of 2,50 m maximum	
2 3 3a	For swap bodies having an external width of more than 2,50 m and 2,60 m maximum	
4 5	Nationality No. of the Combined Transport Company	Registration number
6 7 8	Code No. of the Combined Transport Undertaking within the National Company	
9 10 11 12	Load Unit No. in the Combined Transport Undertaking	
13	Approval stamp	
14	Approval No. in the railway network (not obligatory)	
15	Serial No. (include compulsorily the digits from the last to the first)	
16	Code for swap body length (according to UIC 592-4)	

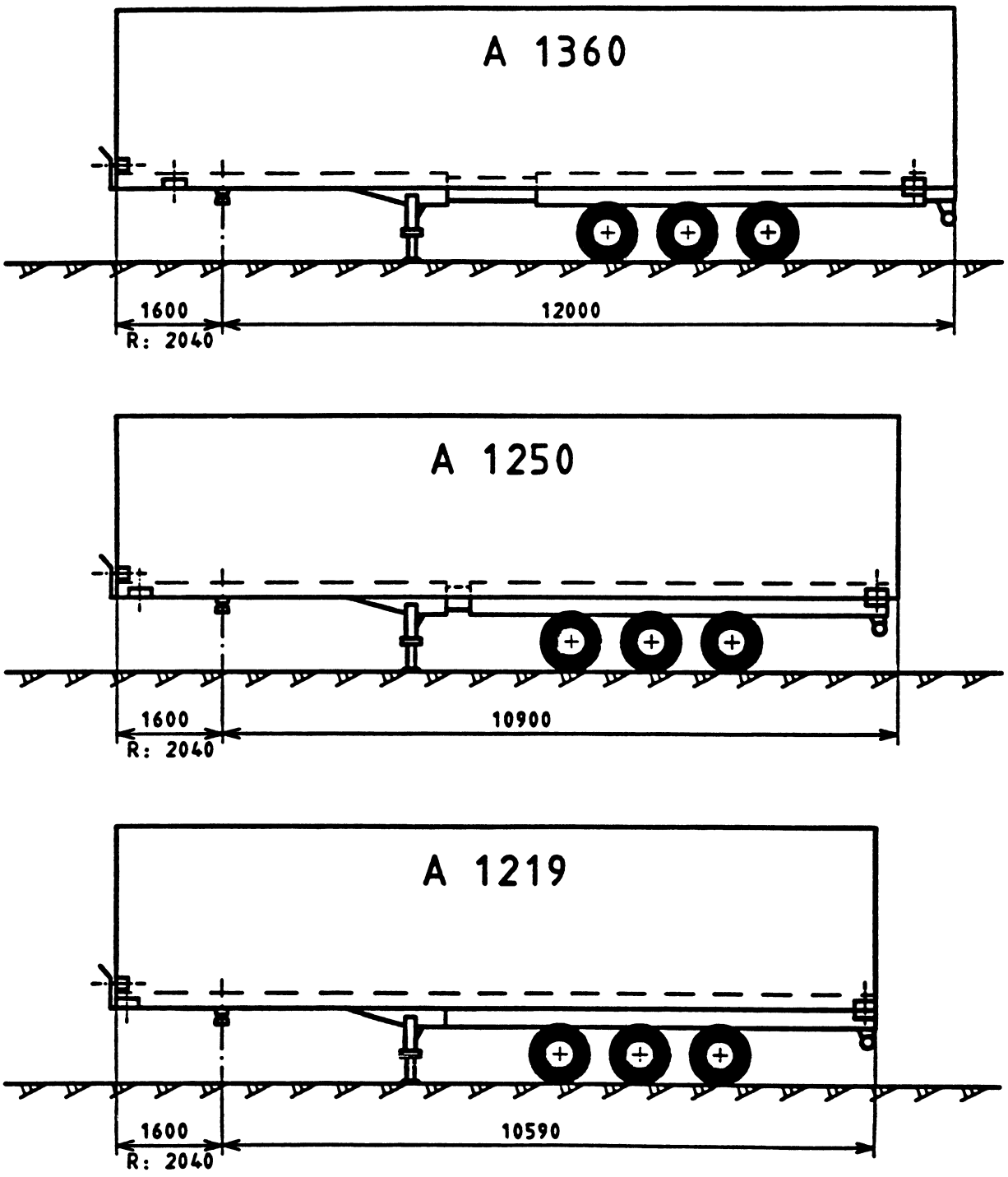
Figure 9 — UIC plate

Annex A (informative)
Chassis examples for class A swap bodies having a width of 2 500 mm



Dimensions in millimetres

A.1 Vertical pin-type chassis for flat-bottomed swap bodies only



Dimensions in millimetres

A.2 Front horizontal pin-type chassis required in the case of longitudinal tunnel swap bodies and possibly for flat-bottomed swap bodies

List of references

See national foreword.

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