

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Lead-acid starter batteries –
Part 4: Dimensions of batteries for heavy vehicles
STANDARD PREVIEW
(standards.iteh.ai)

Batteries d'accumulateurs de démarrage au plomb –
Partie 4: Dimensions des batteries pour poids lourds
<https://standards.iteh.ai/catalog/standards/sist/71bd442d-a9fb-43e2-bf7d-4b6b0319ef0a/iec-60095-4-2008>



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LEAD-ACID STARTER BATTERIES –

Part 4: Dimensions of batteries for heavy vehicles

FOREWORD

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International Standard IEC 60095-4 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This second edition cancels and replaces the first edition published in 1989 and its Amendment 1 (1996). It constitutes a technical revision. The main technical changes in this new edition relate to the reduction of the number of European battery types, the standardization of dimensions and locations of battery terminals and the updating and inclusion in the standard of Amendment 1(1996), related to North America & East Asian battery types.

The text of this standard is based on the following documents:

FDIS	Report on voting
21/667/FDIS	21/669/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 60095 series, published under the general title *Lead-acid starter batteries*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
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LEAD-ACID STARTER BATTERIES –

Part 4: Dimensions of batteries for heavy vehicles

1 Scope and object

This part of IEC 60095 is applicable to lead-acid batteries used for starting, lighting and ignition of heavy trucks, commercial vehicles, busses and agricultural trucks.

The object of the present standard is to specify global requirements of the main dimensions of starter batteries for Europe, North America and East Asia.

This International Standard comprises 12 types of "preferred types" of batteries.

The standard specifies dimensions of 4 types of batteries each for the Europe (types A, B, C and D2), North America (4D, 8D, 31T, 31A) and East Asia (E41, F51, G51, H52) regions.

For future new developments of heavy vehicles it is strongly recommended to use only batteries from this standard.

Several other types of batteries exist under the standards of national or regional organisations. They are not included in this International Standard.

2 Normative references

[IEC 60095-4:2008](https://standards.iteh.ai/catalog/standards/sist/7fbd442d-a9fb-43e2-bf7d-4b6b0319ef0a/iec-60095-4-2008)

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The following referenced documents are indispensable for the application 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.

IEC 60050-482:2004, *International Electrotechnical Vocabulary – Part 482: Primary and secondary cells and batteries*

IEC 60095-1, *Lead-acid starter batteries – Part 1: General requirements and methods of test*

IEC 60417, *Graphical symbols for use on equipment*

ISO 1043-1, *Plastics – Symbols and abbreviated terms – Part 1: Basic polymers and their special characteristics*

ISO 7000, *Graphical symbols for use on equipment – Index and synopsis*

3 Terms and definitions

For the purposes of this document, the definitions contained in IEC 60050-482 apply.

4 Common features

4.1 Labelling

The batteries shall be marked in accordance with IEC 60095-1.

4.2 Marking of polarity

The batteries shall carry the marking of polarity, at least of the positive terminal.

4.2.1 Marking of positive terminals

This marking shall take the form of the symbol '+' either on the upper surface of the positive terminal or on the lid adjacent to the positive terminal.

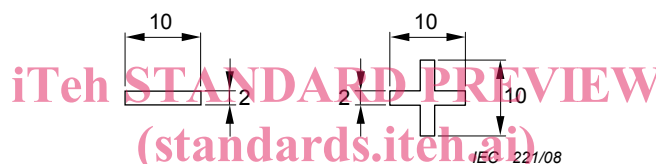
4.2.2 Marking of negative terminals

If the negative polarity is also marked, the marking shall take the form of the symbol '-', either on the upper surface of the negative terminal or on the lid adjacent to the negative terminal.

NOTE As an alternative, the wording "POS" and "NEG" is permitted for the North American market only.

4.2.3 Design and dimensions of marking

The symbols used for marking the terminals shall be in accordance with symbol IEC 60417-5005 (2002-10) for the positive and symbol IEC 60417-5006 (2002-10) for the negative polarity. Suggested dimensions are shown in Figure 1.



Permissible are 0,3 mm – 0,5 mm, indented or relief.
<https://standards.iteh.ai/catalog/standards/sist/7fbd442d-a9fb-43e2-bf7d-4b6b0319e70a/iec-60095-4-2008>
Figure 1 – Marking of polarity

4.3 Marking of plastic material

Batteries are universally marked to identify the plastic material. Various marking schemes exist around the world in line with local regulations. However all schemes identify the plastic material by embossing or indenting it into the battery housing. The material content shall be in accordance with ISO 1043-1.

"PP/PE" or "PP" is used as the marking for types of plastic materials.

Some materials also include the recycling symbol (ISO 7000-1135) as shown in Figure 2.



Figure 2 – Marking of polypropylene

Producers are encouraged to consult the regulations of the target market.

It is permissible to use the number coding 7 or 07 for PP/PE and the addition of "other" to cover additives to the plastic material.

4.4 Dimensions and design

All dimensions are in millimetres. Details of the design that are not indicated in the generic drawings have to be chosen appropriately. The illustrations in this standard, especially those of the design of the lids, handles, ribs, ledges, vent caps and their locations are not mandatory.

5 European types

5.1 General

This applies to the series of lead-acid starter batteries for heavy trucks, widely and predominantly being used in Europe. In the text which follows, the series will be designated "EU". The EU series comprises four types.

5.1.1 Fastening

All types are intended for fastening by the upper part of the battery only.

This fastening shall be effected at a level defined by the dimension " h_1 " in the figures. The configuration shall permit the fitting of an angle-iron frame, both legs of which are 20 mm wide, for the major part of the lid's four sides.

5.1.2 Terminal configurations, polarity

The terminal configuration and polarity shall be as shown in Figures 4 and 5.

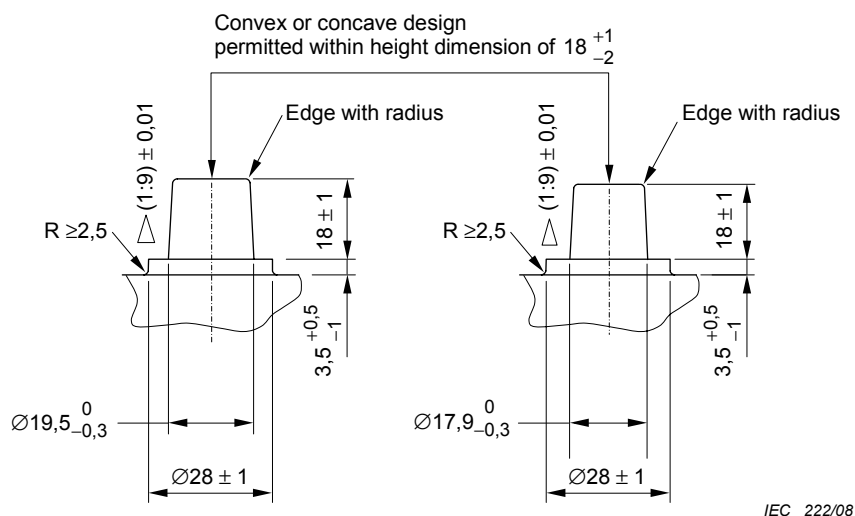
5.1.3 Terminal dimensions

The dimensions are shown in Figure 3.

5.2 Dimensions

The main dimensions are represented by symbols, as indicated in Figures 4 and 5. The dimensions according to the symbols shall be in accordance with Table 1.

Dimensions in millimetres



IEC 222/08

Figure 3 – Dimensions of positive and negative terminals

The dimensions describing the base of the terminal are given as a recommendation and are not mandatory.

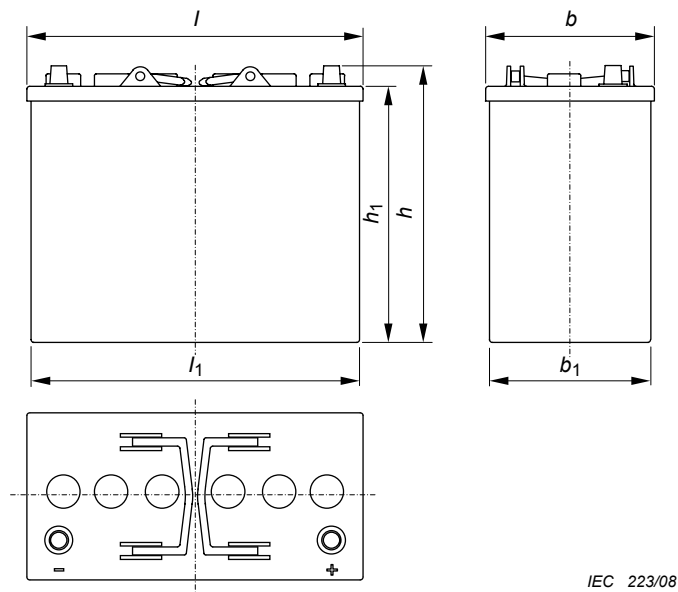
Table 1 – EU series – Dimensions of batteries

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Dimensions in millimetres

Type	Length				Width			Height	
	l	l_1	l_2	l_3	b	b_1	b_2	h	h_1
D2	349^{+0}_{-5}	344^{+0}_{-8}	--	--	175^{+0}_{-4}	162^{+0}_{-4}	--	235^{+0}_{-4}	213^{+0}_{-4}
A	513^{+0}_{-4}	475^{+0}_{-3}	482^{+2}_{-2}	202^{+2}_{-2}	188^{+2}_{-2}	178^{+0}_{-2}	86^{+1}_{-1}	223 max	195^{+0}_{-3}
B	513^{+0}_{-4}	475^{+0}_{-3}	482^{+2}_{-2}	202^{+2}_{-2}	222^{+2}_{-2}	210^{+0}_{-2}	102^{+1}_{-1}	223 max	195^{+0}_{-3}
C	518^{+0}_{-8}	475^{+0}_{-3}	482^{+4}_{-2}	202^{+2}_{-2}	274^{+2}_{-2}	265^{+0}_{-2}	130^{+1}_{-1}	242 max	216^{+0}_{-3}

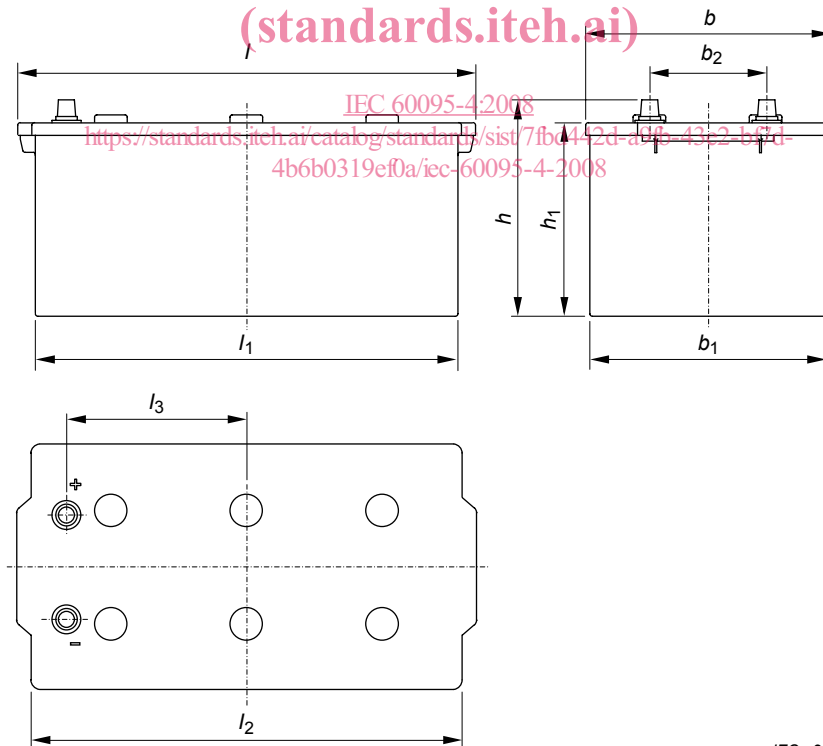
NOTE The length, width and height symbols refer to Figures 4 and 5.



IEC 223/08

Figure 4 – EU series – Type D2

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IEC 224/08

Figure 5 – EU series – Types A,B,C

6 North American types

6.1 General

This applies to the series of lead-acid starter batteries for heavy trucks, widely and predominantly being used in North America. In the text which follows, the series will be designated “AM”. The AM series comprises four types.

6.1.1 Fastening

All of these batteries are intended for fastening to the vehicles by means of a hold-down device engaging with the upper part of the battery (for example a metal frame), connected to the support platform.

6.1.2 Terminal configuration, polarity

The types of the AM series have terminal configurations as shown in the following battery drawings (Figures 6, 8, 9 and 11). The polarity shall be as shown in the figures.

6.1.3 Terminal dimensions

The dimensions are shown in Figures 7 and 10.

6.2 Dimensions

The main dimensions are represented by symbols, as indicated in Figures 6, 8, 9 and 11. The dimensions according to the symbols shall be in accordance with Table 2.

Table 2 – AM series – Dimensions of batteries

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Dimensions in millimetres

Type	Length	Width	Height	
	<i>l</i>	<i>b</i>	<i>h</i> ₁	<i>h</i>
4D	527 ⁺⁰ ₋₄	222 ⁺⁰ ₋₄	230 ⁺⁰ ₋₄	250 ⁺⁰ ₋₄
8D	527 ⁺⁰ ₋₄	283 ⁺⁰ ₋₄	230 ⁺⁰ ₋₄	250 ⁺⁰ ₋₄
31T	330 ⁺⁰ ₋₄	173 ⁺⁰ ₋₄	219 ⁺⁰ ₋₄	240 ⁺⁰ ₋₄
31A	330 ⁺⁰ ₋₄	173 ⁺⁰ ₋₄	219 ⁺⁰ ₋₄	240 ⁺⁰ ₋₄