

Drawbars for caravans and light trailers —

Part 2: Specification for the design of aluminium drawbars and chassis

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Committees responsible for this British Standard

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- Association of Trailer Manufacturers
- British Compressed Air Society
- Caravan Club
- Department of Transport
- National Caravan Council Limited
- Society of Motor Manufacturers and Traders Ltd.
- Coopted members

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Foreword

This Part of BS AU 210 was prepared under the direction of the Automobile Standards Policy Committee. Since the drawbar is only one part of the chassis of a caravan or light trailer, and as the chassis can be made of materials other than steel, or even be of composite construction, this Part of BS AU 210 aims to set out requirements for the design of aluminium chassis for caravans and light trailers. A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, 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.

1 Scope

This Part of BS AU 210 specifies:

- a) a procedure for determining the mechanical strength of drawbars for caravans and light trailers where the vertical static force on the coupling head is not less than 245 N and not greater than 735 N;
- b) requirements for the mechanical design of the chassis for caravans and light trailers.

This standard applies to aluminium chassis of caravans and light trailers provided they are not of welded construction. It also covers the aluminium elements of chassis of composite construction, again provided the aluminium parts have not been welded.

NOTE The method for calculation of the mechanical strength of steel drawbars for caravans and light trailers is covered in BS AU 210-1.

2 References

2.1 Normative references

This Part of BS AU 210 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS AU 210 only when incorporated in it by updating or revision.

2.2 Informative references

This Part of BS AU 210 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS AU 210, the definitions given in BS 8118 apply, together with the following.

3.1

chassis

the element, including the drawbar, between the axle assembly and the body of the caravan or light trailer

3.2

drawbar

that part of the chassis which enables the connection of the caravan or light trailer to the towing vehicle

4 Symbols

For the purposes of this Part of BS AU 210, the following symbols are used.

- l is the distance (in mm) from the vertical axis of the coupling device to the first point on the trailer frame (see Figure 1).
- l_x is the distance (in mm) from the vertical axis of the coupling device to the drawbar section corresponding to the maximum strain rate (see Figure 1).
- e is the distance (in mm) from the horizontal axis of the coupling device to the drawbar neutral axis at the first fixing point on the trailer frame (see Figure 1).
- e_x is the distance (in mm) from the horizontal axis of the coupling device to the drawbar neutral axis at the cross section corresponding to the maximum strain rate (see Figure 1).
- d is the maximum deflection (in mm) at the coupling device relative to the first fixing point (see Figure 1).
- P is the manufacturer's total mass (in kg) of the caravan or light trailer (see ISO 7237).
- D is the value determined by calculation for the longitudinal force (in N) occurring between the tractor vehicle and the trailer (see ISO 3853).
- E is the modulus of elasticity (in N/mm²); its value varies according to the alloy (see Table 1).
- I is the moment of inertia (in mm⁴) of the section.
- g is the acceleration due to gravity (in m/s²) (see ISO 3853).