

Specification for

Dimensional codes for passenger cars

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Foreword

This British Standard has been prepared, under the direction of the Automobile Standards Committee, to implement ISO 4131:1979 “*Road vehicles — Dimensional codes for passenger cars*” prepared by Technical Committee ISO/TC 23, Road vehicles, of the International Organization for Standardization (ISO).

All the dimensions in ISO 4131 are included in this British Standard, with the same or essentially similar definitions and, except where otherwise indicated, with the same codes less the prefix “ISO”, and are given in prominent bold type. Some other dimensions are also included with codes which are already in use in some major car-manufacturing countries.

Each code consists of a capital letter denoting the type of dimension (L for length; H for height; W for width; D for diameter; V for volume; L, H or W for an angle, according to whether it is dimensioned with respect to the zero X, Z or Y plane) and a number.

To enable the code for a particular dimension and the dimension to which a particular code applies to be traced, an alphabetical index of dimensions and an index of codes are provided.

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.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 20 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.

This British Standard, having been prepared under the direction of the Automobile Standards Committee, was published under the authority of the Executive Board and comes into effect on 31 July 1981

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1 Scope

This British Standard specifies the codes to be used for dimensional data relating to passenger cars (see 3.1) and their derivatives.

2 References

The following standards publications are referred to in this standard.

BS AU 173, *Definitions for a three-dimensional reference system and fiducial marks*.

ISO 1176, *Road vehicles — Weights — Vocabulary*.

ISO 3832, *Road vehicles — Luggage compartments of passenger cars — Method of measuring the reference volume*.

ISO 4131, *Road vehicles — Dimensional codes for passenger cars*.

3 Definitions

NOTE Throughout this British Standard, unless otherwise stated, the supporting surface is assumed to be horizontal, lengths and widths are measured in a horizontal plane, and heights are measured in a vertical plane.

For the purposes of this British Standard, the following general definitions and the particular definitions in clauses 5, 6 and 7 apply.

3.1

passenger car

a motor vehicle intended primarily for carrying persons and their goods and having a maximum of nine seating places including the driving seat

3.2 Loading conditions

3.2.1

design load

unless otherwise defined by the manufacturer, the kerb weight (including the spare wheel and any accessory equipment) plus 68 kg per passenger distributed as follows

Number of seating positions	Number of passengers	Distribution
2 and 3	2	2 in the front seats
4 and 5	3	2 in the front seats 1 in the back seats
6 and 7	4	2 in the front seats 2 in the extreme back seats
8 and 9	5	2 in the front seats 3 in the extreme back seats or, when the rear row of seats has only 2 seating positions, 2 in that row and 1 in the second row from the rear

3.2.2

kerb weight

the complete vehicle kerb weight as defined in ISO 1176

3.2.3

maximum weight

the maximum authorized total weight as defined in ISO 1176

3.3

zero X, Y and Z planes

see BS AU 173

3.4

x-, y- and z- planes

planes parallel to the zero X, Y and Z planes respectively

3.5**fiducial marks**

see BS AU 173

3.6**R-point**

the manufacturer's seat reference point which:

- a) establishes the rearmost normal design position for each seating location as designated by the manufacturer, which includes consideration of all modes of adjustment available for the seat, as stipulated by the manufacturer;
- b) has coordinates established with respect to the vehicle structure;
- c) simulates the position of the pivot centre of the human torso and thigh.

3.7 A-point

a point on the undepressed accelerator pedal 200 mm from the B-point, front

3.8 B-point

the heel point as defined by the manufacturer

3.9 C-point

the point of intersection, in the zero Y plane, of the bonnet and the windscreen

4 Dimensional codes

The codes to be used for the various dimensions shall be as given in clauses 5, 6 and 7.

5 Three-dimensional reference system, fiducial marks and R-points

No.	Dimension	Definition	Loading condition (see 3.2)	Code	Figure
5.1	Zero Z plane to supporting surface:	The distance between the zero Z plane and the supporting surface, measured in a vertical plane passing through the centre of the front or rear wheel, as appropriate.	Design load		Figure 1
5.1.1	At front of vehicle			H136	
5.1.2	At rear of vehicle			H137	
5.2	X coordinate of wheel centreline:	The distance from the zero X plane to the centreline of the front or rear wheel, as appropriate.	Design load		Figure 1
5.2.1	Rear wheel	NOTE If the values of left and right wheel centreline coordinates are different, both dimensions are stated, separated by a dash, the first one corresponding to the left wheel.		L127	
5.2.2	Front wheel			L128	
5.3	X coordinate of fiducial mark:	The distance from the zero X plane to the fiducial mark.	Design load		Figure 1
5.3.1	No. 1			L54	
5.3.2	No. 2			L55	
5.3.3	No. 3			L56	

No.	Dimension	Definition	Loading condition (see 3.2)	Code	Figure
5.4	Y coordinate of fiducial mark:	The distance from the zero Y plane to the fiducial mark.	Design load		Figure 2
5.4.1	No. 1			W21	
5.4.2	No. 2			W22	
5.4.3	No. 3			W23	
5.5	Z coordinate of fiducial mark:	The distance from the zero Z plane to the fiducial mark.	Design load		Figure 1
5.5.1	No. 1			H81	
5.5.2	No. 2			H82	
5.5.3	No. 3			H83	
5.6	Fiducial mark to supporting surface:	The distance from the fiducial mark to the supporting surface.			Figure 1
	No. 1 No. 2 No. 3		Kerb weight	H161 H162 H167	
	No. 1 No. 2 No. 3		Design load	H163 H164 H168	
	No. 1 No. 2 No. 3		Maximum weight	H165 H166 H169	
5.7	R-point to supporting surface:	The distance between the supporting surface and a plane parallel to it and passing through the R-point, front/rear.	Design load		Figure 3
5.7.1	Front	NOTE The values for left and right R-points are stated, separated by a dash, the first one corresponding to the left seat.		H5	
5.7.2	Rear			H10	
5.8	X coordinate of R-point:	The distance from the zero X plane to the R-point, front/rear.	—		Figure 3
5.8.1	Front	NOTE The values for left and right R-points are stated, separated by a dash, the first one corresponding to the driver's seat in the case of the R-point, front, and to the left seat in the case of the R-point, rear.		L31	
5.8.2	Rear			L35 ^a	
5.9	Y coordinate of R-point:	The distance from the zero Y plane to the R-point, front/rear.	—		Figure 3
5.9.1	Front	NOTE The values for left and right R-points are stated, separated by a dash, the first one corresponding to the driver's seat in the case of the R-point, front, and to the left seat in the case of the R-point, rear.		W20	
5.9.2	Rear			W25 ^a	

No.	Dimension	Definition	Loading condition (see 3.2)	Code	Figure
5.10	Z coordinate of R-point:	The distance from the zero Z plane to the R-point, front/rear.	—	H70 H71 ^a	Figure 3
5.10.1	Front	NOTE The values for left and right R-points are stated, separated by a dash, the first one corresponding to the driver's seat in the case of the R-point, front, and to the left seat in the case of the R-point, rear.			
5.10.2	Rear				
5.11	Front wheel centreline to R-point, front	The distance between two x-planes, one passing through the front wheel centreline, the other passing through the R-point, front.	—	L114	Figure 3

^a When a vehicle is fitted with more than two rows of seats, this code is followed by the numerals 2, 3, etc. for the second, third, etc. rows respectively.

6 External dimensions

No.	Dimension	Definition	Loading condition (see 3.2)	Code	Figure
6.1	Vehicle height, unladen	The distance between the supporting surface and a plane parallel to it and touching the highest point on the vehicle body.	Kerb weight	H100	Figure 4
6.2	Vehicle height		Design load	H101	Figure 4
6.3	Vehicle height, laden		Maximum weight	H113	Figure 4
6.4	Vehicle height, unladen, with hinged lid of luggage compartment open	The distance between the supporting surface and the z-plane touching the uppermost part of the opened hinged lid of the luggage compartment.	Kerb weight	H110	Figure 4
6.5	Bonnet height	The distance from the supporting surface to the C-point.	Design load	H114	Figure 4
6.6	Lift over height, unladen	The distance, measured in the zero Y plane, between the luggage compartment lower opening and the supporting surface.	Kerb weight	H196	Figure 4
6.7	Lift over height		Design load	H195	Figure 4
6.8	Upper body opening to supporting surface, front	The distance between the trimmed front body opening and the supporting surface at the R-point, front.	Design load	H50	Figure 4
6.9	Upper body opening to supporting surface, rear	The distance between the trimmed rear body opening and the supporting surface at a point 330 mm forward of the R-point, rear.	Design load	H51	Figure 4