
Specification for

Protective helmets for vehicle users (high protection)

Spécification des casques protecteurs pour les utilisateurs de véhicules
(niveau de protection haut)

Spezifikation für Schutzhelme für Fahrzeugverwender (Hochschutz)

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Foreword

This British Standard was first published in 1954 to specify requirements for helmets for use in high speed motor car races. The revision in 1960 increased the level and extent of protection provided. The 1977 revision goes further in this direction with shock absorption tests over a greater area and with the use of a hemispherical striker in addition to the usual flat-faced striker. Both the penetration and the retention system tests are more severe.

The same methods of test are now applied to all vehicle users' helmets, but this British Standard continues to provide for a helmet affording a higher level of protection than that of BS 5361 : 1976. The change of title of BS 2495 reflects the increased use of these helmets by vehicle users other than racing car drivers.

The protection given by a helmet must depend on the circumstances of the accident, and wearing a helmet cannot always prevent death or long-term disability. A proportion of the energy of an impact is absorbed by the helmet, thereby reducing the force of the blow sustained by the head. The structure of the helmet may

be damaged in absorbing this energy and any helmet that sustains a severe blow needs to be replaced even if damage is not apparent.

To achieve the performance of which it is capable and to ensure stability on the head, a helmet should be as closely fitting as possible consistent with comfort; in use it must be securely fastened, with the chin strap under tension at all times.

In this standard only one set of headforms is specified for use both in examining helmets for the extent of protection and in testing to the shock absorption requirements. A separate test block is used for the penetration test.

This revision is intended to replace BS 2495 : 1960 at such date as it is invoked by Regulations expected to be made by the Secretary of State for the Environment.

Certification: This British Standard provides for a product which covers personal safety. Manufacturers and purchasers are urged to make use of the certification facilities described on the inside back cover of this standard.



**Amendment Slip No.1, published 30 September 1977
to BS 2495 : 1977**

Protective helmets for vehicle users (high protection)

NOTE. Certification to this standard, as altered by this amendment, will apply from the date on which this amendment is invoked by Regulations expected to be made by the Secretary of State for Transport. Until that time, certification will continue to apply to the standard as originally published, in its unaltered form.

Revised text

AMD 2332
September 1977

Clause 5.2 Shell

Delete the first paragraph and substitute the following:

'The outer surface of the shell corresponding to the area ACDEF (see clause 10) shall be in the form of a continuous convex curve of minimum radius 75 mm except where provision is made to recess an edge trim or a visor or its attachments (see 5.7). Such provision, together with any irregularities in the continuous convex curve outside the area ACDEF, shall be faired with external blend radii of not less than 4 mm, or the included angle between two adjacent surfaces shall be not less than 150°. The shell shall not include an integral peak, but may include an integral face cover.'

AMD 2332
September 1977

Clause 5.4 Retention

At the end of the clause insert the following new paragraph:

'Where a helmet is fitted with an auxiliary strap in addition to the chin strap, the chin strap shall be positively identified by information supplied to the user. (See clause 16.)'

AMD 2332
September 1977

New clause 5.7

Insert the following new clause:

'5.7 Helmet/visor assembly. Where a helmet shell is recessed to accept a visor, the helmet/visor assembly shall be supplied for inspection to ensure that, in those areas where the shell is recessed, the outer surface of the visor in the closed position is not more than 3 mm below the adjacent shell surface, measured normal to the surface of the visor.

Where a helmet is fitted with a visor, that visor shall comply with the requirements of BS 4110*.'

Insert the following related footnote at the bottom of the page:

*BS 4110 is under revision. The requirements referred to will be those of the revised version.'

AMD 2332
September 1977

Clause 7.5 Flammability. (Optional requirement)

Delete the first sentence and substitute the following:

7.5.1 Shell. When tested by the method given in clause 14, the material of the shell shall not burn with the emission of flame after a period of 5 s has elapsed after removal of the flame.

7.5.2 Lining materials and edge trim. When tested by the method given in clause 14, lining materials that could be exposed to flame while the helmet is worn, and edge trimming around the shell, shall not burn with the emission of flame after a period of 5 s has elapsed after removal of the flame. Lining materials that would be in contact with the wearer shall not melt during the application of the flame.

7.5.3 Chin strap. When tested by the method given in clause 14, any surface of the chin strap that may make contact with the wearer shall not melt during the application of the flame.

7.5.4 Label. Where a label is permanently attached to the lining material at the crown of the helmet, it shall be exempt from requirements of flammability.'

MD 2332
September 1977

Clause 14. Test for flammability

Delete the first sentence and substitute the following:

14.1 Apparatus. The burner shall be a bunsen burner suitable for propane gas, with a 10 mm diameter bore, an adjustable air vent and an appropriate size of jet; the system shall incorporate a pressure control device and a tap.

The gas used shall be propane having a minimum purity of 95 %.

14.2 Test procedure. The gas pressure shall be adjusted to 3430 Pa (350 mm of water), as measured by a suitable manometer.

The flame shall be adjusted by means of the air vent so that the blue cone is clearly defined, although turbulent, and is approximately 15 mm long.

The test shall be carried out using a complete helmet.

With the burner angled at approximately 45° to the vertical, the end of the flame shall be applied to the surface under test for a period of time as stipulated below. The plane tangential to the test point shall be horizontal.

14.2.1 Duration of application of flame

To outside of shell	30 s
To lining material, edge trim	10 s
To chin strap	10 s'

AMD 2332
September 1977

Clause 16. Information to users (label)

Delete paragraph (b) and substitute the following:

‘For helmets fitted with a single chin strap.

(b) The chin strap must pass under the chin and be securely fastened to maintain tension at all times of vehicular use; it is a legal requirement that this helmet is securely fastened to the head during such use.

On no account must a chin cup be used with this helmet.

For helmets fitted with a chin strap and an auxiliary strap.

(c) For maximum safety *both* straps must be fastened. The chin strap must pass under the chin and be securely fastened to maintain tension at all times of vehicular use; it is a legal requirement that this helmet is securely fastened to the head during such use.

On no account must a chin cup be used on the chin strap. (See 5.4.)’

Re-designate the remaining paragraphs (c) (d) (e) and (f) as (d) (e) (f) and (g) respectively.

MD 2332
September 1977

Inside back cover

Standards publications referred to

Insert the following:

‘BS 4110 Motorcyclists’ eye-protectors’.



**Amendment Slip No. 2, published 31 August 1978
to BS 2495 : 1977
Protective helmets for vehicle users (high protection)**

Revised text

**AMD 2697
August 1978**

Contents

Under 'Specification', in the entry for clause 16, delete 'label' and substitute 'labels'.

Under 'Figures' insert the following new entry:

'7. Warning label'.

**AMD 2697
August 1978**

Clause 4.1

Delete the existing second paragraph and substitute the following:

'Where hydrocarbons, cleaning fluids, paints, transfers or other extraneous additions are known to affect the shell material adversely, or where a thermoplastic material is used for the shell, a warning label shall be provided (see 16.2).

**AMD 2697
August 1978**

Clause 13.1 Apparatus

After the second sentence insert the following:

'The strap shall be adjusted so that, prior to loading, the vertical distance from the headform reference line to the centre line of the rollers is 155 ± 5 mm.'

**AMD 2697
August 1978**

Clause 16. Information to users (label) (as amended by Amendment No. 1)

In the existing clause heading delete 'label' and substitute 'labels'.

**AMD 2697
August 1978**

New clause 16.1

In paragraph 1, line 1, of the existing text of clause 16, before 'Every helmet' insert '16.1 Information label.'

**AMD 2697
August 1978**

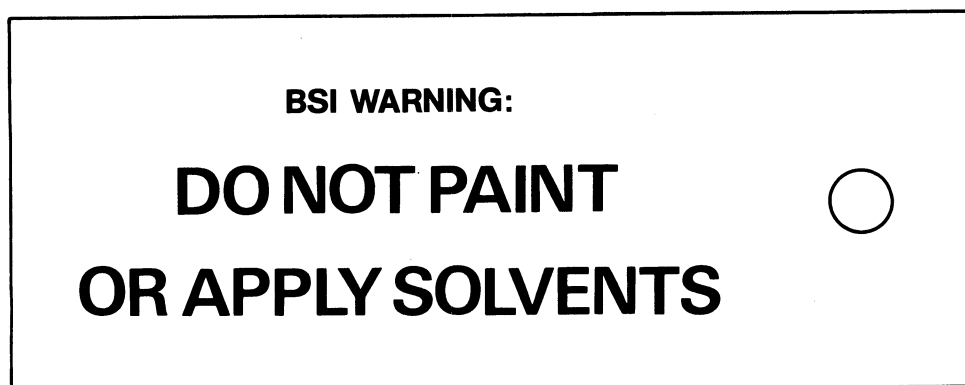
New clause 16.2

After 16.1 insert the following new subclause:

'16.2 Warning label. Every helmet having a shell made of a thermoplastic material shall bear a warning label, as detailed in figure 7, attached to the chinstrap or to a suitable stud.'

New figure 7

After the existing figures insert the following new figure 7.



Size : 50 × 125 mm approx

Lettering : Red on white background
12 & 24 point bold
Printed one side only

Material : Stiff card

Figure 7. Warning label