

Packaging code —

Section 7: Paper and board wrappers, bags and containers —

Subsection 7.3 Cartons and boxes

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Committees responsible for this British Standard

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- Association of Drum Manufacturers
- British Paper and Board Industry Federation (PIF)
- Department of Trade and Industry (Laboratory of the Government Chemist)
- Glass Manufacturers' Federation
- Institute of Packaging
- Metal Packaging Manufacturers' Association
- Ministry of Defence
- PIRA (The Research Association for the Paper and Board, Printing and Packaging Industries)
- Pressed Felt Manufacturers' Association
- Process Plant Association
- Timber Packaging and Pallet Confederation
- Timber Research and Development Association

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Foreword

This Subsection of BS 1133, which has been prepared under the direction of the Packaging and Freight Containers Standards Committee, supersedes clauses 12 to 14 of BS 1133-7:1967 which are deleted by amendment.

BS 1133 was originally issued in December 1943 and was intended primarily to give guidance on the packaging of Service and other Government supplies. In practice, however, the code was used not only by Government departments and contractors, but also by civilian packers and accordingly it was later amended to suit commercial requirements.

The Parts were later issued separately and new Sections were added as necessary. Since Section 7 covers many different types of packaging materials it was decided to subdivide it into a number of separately published Subsections.

This Subsection, Subsection 7.3, provides information on cartons and rigid and cylindrical boxes and gives guidance on their selection and use.

The packaging code now consists of the following Sections all of which are published separately with the exception of Sections 1 to 3 which are published in one volume.

- *Sections 1 to 3: Introduction to packaging;*
- *Section 4: Mechanical aids in package handling;*
- *Section 5: Protection against spoilage of packages and their contents by micro-organisms, insects, mites and rodents;*
- *Section 6: Temporary protection of metal surfaces against corrosion during transportation and storage;*
- *Section 7: Paper and board wrappers, bags and containers;*
- *Section 7: Subsection 7.1: Wrapping papers;*
- *Section 7: Subsection 7.2: Bags and envelopes;*
- *Section 7: Subsection 7.3: Cartons and boxes;*
- *Section 7: Chapter 7.5: Fibreboard cases;*
- *Section 8: Wooden containers;*
- *Section 9: Textile bags, sacks and wrappings;*
- *Section 10: Metal containers;*
- *Section 11: Packaging felt;*
- *Section 12: Cushioning materials (excluding packaging felt);*
- *Section 13: Twines and cords for packaging;*
- *Section 14: Adhesive closing and sealing tapes;*
- *Section 15: Tensional strapping;*
- *Section 16: Adhesives for packaging;*
- *Section 17: Wicker and veneer baskets;*
- *Section 18: Glass containers and closures;*
- *Section 18: Subsection 1: Terminology;*
- *Section 19: Use of desiccants in packaging;*
- *Section 21: Regenerated cellulose film, plastics film, aluminium foil and flexible laminates;*
- *Section 22: Packaging in plastics containers.*

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 to iv, pages 1 to 14, 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 Subsection of BS 1133 provides guidance on the various types of cartons and boxes such as cartons, rigid boxes and cylindrical boxes, mainly used in retail distribution, generally made from carton board (paperboard) and the purposes for which they are suitable. Points to be considered when designing or ordering these containers are set out.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this Subsection of BS 1133, the definitions given in BS 3130-2 and BS 3203 apply.

The following terms and definitions are given in BS 3130-2 and are repeated here for information purposes.

2.1

carton

a container which:

- a) is made from carton board generally between 250 µm and 1 000 µm in thickness and;
- b) is delivered by the carton manufacturer to the user in a flat, collapsed form for erection at the packaging point.

NOTE Containers made from solid board over 1 000 µm or from corrugated board which may also be delivered in the flat, collapsed form are described in BS 1133-7: Chapter 7.5 dealing with fibreboard cases.

2.2

rigid box

a box set up ready for use without further fixing when received from the box manufacturer

2.3

cylindrical box

a rigid tube made from either spiral or convolute tubing. The lid constructed similarly or from another material such as plastics or metal

3 Cartons

3.1 General

Few standard cartons exist, the majority being ordered and made for specific purposes. Carton board either in sheet or reel form is printed as required, cut to the desired shape by a multi-impression die and simultaneously creased to give lines of fold. Shapes so produced are either supplied in the flat or folded, glued and collapsed for storage before erection, which may be by hand or machine.

A variety of types and thicknesses of carton board may be used, combined with plastics or metal foils for special effects. There is a recognized range of carton styles (see 3.2), but variants in size and shape are usually designed to cater for the requirements of the packed product and its marketing.

This Subsection of BS 1133 gives guidance on the design possibilities of the carton making process and sets out the major considerations in selecting and ordering cartons.

If made from suitable material and in an appropriate shape, cartons can provide protection for their contents, are easy to handle and, prior to use, can be transported and stored in the minimum of space. They can be used as single packages or as multiple packs, i.e. as outers to accommodate a number of single units or packages.

3.2 Carton styles

3.2.1 Classification. In detail, carton styles are as variable as the types of articles to be packed, but there are certain recognized classifications or carton styles. These styles are contained in a code published by the European Carton Makers Association under the title of the Code ECMA¹⁾.

In the Code ECMA a series of drawings show various basic styles of carton, referred to by a code letter and a two digit number. A third digit is added to indicate a derivative of this basic style. A selection of these styles with their code letters and numbers is given in Figure 1 to Figure 17.

There are six main classifications of cartons covered by the Code ECMA as follows.

- a) A: common side seam glued cartons with either tuck flap or glued flap closures and combinations of these with flaps containing locking slits, crash lock bases and powderproof closures (A111 to A995).
- b) B: tray type cartons with double thickness walls formed either by gluing or flap interlocking. Some of these styles may give the effect of a flanged lid or a hollow wall (B110 to B910).
- c) C: tuck flap cartons made from two pieces of board, glued or stapled together (C110 to C410).
- d) D: cartons delivered unglued or unstitched which erect by locking tabs or self adhesive areas into trays with or without an integral lid (D110 to D420). Also into this category come fitments and folders and open-ended sleeves (D610 to D971).

¹⁾ Obtainable from the British Carton Association, 11 Bedford Row, London WC1R 4DX.