

SLOVENSKI STANDARD

SIST EN 14054:2003

01-oktober-2003

Embalaža – Embalaža iz papirja in lepenke – Načrtovanje škatle

Packaging - Paper and paperboard packaging - Design of cartons

Packmittel - Verpackungen aus Papier und Pappe - Grundbauarten von Schachteln

Emballage - Emballage papier et carton - Conception des cartons d'emballage

Ta slovenski standard je istoveten z: EN 14054:2003

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ICS:

55.160	Zaboji. Škatle. Plastični zaboji	Cases. Boxes. Crates
85.080.01	Papirni izdelki na splošno	Paper products in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14054

June 2003

ICS 55.160

English version

**Packaging - Paper and paperboard packaging - Design of
cartons**

Emballage - Emballage papier et carton - Conception des
cartons d'emballage

Packmittel - Verpackungen aus Papier und Pappe -
Grundbauarten von Schachteln

This European Standard was approved by CEN on 25 April 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14054:2003) has been prepared by Technical Committee CEN /TC 261 "Packaging", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by December 2003.

This document is derived from work carried out by the European Carton Makers Association (ECMA) which is the federation for the national carton makers associations of Europe. ECMA has produced and refined a coded system for describing carton types and agreement has been reached with CEN that this code may be described in a European Standard.

The ECMA Code can be considered as a standardized system to substitute long and complicated verbal descriptions of cartons by simple symbols internationally understood by all regardless of language and other differences.

Annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Efficient packaging is of great importance for the distribution and the protection of goods. Insufficient or inappropriate packaging may lead to damage or wastage of the contents of the pack.

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 a single package or as a multiple pack.

The purpose of this European Standard is to describe construction elements for cartons by a simple code and provide supporting information on functionality (see annex A).

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1 Scope

This European Standard describes basic types and constructions of cartons in carton board. Styles of corrugated and solid board packaging are not covered by this EN standard.

NOTE Cartons are usually delivered by the carton manufacturer, to the user, in flat folded form (preglued) or as a flat blank.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 2233, *Packaging – Complete, filled transport packages and unit loads - Conditioning for testing (ISO 2233:2000)*.

The ECMA Code of Folding Carton Styles

Published by:

European Carton Makers Association,
Laan copes van Cattenburch 79,
NL-2585 EW Den Haag,
The Netherlands.

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3 Dimensions

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3.1 Direction of measurement

The three directions of measurements shall be at right angles to one another and the dimensions denoted for an erected carton by the letters A, B and H.

- Length (A) - the longer side of the open or front fill end
(the dimension between the side [dust] flaps)
- Width (B) - the other side of the fill end
(the other, remaining dimension of the opening)
- Height (H) - height or depth, the 3rd dimension of the carton
(this is not a filling side)

NOTE The difference between the external and internal dimensions of the carton depends on the thickness of the board.

3.2 Taking of measurement

Dimensions shall be measured on the flat blank. Dimensions of cartons are defined from centre of crease line to centre of crease line.

Dimensions of carton board may vary with variation in moisture content of the material. Accurate measurements of dimensions shall therefore be performed under standard climatic conditions (Condition 50 % r.h./23 °C of EN ISO 2233).

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3.3 Production of a full dimensional specifications

The production of a full dimensional specification will require co-operation between carton maker and user and it may be advisable to carry out a packing trial with a quantity of cartons to check the validity of the initial specifications. The number of cartons required for such a trial will depend on the packing rate and order size.

4 Basic Type Groups

4.1 General

In their design carton styles can be as variable as the types of articles to be packed but there are certain recognised basic type groups or styles. The purpose of this section is to describe a code which is used to identify carton styles in order to simplify communication between manufacturers, specifiers, users and other parties involved.

The economic use of carton board should be a consideration. When designing the layout of the flat blanks on the sheet of board for die-cutting, the use of styles which can be interlocked will give an advantage in minimising the trim created. Changes in the relative length of closure flaps may permit a more economic use of board area for a given volume of contents. The advice of the carton maker on these and other considerations on style should be sought.

The use of numerical controlled laser cutting equipment to produce cutting and creasing dies for carton makers has led to the computerised storage of many carton designs. Other designs may be readily assembled from a standard flap and panel shapes stored in a computer database.

4.2 Code composition

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The code is based on the three dimensional shape of the carton as it appears before its use or filling.

The code has a basic type description of a one-letter code (group) and allows for relevant supplementary information by two additional parts (first and second element) each consisting of two digits. This means that the code is made up of three parts in the following sequence:

Y	00	00
group	1 st element	2 nd element

There are five specific basic design type groups described by A - E, one group, F, covering other designs not covered by the groups A - E and completed by an additional group, X, for auxiliary devices applicable to all styles included in the groups A - F.

The information given by the second and the third parts (elements) of the code describe particular style features which vary depending on the basic type groups to which they relate. The elements relevant to each group are included in section 4.3. If there is a need, codes for specific styles can be assigned. For samples see the ECMA Code.

If needed, extra elements of the code specific to each manufacturer may be used.

NOTE A number of style versions, including the numbers currently assigned to elements, are listed in the ECMA Code.

4.3 Group Definitions

4.3.1 General

The styles of folding cartons are categorised in six groups, A - F. Examples of the visualisation of all groups are given in Figure 1. Auxiliary devices of all groups are described as group X.

4.3.2 Group A

Long seam glued folding cartons with rectangular surfaces.

a) A glue seam in H is compulsory ("tube type").

- b) All outer panels have an angle of 90° between each other (except gable top or some sealed closures).

First element describes the bottom constructions. Second element describes the top constructions.

4.3.3 Group B

Folding cartons with rectangular surfaces, non-long seam glued.

- a) There is no long seam gluing (no tube is formed).
- b) A subgroup comprising locking devices is included.

First element gives a description of basic shape. Second element describes the lid or flap construction.

4.3.4 Group C

Long seam glued folding cartons with non-rectangular surfaces.

- a) A glue seam in H is compulsory ("tube type").
- b) At least one of the main body's surfaces (panels) is non-rectangular.
- c) The angle of the sides with respect to the bottom should be at an angle of 90° (at right angles) to the bottom of the container.

First element describes the body construction. Second element describes the closure construction used.

4.3.5 Group D

Folding cartons with non-rectangular surfaces, non-long seam glued.

- a) No long seam gluing in H.
- b) At least one of the main body's surfaces (panels) is non-rectangular.
- c) The height H in relation to the bottom may have an angle of 90° or be inclined.

First element describes the base construction. Second element describes the cover, lid or top closure construction.

4.3.6 Group E

Product-integrated folding cartons.

Are designed to work in combination with specific goods/contents. First element describes the type of product to be packed. Second element describes the style (construction).

4.3.7 Group F

Other folding cartons.

This group comprises all styles of cartons that cannot be attributed clearly enough to one of the main groups A through E.

4.3.8 Group X

Auxiliary devices of all groups.

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