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# INTERNATIONAL STANDARD



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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION · МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ · ORGANISATION INTERNATIONALE DE NORMALISATION

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## Hermetically sealed metal cans for food and drinks — Specifications

*Réipients métalliques étanches pour denrées alimentaires et boissons — Specifications*

First edition — 1977-06-15

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UDC 621.798.144 : 672.46

Ref. No. ISO 90-1977 (E)

**Descriptors** : food industry, food packaging, cans, specifications, definitions, volumetric measurement, dimensional measurement, capacity, designations.

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 90 was developed by Technical Committee ISO/TC 52, *Metal containers*, and was circulated to the member bodies in July 1976.

It has been approved by the member bodies of the following countries :

Australia	India	Romania
Belgium	Israel	South Africa, Rep. of
Canada	Italy	Sweden
Czechoslovakia	Korea, Rep. of	Switzerland
Denmark	Netherlands	Turkey
Finland	New Zealand	United Kingdom
France	Poland	U.S.A.

No member body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 90-1959, of which it constitutes a technical revision.

# Hermetically sealed metal cans for food and drinks — Specifications

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard defines terms and specifies methods for the determination of nominal dimensions, for the determination of capacity and for the designation of hermetically sealed metal cans for food and drinks.

## 2 DEFINITIONS

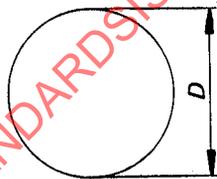
For the purposes of this International Standard, the following definitions apply:

**2.1 can:** A rigid metal container produced to contain foods and drinks and which is hermetically sealed. Cans are defined by the following characteristics: capacity, cross-section, construction, shape and special features.

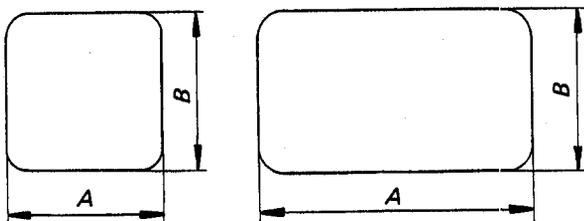
**2.1.1 capacity:** The internal volume of the closed can, measured in accordance with the standard method (see clause 4) and expressed in millilitres.

### 2.1.2 Cross-section

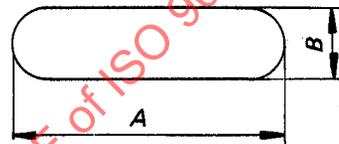
**2.1.2.1 round can:** A metal container having a circular cross-section.



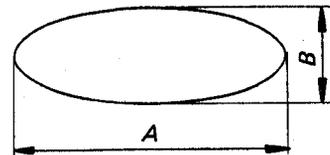
**2.1.2.2 rectangular can (square and oblong):** A metal container having a square or oblong cross-section and rounded corners.



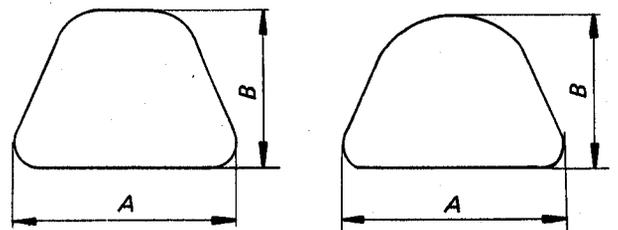
**2.1.2.3 obround can:** A metal container having a cross-section with parallel sides joined by two semi-circular ends.



**2.1.2.4 oval can:** A metal container having an oval cross-section.

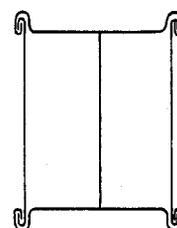


**2.1.2.5 trapezoidal can:** A metal container having an approximately trapezoidal cross-section, the corners being rounded. The shorter of the parallel sides may be rounded.

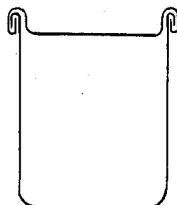


### 2.1.3 Construction

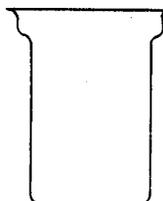
**2.1.3.1 three-piece (built-up) can:** A can made from three main components: body, and top and bottom end.



**2.1.3.2 two-piece can :** A can made from two main components : body with integral bottom, and top end.

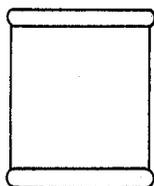


**2.1.5.2 step-sided can :** A can in which the top cross-section of the body has been increased so that an end component of larger dimensions may be used.

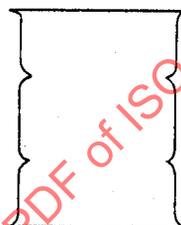


**2.1.4 Shape**

**2.1.4.1 cylindrical can :** A straight-walled, necked-in, step-sided or beaded can in which the cross-section remains constant in dimensions from top to bottom, ignoring local variations caused by beading.

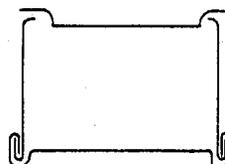
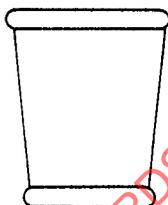


**2.1.5.3 beaded can :** A can whose straight-walled body has small peripheral changes in the internal cross-section in order to improve rigidity.



**2.1.5.4 "à décollage" can :** A three-piece can in which the fixed end is attached, by soldering, to a flange formed on the body component. The loose end is attached by double seaming after filling and the consumer opens the can by peeling back the "à décollage" end using the key provided.

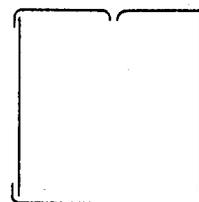
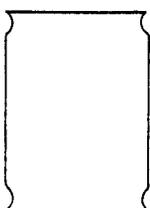
**2.1.4.2 tapered can :** A straight-walled, necked-in, step-sided or beaded can in which the cross-section changes continuously in dimension from top to bottom, ignoring local variations caused by beading.



**2.1.5.5 vent-hole can :** A three-piece can with both top and bottom ends capped-on and soldered, one end being pierced with a "vent hole".

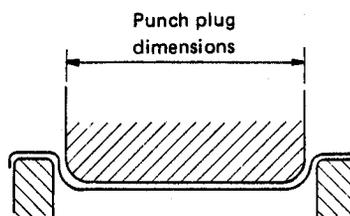
**2.1.5 Special features**

**2.1.5.1 necked-in can :** A can in which one or both extremities of the body are reduced in cross-section so that end components of smaller dimensions may be used.

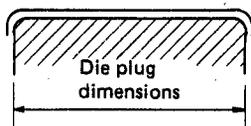


**2.2 End tool parts**

**2.2.1 Punch plug (for double-seamed ends)**



2.2.2 Die plug (for capped-on ends)



3 DETERMINATION OF NOMINAL DIMENSIONS

3.1 Nominal can cross-sections

The nominal can cross-section is the internal cross-section of the body determined to the nearest 0,1 mm, the resultant figure being rounded to the nearest whole millimetre. (If the first decimal is 0,5 mm or above, round up; in all other cases, round down.)

Where agreement has been reached on a range of standard nominal cross-sections, the permitted upper and lower limits of actual internal body dimensions for any nominal cross-section in the range will be published.

In all instances, internal body cross-sections are determined by using a plug gauge or by derivation from external body dimensions measured with a vernier caliper.

Internal cross-sections are characterized by the following data :

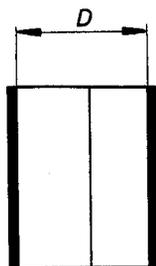
- a) round can :  $D$ . See 2.1.2.1.
- b) rectangular and obround :  $A$  and  $B$ . See 2.1.2.2 and 2.1.2.3.
- c) oval can :  $A$  and  $B$ . See 2.1.2.4.
- d) trapezoidal can :  $A$  and  $B$ . See 2.1.2.5.

The diagrams define the point of determination of nominal cross-section for cans with various characteristics.

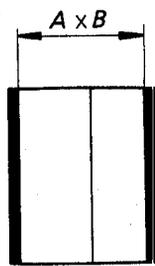
3.1.1 Three-piece can

The nominal cross-section is determined avoiding the flanged, necked-in, step-sided or beaded portion of the body, and the side seam.

3.1.1.1 CYLINDRICAL CAN

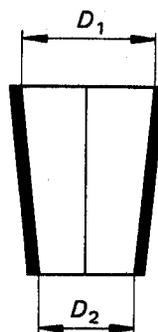


Round cans

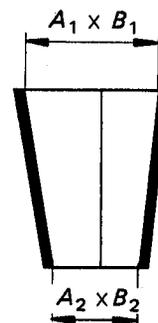


Non-round cans

3.1.1.2 TAPERED CAN



Round cans

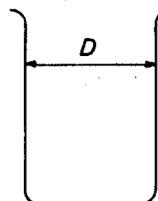


Non-round cans

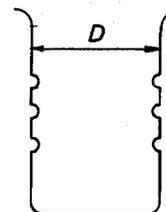
3.1.2 Two-piece can

The nominal cross-section is determined avoiding the flanged, necked-in, step-sided or beaded portion of the body.

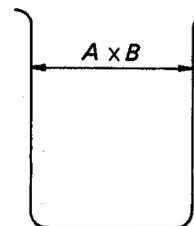
3.1.2.1 CYLINDRICAL CAN



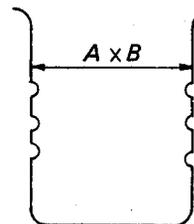
Straight-walled



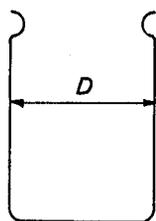
Beaded  
Round cans



Straight-walled

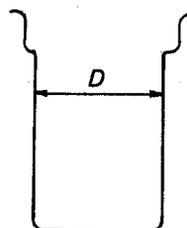


Beaded  
Non-round cans



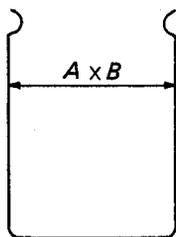
Necked-in

Round cans



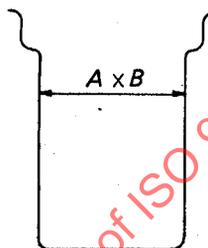
Step-sided

Round cans



Necked-in

Non-round cans



Step-sided

Non-round cans

3.1.2.2 TAPERED OR OTHER SHAPES OF CAN

