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**Light gauge metal containers —  
Easy-open ends and peel-off ends —  
Classification and dimensions**

*Récipients métalliques légers — Ouvertures faciles et extrémités  
détachables — Classification et dimensions*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 52, *Light gauge metal containers*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Metal cans are important packaging for the food industry, as they provide a long shelf life for food and beverage products. They are used for canning vegetables and meat, as well as beer and carbonated drinks. The pull tab for beverage cans was invented in 1959 and easy-open ends with the pull tab have been included with various types of metal cans since the 1960s. The easy-open end solves the problem of how to open the can and is convenient and instant, which is what customers demand. It also allows more products (e.g. soup, juice, coffee) to be stored in metal packaging. There are many advantages to using metal cans such as strength, good sealing capacity and easy storage, and they are a convenient way to transport seasonal food and beverages around the world.

A large number of easy-open ends and peel-off ends are produced every year, and they have become an important part of the can manufacture industry. Along with thinner and lighter demands for metal food packaging, softer aluminium peel-off ends have been developed for use in some food cans and powder cans. They have improved the convenience and safety of opening the metal cans.

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# Light gauge metal containers — Easy-open ends and peel-off ends — Classification and dimensions

## 1 Scope

This document specifies classification and the key dimensions of easy-open ends and peel-off ends.

This document is applicable to the manufacture and sale of easy-open ends and peel-off ends for food and beverages made of metal plates such as tin, chromium coated steel plates or aluminium alloy plates with a thickness of no more than 0,49 mm.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **easy-open end**

end comprised of a sheet metal made of aluminium alloy, electrolytic tinplate or electrolytic chromium/chromium oxide coated steel, with a score line, and a tab attached by rivet for easy opening

### 3.2

#### **peel-off end**

end comprised of a metal ring and a film, which film is heat sealed onto the ring

## 4 Classification

### 4.1 Easy-open ends

Easy-open ends comprise:

- a) round easy-open ends, see [Figure 1 a\)](#) for a top view, which comprise:
  - 1) round easy-open ends for food cans;
  - 2) round easy-open ends for beverage cans;
  - 3) round easy-open ends for solid food cans;
- b) non-round easy-open ends, which comprise:
  - 1) rectangular and square easy-open ends, see [Figure 1 b\)](#) for a top view;
  - 2) oval easy-open ends, see [Figure 1 c\)](#) for a top view;
  - 3) trapezoidal easy-open ends, see [Figure 1 d\)](#) for a top view;

4) obround easy-open ends, see [Figure 1 e\)](#) for a top view.

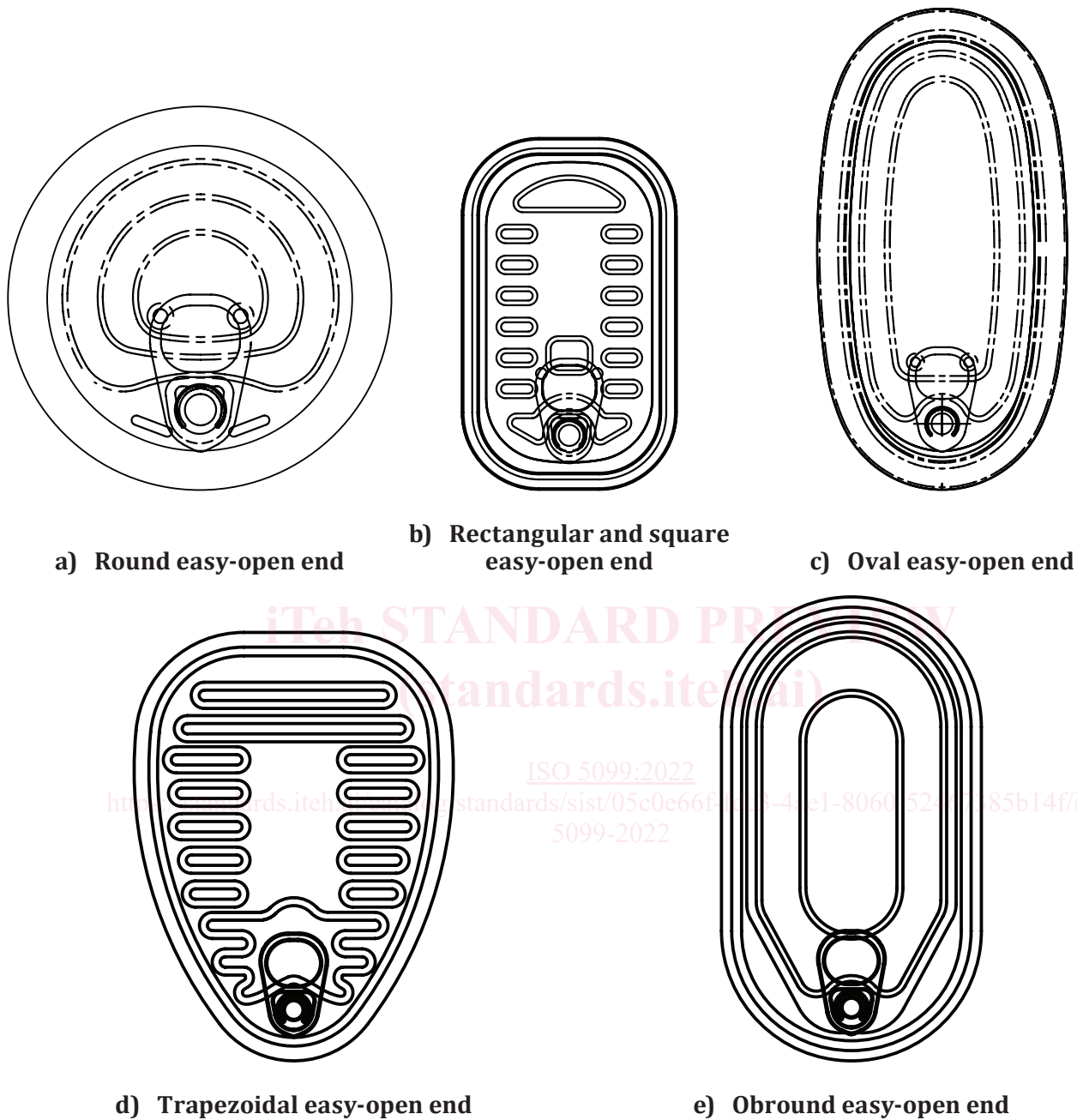


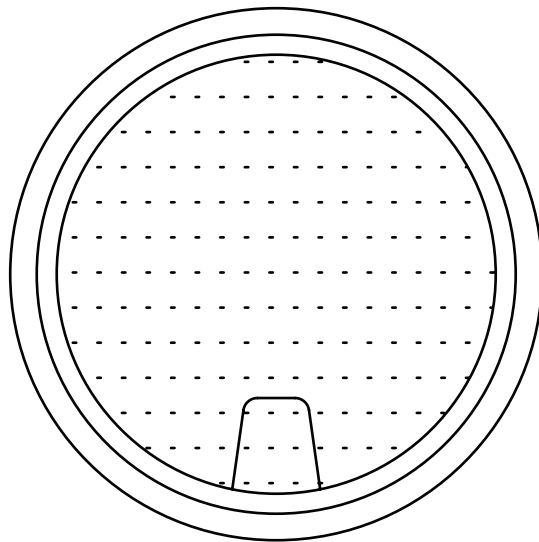
Figure 1 — Easy-open ends

## 4.2 Peel-off ends

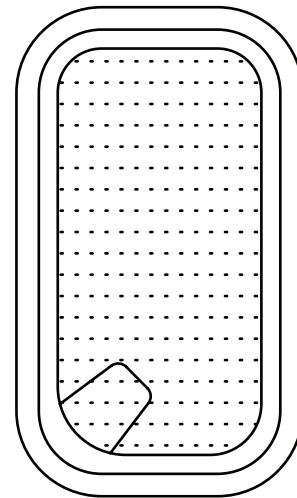
Peel-off ends comprise:

- a) round peel-off ends, see [Figure 2 a\)](#) for a top view;
- b) rectangular and square peel-off ends, see [Figure 2 b\)](#) for a top view.





a) Round peel-off end



b) Rectangular and square peel-off end

Figure 2 — Peel-off ends

## 5 Designation

Easy-open ends and peel-off ends should be designated as follows:

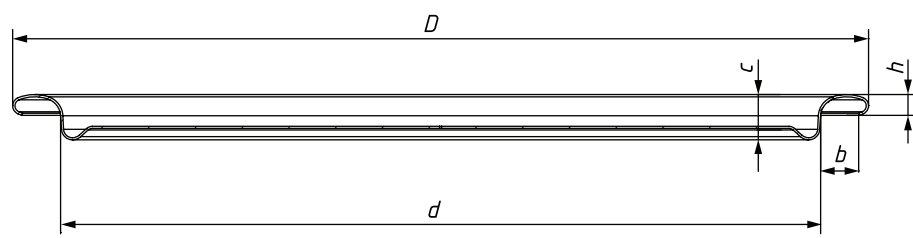
— with the code letter:

- “R” for round easy-open ends;
- “Re” for rectangular and square easy-open ends;
- “Ov” for oval easy-open ends;
- “Tr” for trapezoidal easy-open ends;
- “O” for obround easy-open ends;
- “Rp” for round peel-off ends;
- “Rep” for rectangular and square peel-off ends;

## 6 Dimensions

### 6.1 Key dimensions

See [Figure 3](#) for key dimensions of easy-open ends and peel-off ends.



Key

- $d$  can/nominal diameter  
NOTE For non-round easy-open ends and peel-off ends,  $d_1$  is the long axis of the can diameter and  $d_2$  is the short axis of the can diameter.
- $D$  curl diameter
- $c$  countersink depth
- $h$  curl height
- $b$  curl opening

Figure 3 — Key dimensions of easy-open ends and peel-off ends

6.2 Dimensions of easy-open ends

6.2.1 Round easy-open ends

6.2.1.1 Round easy-open ends for food cans

The recommended dimensions and tolerance of round easy-open ends for food cans are given in Table 1.

Table 1 — Recommended dimensions and tolerance of round easy-open ends for food cans

| End size | Can diameter<br>( $d$ )/mm | Curl diameter<br>( $D$ )/mm | Curl height<br>( $h$ )/mm | Countersink depth<br>( $c$ )/mm | Curl opening<br>( $b$ )/mm |
|----------|----------------------------|-----------------------------|---------------------------|---------------------------------|----------------------------|
| R200     | 49,50 ± 0,10               | ±0,10                       | ±0,13                     | ±0,13                           | ≥ 3,10                     |
| R202     | 52,30 ± 0,10               | ±0,10                       | ±0,13                     | ±0,13                           | ≥ 3,10                     |
| R209     | 62,50 ± 0,10               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,10                     |
| R211     | 65,30 ± 0,10               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,10                     |
| R214     | 69,90 ± 0,10               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,10                     |
| R300     | 72,90 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R303     | 77,60 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R305     | 80,30 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R307     | 83,30 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R309     | 86,70 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R315     | 95,50 ± 0,15               | ±0,15                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R401     | 98,90 ± 0,20               | ±0,20                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R403     | 102,40 ± 0,20              | ±0,20                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R404     | 105,10 ± 0,20              | ±0,20                       | ±0,13                     | ±0,13                           | ≥ 3,30                     |
| R603     | 153,40 ± 0,20              | ±0,20                       | ±0,13                     | ±0,13                           | ≥ 3,50                     |