



International Standard

ISO 24021-2

Light gauge metal containers — Vocabulary and classification —

Part 2: General cans

Réipients métalliques légers — Vocabulaire et classification —

Partie 2: Boîtes à usage général

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Foreword

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

A list of all parts in the ISO 24021 series can be found on the ISO website.

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.

Introduction

The terms and classification of open-top cans and ends are specified in ISO 24021-1. This document is a continuation of ISO 24021-1, and aims to specify relevant terminology and classification on general cans according to industries situation, and to promote the technical communication and international trade for stakeholders in this field.

Similar to open-top cans and ends, some terminology of general cans currently in use has developed through common usage and is not always logical. There are occasional conflicts between tradition and logic, and some definitions inevitably represent a compromise. The same situation exists with classification, the method by which classifiers are defined depends upon the application area. In addition, the classifiers used within a particular application area will not always be adequate for all situations.

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Light gauge metal containers — Vocabulary and classification —

Part 2: General cans

1 Scope

This document defines terms and establishes a classification (see [Annex A](#)) for general cans.

This document is applicable to general cans used in food, chemical, gift and other fields made of tinplate or chrome plated steel, stainless steel plate and laminated steel plate with a nominal material thickness no more than 0,49 mm.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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 Terms related to raw and processed materials

3.1.1

plain plate

ETP or TFS plate with bare surface

Note 1 to entry: ETP is the abbreviation for tinplate or electrolytic tinplate.

Note 2 to entry: TFS is the abbreviation for tin free steel, another name for electrolytic chromium or chromium oxide-coated steel.

3.1.2

stainless steel

steel with no rust, corrosion resistance, and chromium content of at least 10,5 %, and the maximum carbon content of not more than 1,2 %

3.1.3

coated tinplate or tin free steel

plain plate ([3.1.1](#)) coated with lacquer and cured at high temperature to form a film on its surface

3.1.4

laminated steel

composite material with dual properties of organic polymer material and metal material formed by laminating a layer of polymer film on the surface of *plain plate* ([3.1.1](#)) through the melting method

3.2 Terms related to manufacturing technique

3.2.1

cutting angle

notch

right angles or certain degree angles cut symmetrically on the four corners of the flat metal sheet used for can body forming

3.2.2

pre bending

action of making the edge of the can to form an inward or outward curve

3.2.3

bending

action of making the body blank bent according to the desired length of the finished can

3.2.4

forming

cylinder formed from the body blank by the rounding device

3.2.5

flanging

upper or lower edge of the can that is flared out at right angles to the vertical axis of the can

3.2.6

lock seam

seaming formed by the two edges of a can body shaped like hooks and compressed to form four layers of plate

3.2.7

necking

die or spinning method for reducing the diameter of the open top of a cylinder blank

3.2.8

expanding

punching method for enlarging the diameter of the open top of a cylinder blank

3.2.9

embossing

printing process that uses a concave and convexity mould to form printed material deformation under a certain pressure to form a pattern on the surface

3.2.10

bottom locking

process that allows the body and bottom of the can to be locked together

3.2.11

curling

adding of a circular roll to the edge of the sheet

3.2.12

welding

joining of two vertical edges of the body cylinder by using heat at high temperature

3.2.13

punching

making of a hole on metal plate by die

3.2.14

riveting

use of mechanical fastener, composed of head and tail, to fasten attachment with can body or end

3.2.15

drawing

processing method that uses the extensibility of metal materials by drawing die to put a blank or semi-finished product of a certain shape into a mould to form an open hollow can

3.2.16

seam

sealing structure formed by rollers to make the flange of the can body and the hook of the cover (bottom) overlap each other and press tightly

3.2.17

ink-jet printing

process of marking product information on can ends or labels with a printer

3.2.18

seaming roll

main part on a can seamer with two small round wheels with different curvatures around that forms the double-seam structure, in which the first roller is to roll the can cover hook under the can body flange and roll them together, and the second roller is to press the first roller tightly, so that the curling is tightly combined with each other, and the sealant is filled inside the forming gap between the can body and the cover hook

3.2.19

seaming rail

sealing accessory part of the high-speed sealing machine, which replaces the roller, forms a double seam and meets the sealing requirements

3.2.20

base plate

part that lifts the can lid and the can body upward when the can sealing machine is running, so that the pressure head is embedded in the can lids, and the can body is stabilized to avoid sliding, so as to facilitate the formation of double curling and meet the sealing requirements

3.2.21

seaming chuck

part of the can sealing machine that can be embedded in the countersunk part of the can cover and support the combined part of the can cover and the can body with the peripheral side to resist the pressure of the sealing roller

3.2.22

double seam

sealing structure formed by the operation of the first roller and the second roller to make the flanging of the can body and the hook of the cover (bottom) overlap each other and press tightly, which is composed of three layers of top (bottom) cover thickness and two layers of can body thickness

3.2.23

compound

sealing material formulated with latex or rubber, filler and tackifier

3.2.24

handle

metal or other material installed on the can body or lid for lifting the can

3.3 Terms related to quality

3.3.1

body hook

BH

folding over of the body flange into an interlocking hook

3.3.2

cover hook

CH

hook formed from the cover curl extending from the radius to an opposite (180°) radius

3.3.3

seam thickness

maximum external dimension measured across or perpendicular to the body and cover hook

3.3.4

seam width

seam length

seam height

maximum dimension measured parallel to folds in the seam

3.3.5

seam gap

place between the top of the body hook radius and the underside of the seaming panel

3.3.6

length of overlap

actual overlap

measurement of how much the *body hook* ([3.3.1](#)) overlaps the *cover hook* ([3.3.2](#))

3.3.7

rate of overlap

% OL

percentage of overlap

ratio of the *length of overlap* ([3.3.6](#)) relative to the internal seam length, expressed as a per cent

3.3.8

wrinkles rating

WR

degree of waviness occurring in the *cover hook* ([3.3.2](#)) from which the degree of double seam tightness is determined

3.3.9

tightness rating

TR

measure of the degree of wrinkle left on the end hook on the completed double seam

3.3.10

cover hook butting

CHB

percentage of the can *cover hook* ([3.3.2](#)) at the overlap of the seam to the theoretical *cover hook* ([3.3.2](#)) length

3.3.11

body hook butting

BHB

percentage of the can *body hook* ([3.3.1](#)) at the overlap of the seam to the theoretical *body hook* ([3.3.1](#)) length

3.3.12

countersink depth

distance from the top radius of the double seam to the bottom of the countersink radius

3.3.13

pressure ridge

clearly visible impression formed by seaming roll pressure around the inside of the can body against the cover countersink wall by stripping the double seam for inspection

3.3.14

splash

spikes of metal extending from the weld due to excessive heating at the site of the spatter

3.3.15

cold weld

false welding

pseudo welding

welding when two plates to be welded have not reached the plastic-welded state (only the tin is melted) due to a low welding temperature

3.3.16

welding pin hole

cavities that can appear in a melded puddle after two pieces of metals are welded together

3.3.17

welding puncture

individual welding spots melt and perforated due to the sudden excessive welding current

3.3.18

missing welding

open weld

welding point failing to weld due to no current or too small current

3.3.19

burned weld

excessive local heat due to the presence of foreign materials, resulting in a burned through condition

3.3.20

off-set

defect where the weld port is not flat due to a poor end lap

3.3.21

fishtail

defect where the end of the weld is protruding due to poor welding

3.3.22

dead head

spinner

skidder

slip seam

incompletely ironed out double seam

3.3.23

jumped seam

defect where the hemming at the weld is thicker and the roller skips when passing through the weld and fails to compress the hemming

3.3.24

false seam

false seal

seam or portion of a seam that is entirely unhooked and in which the folded *cover hook* ([3.3.2](#)) is compressed against the folded *body hook* ([3.3.1](#))

3.3.25

creasing

linear indentation below the double seam, where the metal layer is scratched or broken by the seam roller

3.3.26

lip

tongue-shaped part obviously exposed at the lower edge of the curling due to poor sealing

3.3.27

droop

iron tongue that exceeds 20 % of the curling width at the seam of the can body

3.3.28

sharp seam

sharp edge at the top inside portion of the seam at any point around the seam

3.3.29

cut over

fractured seam

seam defect sharp enough to fracture the metal at the top inside portion of the seam

3.3.30

vee

v-shaped protrusions under the double seam edge, which formed on the *cover hook* ([3.3.2](#)) due to bad overlap between the *cover hook* ([3.3.2](#)) and the *body hook* ([3.3.1](#))

3.3.31

knocked down flange

soft crab

body flange bent back against the body without being engaged with the *cover hook* ([3.3.2](#))

3.3.32

scratch

defect caused by external friction or damage on the tin-plated layer, paint film or external printed iron label

3.3.33

mislock

degree of unhooking along the side seam of a can

3.3.34

bottom seam failure

degree of unhooking along the bottom seam of a can

3.3.35

mismatch

mis-assembly

can and cover misaligned before entering the seaming cycle

3.3.36

poor curling

degree of uneven around crimping

3.3.37

handle fall off

separation of handle from can body or lid

3.3.38

poor angle cutting

deform, residue or burr appeared in cutting area, affecting following process

3.3.39

coating cracking

cracks appearing on the coating due to process

3.3.40

poor compound lining

wrong compound or improper compound weight, uneven distribution, over or under curing, resulting in poor sealing

Note 1 to entry: Specific manifestations are, for example, excess compound, compound skip, compound smear, dirty ends, peeling compound, and so on.

3.3.41

poor embossing

wrong position and poor appearance of the embossing

3.3.42

dimension measurement

checking of the cans dimension using the corresponding measuring tools

3.3.43

appearance inspection

checking of the appearance of the cans by visual inspection

3.3.44

hermetic seal inspection

use of internal air pressure or vacuum to test cans for leaks

3.3.45

handle strength

maximum stretching force that the handle can endure

3.3.46

aggressive test

testing of the corrosion resistance of the can surface using the corresponding measuring gauges

3.3.47

axial load strength

maximum vertical load force or pressure on the can

3.3.48

drop test

lifting of the finished can to the set height and angle, and let free fall

3.3.49

enamel rate value

ERV

evaluation of the undesired metal exposure by checking the integrity of the coating using current value

3.3.50

carbon footprint of a light gauge container

sum of greenhouse gas emissions and removals in a light gauge container, expressed as CO₂ equivalent and based on a life cycle assessment

3.3.51

primary metal

metal extracted from minerals and free of reclaimed metal scrap

3.3.52

secondary metal

metal that does not directly originate from a primary mineral but from a recycling process or from the processing of waste streams from primary production

3.4 Terms related to classification

3.4.1

general can

rigid container made of metal plate with a thickness of no more than 0,49 mm, which is sealed after filling with a closure that may be made of a different material

Note 1 to entry: Usually, the container can be reclosed after initial opening.

3.4.2

general can for liquid food

general can (3.4.1) for liquid products such as beverage and edible oil, etc.

3.4.3

general can for dry food

general can (3.4.1) for dry products such as confectionery, protein powder and condiment

3.4.4

general can for industrial purpose

general can (3.4.1) for chemical products such as lacquer, lubricant and ink

3.4.5

general can for other purpose

general can (3.4.1) for products such as crafts, jewellery, tools, cosmetics and toys

3.4.6

stainless steel general can

general can (3.4.1) made of stainless steel

3.4.7

plain steel general can

general can (3.4.1) made of plain steel

3.4.8

coated steel general can

general can (3.4.1) made of coated steel

3.4.9

laminated steel general can

general can (3.4.1) made of laminated steel

3.4.10

three-piece general can

can made from three main components, a body, a top end and a bottom end

Note 1 to entry: See [Figure 1](#).

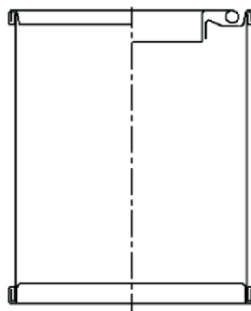


Figure 1 — Three-piece general can

3.4.11

two-piece general can

can made from two main components, a body and a bottom, which form one piece and a top end

Note 1 to entry: See [Figure 2](#).

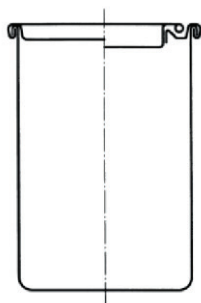


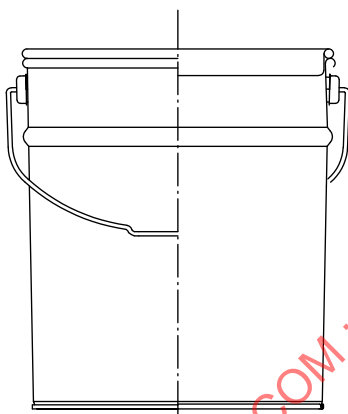
Figure 2 — Two-piece general can

3.4.12

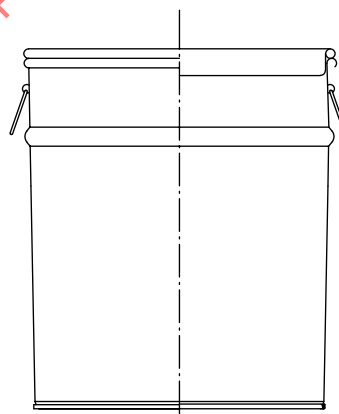
pail

full-friction can fitted with one or more handles

Note 1 to entry: See [Figure 3](#).



a) Single-handle



b) Double-handle

Figure 3 — Pail

3.4.13

full-friction can with clamping ring

full-friction can which lid is held in position by a closing band

Note 1 to entry: See [Figure 4](#).

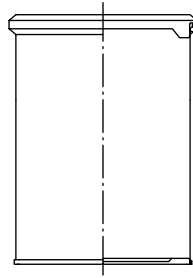


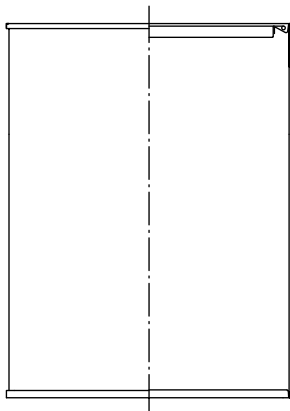
Figure 4 — Full-friction can with clamping ring

3.4.14

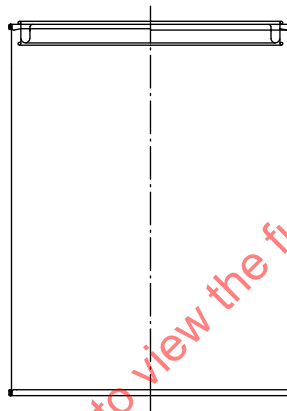
lever-lid can with ring

can with a seamed ring on top and a lid that fits into the ring, which is filled through the closure aperture and is not equipped with a diaphragm

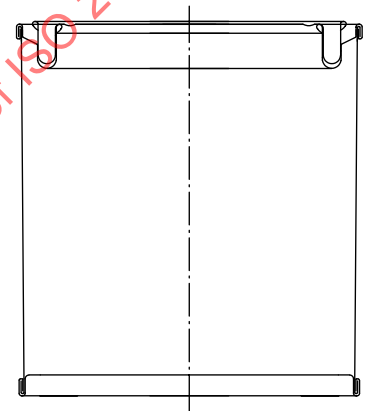
Note 1 to entry: See [Figure 5](#).



a) One ring with single lid



b) One ring with double lids



c) Double rings with double lids

Figure 5 — Lever-lid can with ring

3.4.15

slip-lid can

can with a drawing lid which fits the slider track on both sides of the can body

Note 1 to entry: See [Figure 6](#).

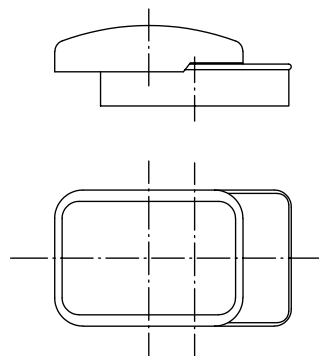


Figure 6 — Slip-lid can

3.4.16

crimped-cover can

pail with a removable cover which is crimped over an external curl around the open end of the can body

Note 1 to entry: See [Figure 7](#).

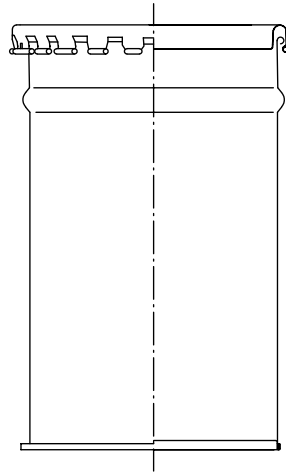


Figure 7 — Crimped-cover can

3.4.17

hooped can

pail with a ring clamping lid tightly

Note 1 to entry: See [Figure 8](#).

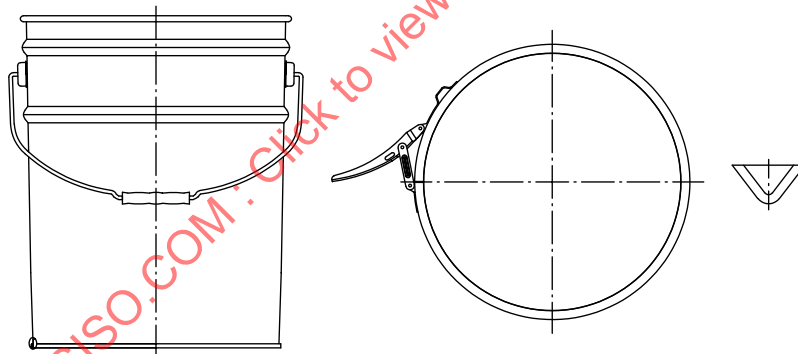


Figure 8 — Hooped can

3.4.18

flat-top can

can with a seamed flat top with an aperture which can be provided with a variety of closures

Note 1 to entry: See [Figure 9](#).

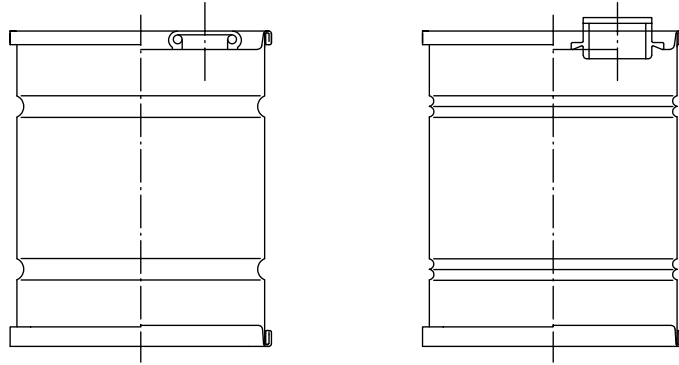


Figure 9 — Flat-top can

3.4.19

cone-top can

can with a seamed cone-shaped top with an aperture which can be provided with a variety of closures

Note 1 to entry: See [Figure 10](#).



Figure 10 — Cone-top can

3.4.20

hinged can

can with hinge, slide fastener and lap joint to fold and close

Note 1 to entry: See [Figure 11](#).

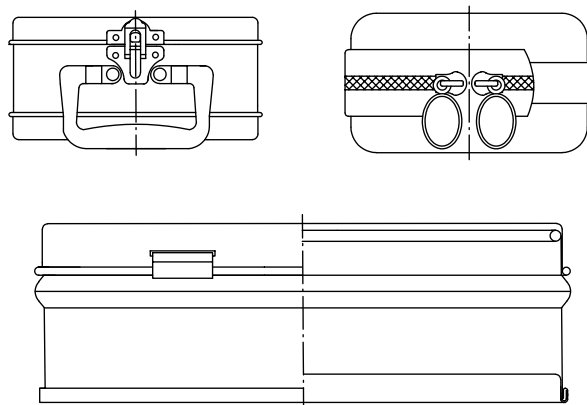


Figure 11 — Hinged can

3.4.21

round can

can with a circular cross-section

Note 1 to entry: See [Figure 12](#).

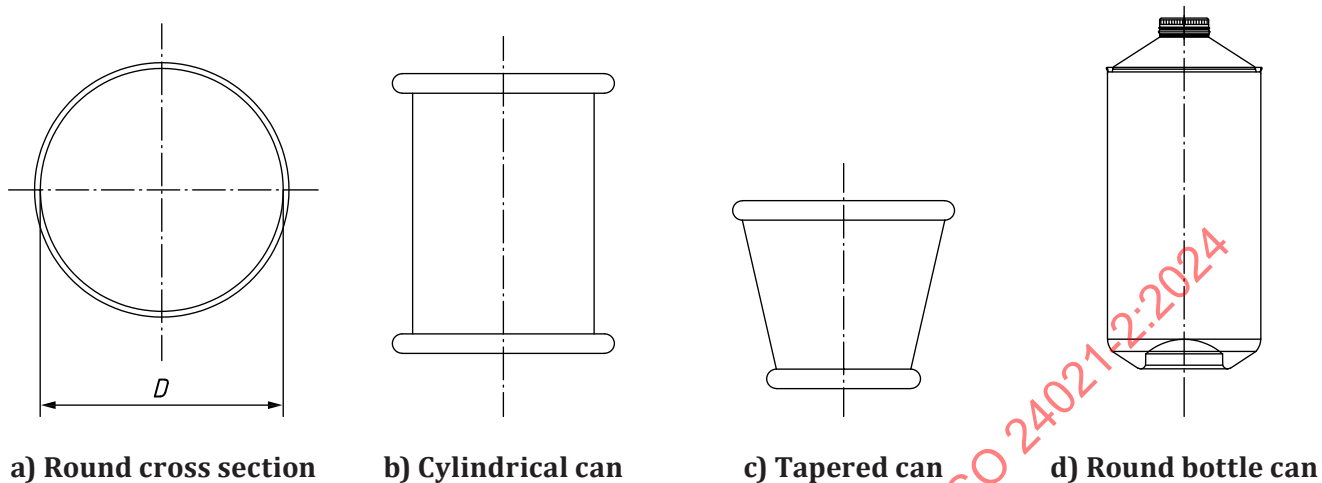


Figure 12 — Round can

3.4.22

rectangular and square can

can with a rectangular or square cross-section

Note 1 to entry: See [Figure 13](#).

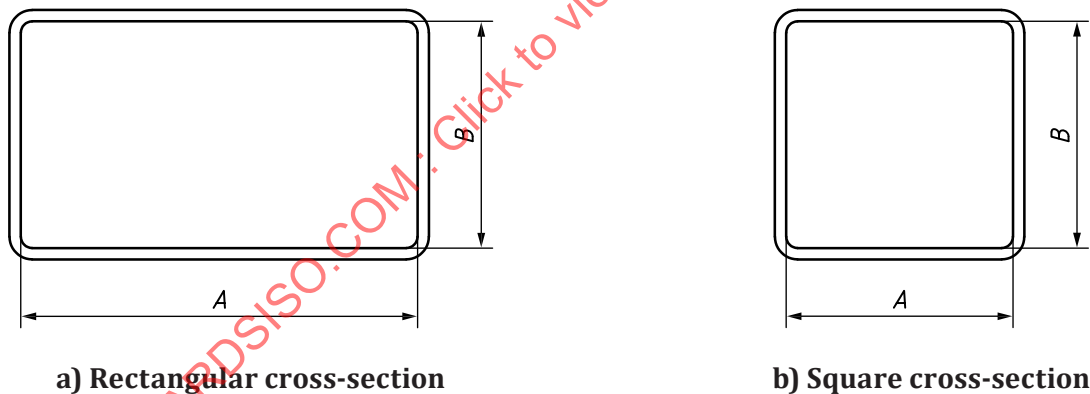


Figure 13 — Rectangular and square can

3.4.23

obround can

can with a cross-section of parallel sides of equal length joined by two curved ends

Note 1 to entry: See [Figure 14](#).

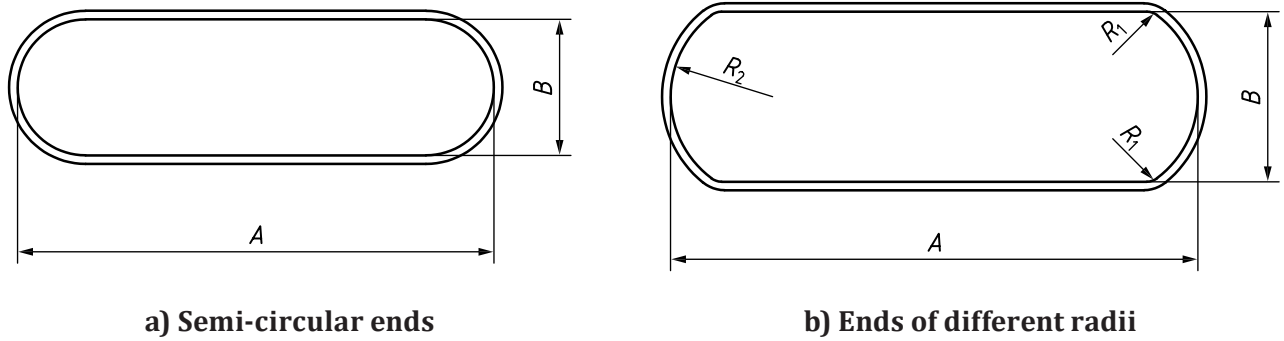


Figure 14 — Obround can

3.4.24 oval can

can with an oval cross-section

Note 1 to entry: See [Figure 15](#).

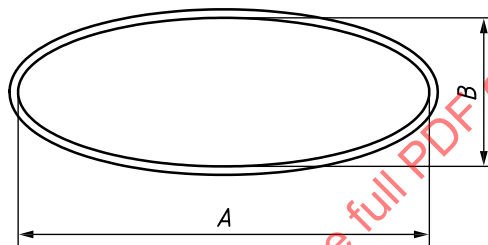


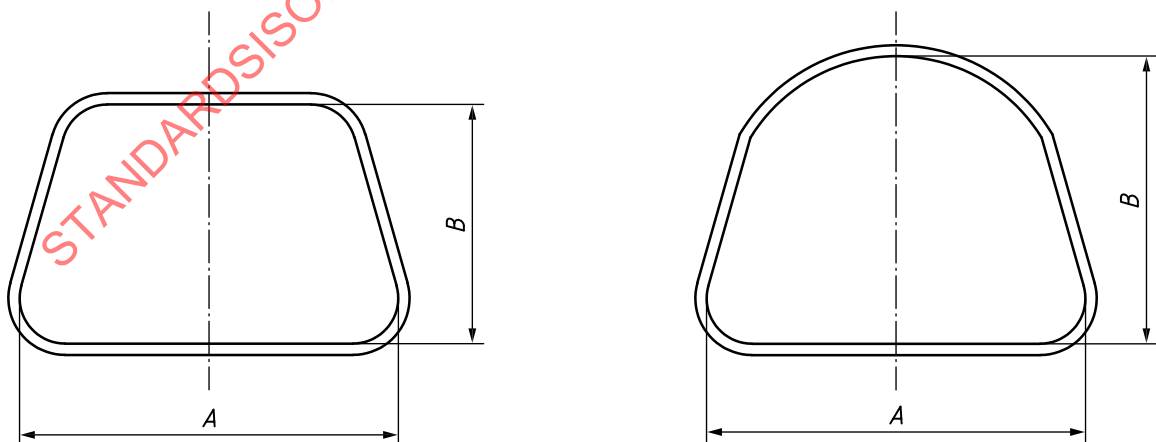
Figure 15 — Oval can

3.4.25 trapezoidal can

can with an approximately trapezoidal cross-section with rounded corners

Note 1 to entry: The shorter of the parallel sides and the non-parallel sides can be curved.

Note 2 to entry: See [Figure 16](#).



a) Trapezoidal can with parallel sides

b) Trapezoidal can with curved sides

Figure 16 — Trapezoidal can