ISO/~~DIS~~PRF 24021-2~~:2023(E)~~

ISO/TC- 52~~/WG 2~~

Secretariat:- SAC

Date: ~~2023~~2024-01-08~~-18~~

Light gauge metal containers — Vocabulary and classification —

Part- 2:
General cans

Récipients métalliques légers — Vocabulaire et classification —

Partie 2: Boîtes à usage général

PROOF

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Published in Switzerland

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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~~www.iso.org/members.html.

Introduction

The terms and classification of open-top cans and ends are specified in ISO 24021-1~~:2022~~. This document is a continuation of ~~the~~ ISO 24021-1~~:2022~~, 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. ~~Of course, there~~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 ~~might~~will not always be adequate for all situations.

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

NOTE2 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 ~~(end hook)~~
CH ~~(EH)~~
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)~~(3.3.1) overlaps the *cover hook* ~~(3.3.2)~~(3.3.2)

3.3.7
rate of overlap
% OL
percentage of overlap
ratio of the *length of overlap* ~~(3.3.6)~~(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)~~(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 ~~**(end hook butting)**~~
CHB ~~**(EHB)**~~
percentage of the can *cover hook* ~~(3.3.2)~~(3.3.2) at the overlap of the seam to the theoretical *cover hook* ~~(3.3.2)~~(3.3.2) length

3.3.11
body hook butting
BHB
percentage of the can *body hook* ~~(3.3.1)~~(3.3.1) at the overlap of the seam to the theoretical *body hook* ~~(3.3.1)~~(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