SLOVENSKI STANDARD
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Komercialni hladilniki pijač - Razvrstitev, zahteve in preskusni pogoji (ISO 22044:2021)

Commercial beverage coolers - Classification, requirements and test conditions (ISO 22044:2021)

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EUROPEAN STANDARD

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Commercial beverage coolers - Classification, requirements and test conditions (ISO 22044:2021)

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Ref. No. EN ISO 22044:2022 E

SIST EN ISO 22044:2022

Contents

Page

iTeh STANDARD
PREVIEW
(standards.iteh.ai)

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

SIST EN ISO 22044:2022

European foreword

This document (EN ISO 22044:2022) has been prepared by Technical Committee ISO/TC 86 "Refrigeration and air-conditioning" in collaboration with Technical Committee CEN/TC 44 “Commercial and Professional Refrigerating Appliances and Systems, Performance and Energy Consumption” the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by July 2022, and conflicting national standards shall be withdrawn at the latest by July 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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PREVIEW
(standards.iteh.ai)

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

SIST EN ISO 22044:2022

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iTeh STANDARD
PREVIEW
(standards.iteh.ai)

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

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PREVIEW
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SIST EN ISO 22044:2022

Contents

Page

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1e52fa910735/sist-en-iso-22044-2022

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SIST EN ISO 22044:2022

iTeh STANDARD
PREVIEW
(standards.iteh.ai)

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

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Foreword

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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).

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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.

This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 7, *Testing and rating of commercial refrigerated display cabinets*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 44, *Commercial and professional refrigerating appliances and systems, performance and energy consumption,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f8003ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

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PREVIEW
(standards.iteh.ai)

SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

SIST EN ISO 22044:2022

Commercial beverage coolers — Classification, requirements and test conditions

1 Scope

This document specifies the classification for commercial beverage coolers and their requirements and test methods. This document is applicable to integral refrigeration systems.

This document is not applicable to remote and secondary system cabinets.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 817, *Refrigerants — Designation and safety classification*

ISO 5149-2, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

IEC 60335-1, *Household and similar electrical appliances — Safety — Part 1: General requirements*

IEC 60335-2-89, *Household and similar electrical appliances — Safety — Part 2-89: Particular requirements for commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or motor-compressor*

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN ISO 22044:2022
https://standards.iteh.ai/catalog/standards/sist/6f0002ed-4aee-4ba1-818c-1c52fa910735/sist-en-iso-22044-2022

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 Types of commercial beverage coolers

3.1.1
commercial beverage cooler
refrigerated cabinets to sell and/or display pre-packaged beverage products that are non-perishable, designed to chill products loaded at ambient temperature to the defined storage temperature class within a specified time and for which the customer is allowed direct access to the products

Note 1 to entry: In Annex A there is the designation of the commercial beverage cooler family.

Note 2 to entry: The customer is an organization or person that receives a product; customer can be internal or external to the organization.

EXAMPLE Consumer, client, end-user, retailer, beneficiary and purchaser.

3.1.2
vertical commercial beverage cooler
beverage cooler with overall height between 0,5 m and 2,2 m

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3.1.3
semi-vertical commercial beverage cooler
vertical beverage cooler for which the overall height does not exceed 1,5 m and having either a vertical or inclined display opening

3.1.4
horizontal commercial beverage cooler
beverage cooler with horizontal display opening on its top and accessible from above

3.1.5
open commercial beverage cooler
horizontal/vertical/semi-vertical beverage cooler where there are not barriers for the access to the displayed products

Note 1 to entry: Do not consider night covers as a barrier for the access to the displayed products.

3.1.6
closed commercial beverage cooler
horizontal/vertical/semi-vertical beverage cooler where access to the displayed product is gained by opening a door or a lid (transparent or solid)

3.2 Parts of commercial beverage coolers

3.2.1
air discharge
opening from which the air curtain emerges

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3.2.2
air return
opening at which the air curtain flows back to the evaporator or heat exchanger inside the commercial beverage cooler air ducts

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https://standards.iteh.ai/catalog/standards/sist/6f0002ed-
iso-22044-2022

3.2.3
shelf
surface excluding the base deck, on which the goods are displayed

3.2.4
night cover
cover permanently integrated into the commercial open beverage cooler used to reduce the heat ingress (e.g. by infrared radiation or convection)

EXAMPLE Covers can be a night curtain, night blind, night lid.

3.2.5
front
side of the commercial beverage cooler facing the consumer

3.2.6
base deck
lowest display surface of a commercial beverage cooler

3.3 Physical aspects and dimensions

3.3.1
refrigerated shelf area
refrigerated display area where the vertical clearance above any shelf or base deck is greater than or equal to 125 mm, measured perpendicularly above the plane of the shelf or base deck and within the bounds of any load limit

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3.3.2
depth
horizontal distance, including rear spacers for air circulation channel, between the front and the rear of the commercial beverage cooler

3.3.3
width
horizontal distance between the two external sides of the commercial beverage cooler

3.3.4
height
vertical distance from the floor to the top of the commercial beverage cooler

Note 1 to entry: If the commercial beverage cooler has adjustable feet, the height defined shall be the minimum and the maximum height necessary at installation of the cooler.

3.3.5
load limit
boundary surface consisting of a plane or several planes within which all M-cans can be maintained within the limits for the M-cans temperature class declared

3.3.6
load limit line
permanently marked boundary line denoting the edge of the load limit surface

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3.3.7
net volume
storage volume inside the appliance which can be used for storage of products

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Note 1 to entry: For the calculation method see Annex B.

3.3.8
gross volume

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volume within the inside walls of the commercial beverage cooler or compartment, including internal fittings, doors or lids, if any, with these being closed, and with the load limit being taken into account if the commercial beverage cooler has no door or lid

3.3.9
equivalent volume
V_{eq}
reference volume corrected for compartment classification differences

3.3.10
total display area
TDA
total visible foodstuffs area, including visible area through the glazing, defined by the sum of horizontal and vertical projected surface areas of the net volume

Note 1 to entry: For the calculation method see Annex D.

3.3.11
footprint
surface occupied by the commercial beverage cooler

3.4 Terms and definitions relating to performance characteristics

3.4.1
air curtain
air flow going from the air discharge towards the air return, thereby limiting both heat and mass transfers between the commercial beverage cooler's gross volume and the surrounding environment

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