

Refrigerated display cabinets - Part 2: Classification,
requirements and test conditions (ISO 23953-2:2015)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 23953-2:2015 sisaldab Euroopa standardi EN ISO 23953-2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 23953-2:2015 consists of the English text of the European standard EN ISO 23953-2:2015.
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English Version

Refrigerated display cabinets - Part 2: Classification,
requirements and test conditions (ISO 23953-2:2015)

Meubles frigorifiques de vente - Partie 2: Classification,
exigences et méthodes d'essai (ISO 23953-2:2015)

Verkaufskühlmöbel - Teil 2: Klassifizierung,
Anforderungen und Prüfbedingungen (ISO 23953-
2:2015)

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European foreword

This document (EN ISO 23953-2:2015) has been prepared by Technical Committee CEN/TC 44 "Commercial refrigerated cabinets, catering refrigerating appliances and industrial refrigeration", the secretariat of which is held by UNI, in collaboration with Technical Committee ISO/TC 86 "Refrigeration and air-conditioning"

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of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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

This document supersedes EN ISO 23953-2:2005.

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Endorsement notice

The text of ISO 23953-2:2015 has been approved by CEN as EN ISO 23953-2:2015 without any modification.

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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).

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The committee responsible for this document is ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 7, and by Technical Committee CEN/TC 44, *Commercial refrigerated cabinets, catering refrigerating appliances and industrial refrigeration* in collaboration.

This second edition cancels and replaces the first edition (ISO 23953-2:2005 and ISO 23953-2:2005/Amd 1:2012), which has been technically revised as follows:

- editorial and technical improvements, corrections and/or clarifications throughout the text to better apply the standard
- addition of a new [Annex D](#) "Performance and energy rating of commercial refrigerated display cabinets"

ISO 23953 consists of the following parts, under the general title *Refrigerated display cabinets*:

- *Part 1: Vocabulary*
- *Part 2: Classification, requirements and test conditions*

Refrigerated display cabinets —

Part 2:

Classification, requirements and test conditions

1 Scope

This part of ISO 23953 specifies requirements for the construction, characteristics and performance of refrigerated display cabinets used in the sale and display of foodstuffs. It specifies test conditions and methods for checking that the requirements have been satisfied, as well as classification of the cabinets, their marking and the list of their characteristics to be declared by the manufacturer. It is not applicable to refrigerated vending machines. It is also not applicable to cabinets intended for storage or cabinets intended for use, for instance, in catering or non-retail refrigerated applications nor does it cover the choice of the types of foodstuffs chosen to be displayed in the cabinets.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 5149-2:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

ISO 23953-1:2015, *Refrigerated display cabinets — Part 1: Vocabulary*

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 with an incorporated or remote refrigerant unit or compressor*

3 Terms, definitions, symbols and abbreviated terms

3.1 General

t_{run}	running time — time during which compressor is running (or solenoid valve is open) or secondary refrigerant is circulating (or solenoid valve is open), within 24 h, expressed in hours
t_{stop}	stopping time — time during which compressor is not running (or solenoid valve is closed) or secondary refrigerant is not circulating (or solenoid valve is closed), within 24 h and excluding defrost time, expressed in hours
t_{defst}	defrost time — time during defrost during which compressor is not running (or solenoid valve is closed) or secondary refrigerant is generally not circulating, within 24 h, but not considered as stopping time, expressed in hours
q_m	mass flow rate of liquid refrigerant or secondary refrigerant in kilograms per second
Δt	time between two consecutive measuring samples, in hours