

Refrigerated display scooping cabinets and pozzetto for gelato - Classification, requirements, performance and energy consumption testing

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16838:2019 sisaldab Euroopa standardi EN 16838:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 16838:2019 consists of the English text of the European standard EN 16838:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.07.2019.	Date of Availability of the European standard is 03.07.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 97.130.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

**Refrigerated display scooping cabinets and pozzetto for
gelato - Classification, requirements, performance and
energy consumption testing**

Vitrines réfrigérées de vente de glace et pozzetto -
Classification, exigences, performance et essai de
consommation énergétique

Verkaufskühlmöbel und Pozzetti für Speiseeis -
Klassifizierung, Anforderungen, Leistung und
Energieaufnahmeprüfung

This European Standard was approved by CEN on 14 March 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	5
4 Symbols and abbreviations	6
5 Requirements	8
5.1 Construction.....	8
5.1.1 General.....	8
5.1.2 Materials.....	8
5.1.3 Refrigerating system.....	9
5.1.4 Electrical components.....	9
5.1.5 Temperature display	9
5.2 Operating characteristics.....	10
5.2.1 Absence of odour and taste.....	10
5.2.2 Classification according to temperature	10
5.2.3 Defrosting	12
5.2.4 Water vapour condensation.....	13
5.2.5 Energy consumption	13
5.2.6 Specific energy consumption.....	13
6 Test condition.....	13
6.1 General.....	13
6.2 Tests outside test room.....	13
6.3 Tests inside test room	15
6.3.1 General.....	15
6.3.2 Test room — General design, walls, floor and radiant heat	15
6.3.3 Preparation and general test procedures for gelato scooping cabinet and pozzetto	24
6.3.4 Temperature test	31
6.3.5 Water vapour condensation test.....	34
6.3.6 Electrical energy consumption test.....	36
6.3.7 Heat extraction rate measurement when condensing unit is remote from gelato scooping cabinet and pozzetto	36
7 Test report.....	43
7.1 General.....	43
7.2 Tests outside test room.....	43
7.3 Tests inside test room	43
7.3.1 General test conditions	43
7.3.2 Gelato scooping cabinet and pozzetto preparation.....	44
7.3.3 Temperature test	45
7.3.4 Water vapour condensation test	46
7.3.5 Electrical energy consumption test.....	46
7.3.6 Heat extraction rate measurement when the condensing unit is remote from the gelato scooping cabinet and pozzetto.....	46
8 Marking.....	48
8.1 Marking plate.....	48

8.2	Information to be supplied by the manufacturer	48
	Annex A (informative) Test for absence of odour and taste.....	50
A.1	Preparation and testing	50
A.1.1	Ambient temperature	50
A.1.2	Cleaning.....	50
A.1.3	Thermostat setting.....	50
A.1.4	Samples	50
A.1.5	Test period	50
A.2	Examination of samples	51
A.2.1	Conditions	51
A.2.2	Evaluation.....	51
	Annex B (normative) Data requirements for performance and energy rating of gelato scooping cabinets and pozzetto.....	52
B.1	Scope	52
B.2	Terms and definitions.....	52
B.3	Data requirements for rating of gelato scooping cabinets and pozzetto with incorporated condensing unit.....	53
B.3.1	General	53
B.3.2	Evaluation of DEC.....	54
B.3.3	Evaluation of FEC	54
B.3.4	Evaluation of LEC	54
B.3.5	Evaluation of AEC.....	55
B.3.6	Evaluation of DFEC	55
B.3.7	Evaluation of PEC.....	55
B.3.8	Other electric energy consumption	55
B.3.9	Alternate components - Effect on DEC.....	55
B.4	Data requirements for rating of gelato scooping cabinets and pozzetto with remote condensing unit.....	55
	Bibliography	57

European foreword

This document (EN 16838:2019) has been prepared by 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 January 2020, and conflicting national standards shall be withdrawn at the latest by January 2020.

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.

This document supersedes EN 16838:2016.

In comparison with the previous edition, the following technical modifications have been made:

- addition of pozzetto in the whole standard;
- title modification in order to get it consistent with the content of the standard;
- update terminology;
- update of existing figures and addition of new figures;
- editorial improvement.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies classification, requirements for the construction, performance and energy consumption testing of gelato scooping cabinets and pozzetto used to sale and/or display artisan and self made gelato. It specifies test conditions and methods for checking that the requirements have been satisfied, their marking and the list of their characteristics to be declared by the manufacturer.

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.

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

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

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

3 Terms and definitions

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

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

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

3.1

gelato scooping cabinets

cabinet cooled by a refrigerating system which enables to store, to display and to scoop artisan and self made gelato contained in tubs, within prescribed temperature limits

Note 1 to entry: Artisan and self made gelato are hereafter called “gelato”.

3.2

pozzetto

cabinet cooled by a refrigerating system which enables to store and to scoop gelato contained in tubs, within prescribed temperature limits

3.3

storage section

non-visible part of the gelato scooping cabinet used only to store the product, separated from the display volume and with a different access

3.4

display section

visible part of the gelato scooping cabinet used to display and to scoop the product