Artisan Gelato and ice cream machinery - Performance characteristics and energy consumption



# EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

	This Estonian standard EVS-EN 16754:2016 consists of the English text of the European standard EN 16754:2016.	
Standard on jõustunud sellekohase te 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 teir Euroopa standardi rahvuslikele liikmet kättesaadavaks 20.01.2016.	Date of Availability of the European standard is 20.01.2016.	
Standard on kättesaadav Eo 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 <u>standardiosakond@evs.ee</u>.

#### ICS 27.010, 67.260

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: Aru 10, 10317 Tallinn, Eesti; koduleht <u>www.evs.ee</u>; telefon 605 5050; e-post <u>info@evs.ee</u>

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:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

# EUROPEAN STANDARD NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

EN 16754

January 2016

ICS 27.010; 67.260

#### **English Version**

# Artisan Gelato and ice cream machinery - Performance characteristics and energy consumption

Machines à glace artisanale et crème glacée -Caractéristiques de performance et consommation d'énergie Maschinen für handwerklich hergestelltes Eis und Speiseeis - Bestimmung von Leistungsmerkmalen und Energieaufnahme

This European Standard was approved by CEN on 21 November 2015.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels

Cont	tents		Page
Europ	pean foreword		
1	Scope		4
2	Normative references		4
3	Terms and definitions		4
4	Performance characteristics		6
4.1	Loading of pasteurizer and cream cooker		6
4.2	Loading of batch freezer		6
4.3	Loading of combined machine		6
4.4	Product temperature/Extrusion temperature		7
4.5	Overrun		
5	Energy consumption test		7
5.1	Test room		7
5.1.1	General design, walls, floor and radiant heat		
5.1.2	Thermal characteristics		
5.2	Apparatus		
5.3	Ambient temperature and humidity		
5.4	Installation		
5.5	Test cycle		
5.5.1	Pasteurizing Test Cycle		
5.5.2	Freezing Test Cycle		
5.5.3	Combined machine test cycle		
5.5.4	Ageing Test Cycle		
5.5.5	Product temperature/Extrusion temperature		
5.5.6	Overrun determination		
5.6	Determination of energy consumption		
5.7	Water consumption test		
5.8	Operating time calculation		
6	Reference test mix		
U			
7	Test report		11
		<b>O</b> .	
			\ /
			(/)

# **European foreword**

This document (EN 16754:2016) has been prepared by Technical Committee CEN/TC 44 "Commercial refrigerated cabinets, 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 2016, and conflicting national standards shall be withdrawn at the latest by July 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

## 1 Scope

This European Standard specifies requirements and test conditions of machines for processing Artisan Gelato, ice cream and similar frozen desserts.

It defines machines performance characteristics and energy consumption, measured under specified conditions and test methods, using a reference test mix.

This European Standard applies to professional machines having a maximum capacity of 400 l, for thermal-treatment of Artisan Gelato, ice cream and similar frozen desserts listed as follows:

- pasteurizers;
- ageing vats;
- cream cookers;
- batch freezers;
- combined machines.

The machine can be factory assembled or field connected to a remote condensing unit.

The machine can include separate remote refrigeration systems for the frozen product and fresh mix and can be either air-cooled or water-cooled.

#### 2 Normative references

Not applicable.

#### 3 Terms and definitions

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

#### 3.1

# compression type machines

machines where the cooling is performed by means of a refrigerant liquid at low pressure in a heat exchanger (evaporator), the steam thus formed becomes a liquid by a mechanical compression higher pressure and cooling in another heat exchanger (condenser)

#### 3.2

#### condenser

heat exchanger in which after compression, the vaporized refrigerant is liquefied, giving off heat to external cooling system

#### 3.3

#### evaporator

heat exchanger in which, after the reduction of pressure, the refrigerant is vaporized by absorbing heat from the medium which is cooled