

GAASIKÜTTEGA PRAEAHJUDE ENERGIAKULU  
MÕÕTMISE MEETOD

Measuring method of the energy consumption of gas  
fired ovens

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 15181:2017 sisaldab Euroopa standardi EN 15181:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 15181:2017 consists of the English text of the European standard EN 15181:2017.
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 01.03.2017.	Date of Availability of the European standard is 01.03.2017.
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](mailto:standardiosakond@evs.ee).

ICS 97.040.20

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](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto: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](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Measuring method of the energy consumption of gas fired ovens

Méthode de mesurage de la consommation d'énergie  
des fours à gaz

Bestimmung des Energieverbrauchs von Gasbacköfen

This European Standard was approved by CEN on 16 January 2017.

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, 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: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

European foreword.....	4
Introduction .....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	7
4 List of measurements .....	7
4.1 Dimensions and mass.....	7
4.2 Energy consumption and heating time .....	7
5 General conditions for measurements.....	8
5.1 General.....	8
5.2 Ambient temperature.....	8
5.3 Test gases and test pressures.....	9
5.4 Electrical supply .....	9
5.5 Load.....	9
5.6 Instrumentation .....	9
5.7 Positioning of the appliance.....	10
5.8 Auxiliary electrical energy.....	10
6 Calculated oven volume and mass .....	10
6.1 Calculation of the oven volume .....	10
6.2 General.....	10
6.2.1 Introduction.....	10
6.2.2 Usable height .....	12
6.2.3 Usable width .....	12
6.2.4 Usable depth .....	12
6.2.5 Calculated volume.....	13
6.3 Mass of the oven.....	13
7 Energy consumption and time.....	13
7.1 Measurement of oven temperature.....	13
7.2 Energy consumption and time for heating a load.....	13
7.2.1 Purpose.....	13
7.2.2 Preparation .....	13
7.2.3 Measurement.....	14
8 Data to be provided for the technical file .....	18
9 Uncertainty and verification procedures.....	19
9.1 Energy consumption .....	19
9.2 Oven volume .....	19
9.3 Measured oven temperature .....	19
9.4 Mass of the oven.....	19
Annex A (normative) Description of the test brick and position of the thermocouples .....	20
A.1 Specification.....	20
A.2 Position of the thermocouples .....	20
Annex B (informative) Explanation of the formulae .....	21

<b>B.1</b>	<b>Explanation of the Formulae Subscripts .....</b>	<b>21</b>
<b>B.2</b>	<b>Explanation of the Formulae Superscripts.....</b>	<b>21</b>
<b>Annex C (normative)</b>	<b>Calculation sheet .....</b>	<b>22</b>
<b>Annex D (informative)</b>	<b>Marking the temperature setting for checking the oven temperature ....</b>	<b>24</b>
<b>Annex ZA (informative)</b>	<b>Coverage of Requirements of Delegated Regulation (EC) No 65/2014/EU and of Commission Regulation No 66/2014/EU .....</b>	<b>25</b>
<b>Bibliography</b>	<b>.....</b>	<b>26</b>

## European foreword

This document (EN 15181:2017) has been prepared by Technical Committee CEN/TC 49 “Gas cooking appliances”, 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 September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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 15181:2008.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The main changes to the previous version of EN 15181:2008 are the following:

- the implementation of Annex ZA which shows the coverage of Regulation 66/2014 concerning Ecodesign requirements for domestic ovens, hobs and range hoods and of Delegated Regulation 65/2014 on the Energy Labelling of domestic ovens and range hoods;
- the verification procedure for ensuring that the temperature inside the oven cavity reaches the temperature setting of the thermostat and/or the oven control display within the duration of the test cycle for measuring the energy consumption;
- the revision of Clause 9, Uncertainty and verification procedures;
- the amending of Clause 6, Calculated oven volume and mass, to ensure high reproducibility.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

The object of this European Standard is to specify, in accordance with Regulation 66/2014 concerning Ecodesign requirements for domestic ovens, hobs and range hoods and of Delegated Regulation 65/2014 on the Energy Labelling of domestic ovens and range hoods:

- energy consumption using a standardized load during a standardized procedure,
- some performance characteristics (like volume, correspondence between set and measured oven temperature, permitted tolerances to values declared by the manufacturer and control procedures for checking the declared values).

## 1 Scope

This European Standard specifies the method of test for determining the gas energy consumption in gas-fired domestic ovens when they are being used in one or more of the oven cooking modes defined in 3.1. It applies to the gas-fired domestic ovens which are capable of utilizing gases of group H or group E, possibly after conversion according to instructions for use.

This European Standard applies to these gas-fired domestic ovens, whether they are separate appliances or component parts of domestic cooking appliances.

This European Standard also applies to domestic appliances that can utilize gas and/or electrical energy to provide heat for cooking when the ovens are utilizing gas energy to provide heat for cooking, but not when electric energy is used to provide any or all of the heat for cooking in the oven.

It is not applicable to:

- microwave combination ovens;
- small cavities ovens (3.2);
- oven cavities not provided with devices to detect and control the temperature for the preparation of food;
- cooking modes others than defined in 3.1.1 and 3.1.2;
- ovens connected to a chimney in which the gas energy for cooking provides, by design, also space and/or water heating;
- appliances designed for use with gases of the third family only.

This European Standard is concerned neither with safety nor with overall performance requirements.

## 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.

EN 30-1-1:2008+A3:2013, *Domestic cooking appliances burning gas - Part 1-1: Safety - General*

EN 30-1-2:2012, *Domestic cooking appliances burning gas - Safety - Part 1-2: Appliances having forced-convection ovens and/or grills*

EN 30-1-4:2012, *Domestic cooking appliances burning gas - Safety - Part 1-4: Appliances having one or more burners with an automatic burner control system*

EN 60584-1:2013, *Thermocouples — Part 2: Tolerances (IEC 60584-1)*