

Aerospace series - ECO efficiency of catering equipment  
- Part 02: Oven equipment

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 4855-02:2020 sisaldab Euroopa standardi EN 4855-02:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 4855-02:2020 consists of the English text of the European standard EN 4855-02:2020.
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 12.02.2020.	Date of Availability of the European standard is 12.02.2020.
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 49.020, 67.250

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)

EUROPEAN STANDARD

**EN 4855-02**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2020

ICS 49.020; 67.250

English Version

## Aerospace series - ECO efficiency of catering equipment - Part 02: Oven equipment

Série aérospatiale - Efficacité du matériel de  
restauration - Partie 02 : Fours

Luft- und Raumfahrt - ECO-Effizienz von  
Cateringgeräten - Teil 02: Öfen

This European Standard was approved by CEN on 12 August 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.....	3
Introduction .....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions .....	5
4 Symbols and abbreviations .....	6
5 General test conditions .....	7
5.1 Measurements and calculations for oven equipment.....	7
5.2 Environmental conditions .....	7
5.3 Power supply and voltage .....	7
5.4 Measurement equipment.....	7
5.5 Test set up.....	7
5.6 Test medium .....	7
5.7 General conditions for weight measurement .....	7
6 Test Procedures.....	8
6.1 Preparation of test medium .....	8
6.2 Test preparation.....	9
7 Evaluation and calculation .....	9
7.1 General.....	9
7.2 Calculation of energy consumption index (ECI) for oven equipment .....	9
7.3 Calculation of performance index (PI) .....	10
7.4 Test report.....	11
7.5 Calculation sheet .....	11
Bibliography.....	12

## European foreword

This document (EN 4855-02:2020) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

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 August 2020, and conflicting national standards shall be withdrawn at the latest by August 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.

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.

## **Introduction**

During aircraft operations, the food preparation in the cabin is mandatory to maintain the catering on board. There exist different equipment types to heat up the prepared meals for the passengers in the cabin. On the one hand meals can be heated by usage of steam (steam ovens); on the other hand it can be heated by usage of hot and dry air (convection oven). To meet the target to determine an energy efficiency index for aircraft oven equipment the purpose of this document is to standardize the test procedure and efficiency calculations for this equipment type.

## 1 Scope

This European standard describes a test procedure to identify performance characteristics and a weight rating of convection and steam ovens used on aircraft. Furthermore it describes the calculation procedure to determine an energy consumption index and a performance index. There is no direct correlation between the Eco efficiency and cooking performance in terms of food quality and appearance. The two index values represent the Eco efficiency.

## 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 4855-01, *Aerospace series — ECO efficiency of catering equipment— Part 1: General conditions*<sup>1</sup>

EN 60350-1, *Household electric cooking appliances — Part 1: Ranges, ovens, steam ovens and grills — Methods for measuring performance*

ARINC 810, *Definition of standard interfaces for galley insert (gain) equipment physical interfaces*<sup>2</sup>

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 4855-01 and the following apply.

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

— ISO Online browsing platform: available at <http://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **catering equipment**

equipment installed in an aircraft to provide or support food or beverage service

Note 1 to entry: Includes ovens, beverage makers, water heaters and chilling equipment.

### 3.2

#### **oven equipment**

equipment with a cavity to heat, bake and roast food or meals to elevated temperatures

Note 1 to entry: This equipment type includes convection and steam ovens.

#### 3.2.1

##### **steam oven**

heating mode with usage of steam to heat up the food in the inner cavity of the oven

---

1 Published as ASD-STAN Prestandard at the date of publication of this standard by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN) ([www.asd-stan.org](http://www.asd-stan.org)).

2 Published by Rockwell Collins ([www.rockwellcollins.com](http://www.rockwellcollins.com))