SLOVENSKI STANDARD
oSIST prEN IEC 63437:2025

01-maj-2025

Hladilni aparati za delovanje izven omrežja in pri nezanesljivem omrežju za domačo in lahkotno komercialno uporabo - Značilnosti in preskusne metode - Zahtevane lastnosti in poraba energije

Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption

Appareils de réfrigération hors réseau et sur réseau peu fiable pour un usage domestique et commercial léger - Caractéristiques et méthodes d'essai - Exigences d'aptitude à la fonction et consommation d'énergie

Ta slovenski standard je istoveten z: **prEN IEC 63437:2025**

ICS:

97.040.30	Hladilni aparati za dom	Domestic refrigerating appliances

oSIST prEN IEC 63437:2025 **en**

59M/182/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 63437 ED1**	
DATE OF CIRCULATION: **2025-03-14**	CLOSING DATE FOR VOTING: **2025-06-06**
SUPERSEDES DOCUMENTS: **59M/173/CD, 59M/177A/CC**	

IEC SC 59M : PERFORMANCE OF ELECTRICAL HOUSEHOLD AND SIMILAR COOLING AND FREEZING APPLIANCES	
SECRETARIAT: Italy	SECRETARY: Ms Milena Presutto
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED: Energy Efficiency,Environment	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING **Attention IEC-CENELEC parallel voting** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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Recipients of this document are invited to submit, with their comments, notification of any relevant “In Some Countries” clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

The CDV of IEC 63437 Ed1 has been prepared by SC59M/WG6 Test standard for refrigerated appliances for use with off grid or weak grid, under the convenorship of Mr Patrick Becks.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OFF GRID AND UNRELIABLE GRID REFRIGERATING APPLIANCES FOR DOMESTIC AND LIGHT COMMERCIAL USE - CHARACTERISTICS AND TEST METHODS – PERFORMANCE REQUIREMENTS AND ENERGY CONSUMPTION

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IEC 63437 has been prepared by subcommittee 59M/WG6: Performance of electrical household and similar cooling and freezing appliances, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

Background information and arguments for this standard are provided in Annex B.

The following print types are used in this international standard:

– requirements: in roman type;

– test variables: in *italic* type;

– notes: in small roman type.

– words in **bold** are defined in Clause 0;

The text of this International Standard is based on the following documents:

Draft	Report on voting

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

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OFF GRID AND UNRELIABLE GRID REFRIGERATING APPLIANCES FOR DOMESTIC AND LIGHT COMMERCIAL USE- CHARACTERISTICS AND TEST METHODS – PERFORMANCE REQUIREMENTS AND ENERGY CONSUMPTION

1 Scope

This document specifies the essential characteristics of **off grid** and **unreliable grid refrigerating appliances** for domestic and similar use or **light commercial use**, cooled by internal natural or forced air convection. It defines input voltage supply signals for appliances designed for **unreliable grid** and **off grid** conditions.

An **unreliable grid** condition can be the result of disturbances on the electricity supply, such as **power outages**, or issues with power quality, such as voltage spikes and surges, that could cause performance challenges to refrigerating appliances**.** An **off grid** supply, in this context, for example is generated by a **solar panel** or a stand-alone solar home system that is not connected to the power grid. The standard simulates the power characteristics in off grid and unreliable grid conditions but does not prescribe requirements or test procedures to assess performance of generators, **solar panels**, solar home system or any other system generating a supply signal.

The supply signals defined in this document can also be used for evaluation of the performance of other **refrigerating appliances** such as medical or laboratory appliances, professional storage **refrigerators** and/or **freezers**, refrigerated display cabinets, beverage coolers or ice cream **freezers**.

This standard prescribes the test methods for measuring the functional performance characteristics and requirements. The standard does not apply to **refrigerating appliances** designed for a good quality and stable electricity grid and **refrigerating appliances** utilising fuelled absorption cooling technology.

This standard is applicable to any **refrigerating appliance** for domestic or **light commercial use** that has a **rated** performance to properly operate **off grid** or under **unreliable grid** operating conditions resisting power interruptions and supply variations. **Off grid** and **unreliable grid refrigerating appliances** are appliances intended to for use with standalone or intermittent and/or distorted electrical mains. Electrical mains supply is assumed to be alternating current (AC) for **unreliable grid** or direct current (DC) for **off grid**. The standard is also applicable to **hybrid refrigerating appliances.**

The test procedures primary focus on the performance of the overall **refrigerating appliances** and not on the specific performance of **auxiliary** components such as electrical batteries**, inverters** or **rectifiers** or any device intended to improve the power quality but external to the appliance itself. In case a **refrigerating appliance** is supplied with control unit, an **electrical battery**, a **voltage protector**, an **inverter** or a **rectifier** in the original product packaging, these components are considered as a component of the **refrigerating appliance** and should be connected during testing.

The tests defined in this standard aim to assess the fundamental design and functional operation of the **refrigerating appliance** as well as its resilience to given power quality issues.

Unreliable Grid (UG) **refrigerating appliance** categories in scope:

1. $UG_{intermittent}$: AC voltage supplied **refrigerating appliances** designed for proper operation during intermittent **power outages**, containing an internal **thermal store** and/or **electrical battery**.

2. $UG_{distorted}$: AC voltage **refrigerating appliances** designed for operation when connected to a **distorted grid** supply (for example **voltage sags** or **voltage surges**).

3. $UG_{intermittent+distorted}$ AC voltage **refrigerating appliances** designed for operation with **intermittent grid** / **power outages** and **distorted grid** supply (combination of 1 and 2).

Off Grid (OG) **refrigerating appliance** categories in scope:

- OG_{SDD}: DC voltage supplied **solar direct drive refrigerating appliance**s, designed for direct connection to a photovoltaic **solar panel**, containing an internal **thermal store** with an optional **electrical battery** to supply auxiliaries such as a controller, lighting or fans. The compressor of the appliance is directly supplied by the **solar panel**.

- $OG_{battery\ supported}$: DC voltage supplied, **electrical battery supported** solar **refrigerating appliance** designed for direct connection to a photovoltaic **solar panel**, incorporating an **electrical battery** to supply the compressor when there is insufficient solar power. These appliances may also have internal **thermal store**. The **electrical battery** is charged by the **solar panel** only. The battery should be part of the appliance or should be supplied in the same packaging of the appliance.

- $OG_{intermittent}$: DC voltage supplied **refrigerating appliance** designed for proper operation during **power outages**, containing an internal **thermal store** and/or **electrical battery**.

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- $OG_{continuous}$: Continuous DC voltage supplied **refrigerating appliance**s, without any internal **thermal store** and **electrical battery**.