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Domestic gas cooking appliances — Safety —

Part 22: Particular requirements for ovens and compartment grills

Appareils de cuisson domestiques utilisant les combustibles gazeux — Sécurité —
Partie 22: Exigences particulières pour les fours et compartiments de grillage

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 291, *Domestic gas cooking appliances*.

A list of all parts in the ISO 21364 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document provides general requirements for safety of domestic gas cooking appliances.

This document can also be applied, so far as is reasonable, to appliances not mentioned in this specific standard and to appliances designed on the basis of new principles, in which case additional requirements may be necessary.

Where no specific document for an appliance exists, the appliance can be tested according to this document and further tests which take into account the intended use.

Gas burning appliances using fuel gases need to withstand the type of gas which is specified. Other ISO technical committees, e.g. ISO/TC 193, Natural gas, deal with the testing and properties of fuel gases.

Note that, due to the differing properties of fuel gas depending on its source/region of origin, certain differences in regulations exist at present in different regions; some of these differences are presented in Annex E.

This document covers type testing.

This document series is structured as follows:

ISO 21364 Domestic gas cooking appliances – Safety

— Part 1: General requirements

— Part 21: Particular requirements for hobs, surface grills and griddles

— Part 22: Particular requirements for ovens and compartment grills

This document is to be used in conjunction with ISO/FDIS 21364-1:2020.

This document is designed to be used in combination with ISO 21364-1. Together, they establish the full requirements as they apply to the product covered by this document. Where needed, this document adapts ISO 21364-1 by stating in the corresponding clause:

- “with the following modification”;
- “with the following addition”;
- “is replaced by the following”;

or

- “is not applicable”.

In order to identify specific requirements that are particular to this document, that are not already covered by ISO 21364-1, this document may contain clauses or subclauses that are additional to the structure of ISO 21364-1.

To ensure global relevance of this document, the differing requirements resulting from practical experience and installation practices in various regions of the world have been taken into account. The variations in basic infrastructure associated with appliances have also been recognized, some of which are addressed in Annexes E. This document intends to provide a basic framework of requirements that recognize these differences.

Domestic gas cooking appliances — Safety —

Part 22:
Particular requirements for ovens and compartment grills

1 Scope

This document specifies particular requirements for safety, construction and materials of domestic gas ovens and compartment grills. For general requirements for safety, construction and materials of gas ovens and compartment grills, ISO/FDIS 21364-1:2020 applies.

This document covers the following gas cooking appliances:

— ovens with natural or forced convection;

— pyrolytic-self-cleaning ovens and pyrolytic-self-cleaning compartment grills;

— compartment grills

being built-in, table top or part of a cooking range.

— oven accessories

It does not cover gas ovens and compartment grills intended for outdoor use and/or commercial use as well as electrical heated elements as part of the appliance. It does also not cover appliances with automatic burner control systems.

NOTE 1 For requirements of electrical safety refer to the IEC60335 standards series.

NOTE 2 Attention is drawn to the fact that

— for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;

— in many countries additional requirements are specified by the national health authorities, the national water supply authorities and similar authorities.

This document does not cover requirements relating to gas cylinders, their pressure regulators and their connections.

This document does not cover requirements for gas installation.

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.

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO/FDIS 21364-1[1)]:2020, *Domestic gas cooking appliances – Safety- Part 1: General requirements*

1) Under preparation. Stage at the time of publication: ISO/FDIS 21364-1:2020.

ISO/FDIS 21364-21[2]:2020, *Domestic gas cooking appliances – Safety – Part 21: Particular requirements for gas hobs, gas grills and gas griddles*

IEC 60335-2-102:2017, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60584-1:2013, *Thermocouples - Part 1: EMF specifications and tolerances*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

3 Terms and definitions

For the purposes of this document, the terms and definitions of ISO/FDIS 21364-1:2020 apply with the following additions.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

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

3.1 Definitions relating to appliances

3.1.1
pyrolytic self-cleaning oven
oven in which cooking deposits are removed by heating the oven to a temperature exceeding 350 °C

[SOURCE: IEC 60335-2-6:2014, 3.105]

3.1.2
cooking surface
horizontal surface of the hob section

3.1.3
forced convection mode
heating mode for appliances equipped with a fan intended to assist the transmission of heat by creating a forced circulation of air or products of combustion

Note 1 to entry: This fan is not intended to supply combustion air.

3.2 Definitions relating to components

3.2.1
evacuation duct
device for transporting combustion products out of the appliance

4 Components in gas cooking appliances

Clause 4 of ISO/FDIS 21364-1:2020 applies.

4.1 General

ISO/FDIS 21364-1:2020, 4.1 applies.

2) Under preparation. Stage at the time of publication: ISO/FDIS 21364-21:2020.

4.2 Manual gas shut-off valves (Taps)

ISO/FDIS 21364-1:2020, 4.2 applies.

4.3 Knobs

ISO/FDIS 21364-1:2020, 4.3 applies.

4.4 Multifunctional controls

ISO/FDIS 21364-1:2020, 4.4 applies.

4.5 Thermoelectric flame supervision controls

ISO/FDIS 21364-1:2020, 4.5 applies.

4.6 Thermostats

ISO/FDIS 21364-1:2020, 4.6 applies.

4.7 Pressure regulators

ISO/FDIS 21364-1:2020, 4.7 applies.

4.8 Automatic shut-off valves

ISO/FDIS 21364-1:2020, 4.8 applies.

4.9 Injectors and adjusters

ISO/FDIS 21364-1:2020, 4.9 applies.

4.10 Ignition systems

ISO/FDIS 21364-1:2020, 4.10 applies.

4.11 Thermal cut-outs

ISO/FDIS 21364-1:2020, 4.11 applies.

4.12 Cooling fan

A motor of a cooling fan shall conform with the requirements of IEC 60335-2-102:2017.

If the appliance has a cooling fan, the fan shall operate automatically.

4.13 Forced convection fan

The motor of a forced convection fan shall comply with the requirements of IEC 60335-2-102:2017.

5 General conditions of test

Clause 5 of ISO/FDIS 21364-1:2020 applies.

5.1 Reference conditions

ISO/FDIS 21364-1:2020, 5.1 applies.

5.2 Reference and test gases

ISO/FDIS 21364-1:2020, 5.2 applies.

5.3 Test pressures

ISO/FDIS 21364-1:2020, 5.3 applies.

5.4 Temperature conditions

ISO/FDIS 21364-1:2020, 5.4 applies.

5.5 Adjustment of the burner

ISO/FDIS 21364-1:2020, 5.5 applies.

5.6 Test installation

ISO/FDIS 21364-1:2020, 5.6 applies.

5.7 Characteristics of the test pans

ISO/FDIS 21364-1:2020, 5.7 applies.

5.8 Ovens or compartment grills operated in the forced convection mode

Ovens and compartment grills that can be operated in the forced convection mode are tested in the same way as ovens or grills operated with natural convection, but operated in the forced convection mode.

5.9 Portable ovens and compartment grills

Portable ovens and compartment grills are tested according to all the applicable clauses for ovens and compartment grills with the exception of 7.3.5.2, 12.2, 12.3, 12.4 and 12.5.

6 Heat input

Clause 6 of ISO/FDIS 21364-1:2020 applies.

6.1 General

ISO/FDIS 21364-1:2020, 6.1 applies.

6.2 Obtaining the nominal heat input

ISO/FDIS 21364-1:2020, 6.2 applies, with the following additions.

6.2.1 Test of oven and compartment grill with a thermostat

The burner of an appliance with thermostat is tested under the following conditions:

— the burner is ignited and operated with the thermostat at full rate at normal pressure and with the door closed or open to avoid cycling of the thermostat;

— measuring begins from ignition. For analogue meters, measuring terminates when the highest number of complete revolutions have been made before the end of the fifth minute. The test shall be finished before the thermostat starts cycling.

Then the heat input is calculated under reference conditions according to ISO/FDIS 21364-1:2020, 6.3.

6.2.2 Test of oven and compartment grill without a thermostat

The burner of an appliance without a thermostat is tested under the following conditions:

— with the appliance at ambient temperature, the burner is ignited and operated at full rate at normal pressure for 10 min;

— measurement starts at the end of the tenth minute and finishes at the latest at the end of the thirteenth minute, with a minimum measurement time of one minute or when the highest number of complete revolutions of the meter have been made before the end of the thirteenth minute. For analogue meters, the measurement shall be taken over at least one complete revolution.

Then the heat input is calculated under reference conditions according to ISO/FDIS 21364-1:2020, 6.3.

6.3 Measurements and calculations

ISO/FDIS 21364-1:2020, 6.3 applies.

6.4 Obtaining the reduced heat input

ISO/FDIS 21364-1:2020, 6.4 applies with the following additions.

6.4.1 Requirement

ISO/FDIS 21364-1:2020, 6.4.1 applies.

6.4.2 Test

ISO/FDIS 21364-1:2020, 6.4.2 applies.

6.4.3 Test of oven and compartment grill burner

The reduced heat input shall be measured after the nominal heat input at the same conditions with the oven door closed and the gas control is changed to reduced rate. For appliances with thermostatic regulation, the measurement shall be done after 30 minutes, with a minimum measurement time of one minute. If using analogue meters, measurements shall be taken over at least one complete revolution of the analogue meter.

6.5 Total heat input

ISO/FDIS 21364-1:2020, 6.5 applies.

7 Heating

Clause 7 of ISO/FDIS 21364-1:2020 applies with the following additions:

7.1 General

ISO/FDIS 21364-1:2020, 7.1 applies.