ULC-S649:2006-R2021
(Reaffirmed 2021)

STANDARD FOR GREASE FILTERS FOR COMMERCIAL AND INSTITUTIONAL KITCHEN EXHAUST SYSTEMS



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Standard for Grease Filters for Commercial and Institutional Kitchen Exhaust Systems, ULC-S649

Second Edition, Dated July 1, 2006

Summary of Topics

This revision ULC-S649 dated March 26, 2021 is being issued to update the title page to reflect the reaffirmation of this Second Edition. No changes in requirements are involved.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated November 13, 2020.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD. IN THOSE INSTANCES, THE RELEVANT VERSIONS ARE AVAILABLE FOR PURCHASE.

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STANDARD FOR GREASE FILTERS FOR COMMERCIAL AND INSTITUTIONAL KITCHEN EXHAUST SYSTEMS

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This list represents the membership at the time the Committee balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

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REFERENCE PUBLICATIONS

The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which the Committee approved this ULC Standard.

Standard Published by the National Fire Protection Association (NFPA)
1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, U.S.A.,
Tel: (617) 770-3000

• NFPA 96 (2001 edition), Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations

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PREFACE

This is the Second Edition of the Standard for Grease Filters for Commercial and Institutional Kitchen Exhaust Fans, ULC-S649.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Kitchen Exhaust Equipment and Systems.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patents rights. ULC Standards shall not be held responsible for identifying any or all such patents rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

The initiation of the review of this Standard will commence within 5 years of the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

Comments or proposals for revisions on any part of the Standard may be submitted at any time. Proposals should be submitted via a Proposal Request in the On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com/canada.

This Standard is intended to be used for conformity assessment.

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1 SCOPE

1.1 This Standard applies to grease filters for installation in collection hoods of commercial kitchen exhaust systems for conformance with NFPA 96 requirements.

1.2 Grease filters are investigated to determine their abilities to:

A Remove atomized grease from the airstream;

B Limit the projection of flames downstream when attacked by flame on the upstream face, after exposure to grease-laden air;

C Drain off the collected grease in such a manner that it will not drip off the surface or pose a risk of fire; and

D Have the structural integrity necessary for rough field handling, cleaning and maintenance.

2 CONSTRUCTION

2.1 MATERIALS

2.1.1 Grease filters shall be made of noncombustible materials.

2.1.2 Grease filters shall not have sharp edges such as to cause injury to maintenance personnel.

2.2 DESIGN

2.2.1 Grease filters shall be designed to remove grease and particulate from exhaust air without progressively increasing resistance to flow.

2.2.2 Grease filters shall be designed to provide drainage at both ends and on both faces to drain collected contaminants to a trough for disposal purposes.

3 PERFORMANCE

3.1 SAMPLES

3.1.1 Six representative filters measuring approximately 500 mm by 500 mm shall be selected for test purposes.

3.2 GREASE EXTRACTION TEST

3.2.1 Test Equipment

3.2.1.1 A hood designed to conform with the requirements of the Standard for the Installation of Equipment for the Removal of Smoke and Grease-laden Vapors from Commercial Cooking Equipment, NFPA 96, for holding two 500 mm by 500 mm grease filters at a 45° angle and equipped with a 400 mm square collar at the top for connection to an exhaust duct. The hood is also to be provided with a trough and cup for the collection of grease draining from the filters. The exhaust hood is to be mounted over an electric broiler, approximately 900 mm wide and 600 mm deep; having a power input of 15.5 kW.

3.2.1.2 The hood is to be connected to an exhaust duct, 400 mm square, equipped with an exhaust blower, a damper to permit adjustment of the air velocity through the grease filter, and a ceramic glass window to permit a view of any flame downstream of the connection collar.

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