



# UL 737

## STANDARD FOR SAFETY

### Fireplace Stoves

[ULNORM.COM](https://www.ulnorm.com) : Click to view the full PDF of UL 737 2020

[ULNORM.COM](https://ULNORM.COM) : Click to view the full PDF of UL 737 2020

UL Standard for Safety for Fireplace Stoves, UL 737

Tenth Edition, Dated April 25, 2011

### **Summary of Topics**

***This revision of ANSI/UL 737 dated February 25, 2020 includes the following changes in requirements:***

- Addition of reference to UL 62368-1 as an alternative to UL 60950-1; [3.9.1](#) and [3.9.2](#).***
- Addition of reference to UL 61800-5-1 as an alternative to UL 508C; [3.5.3.1](#) and [36.18](#).***

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 revised requirements are substantially in accordance with Proposal (s) on this subject dated November 29, 2019.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical, photocopying, recording, or otherwise without prior permission of UL.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

No Text on This Page

[ULNORM.COM](http://ULNORM.COM) : Click to view the full PDF of UL 737 2020

**APRIL 25, 2011**  
(Title Page Reprinted: February 25, 2020)



**ANSI/UL 737-2020**

1

## **UL 737**

### **Standard for Fireplace Stoves**

First Edition – June, 1968  
Second Edition – November, 1971  
Third Edition – April, 1975  
Fourth Edition – May, 1978  
Fifth Edition – March, 1982  
Sixth Edition – September, 1988  
Seventh Edition – March, 1995  
Eighth Edition – May, 1996  
Ninth Edition – November, 2007

### **Tenth Edition**

**April 25, 2011**

This ANSI/UL Standard for Safety consists of the Tenth Edition including revisions through February 25, 2020.

The most recent designation of ANSI/UL 737 as a Reaffirmed American National Standard (ANS) occurred on January 8, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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

UL's Standards for Safety are copyrighted by UL. Neither a printed nor electronic copy of a Standard should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

**COPYRIGHT © 2020 UNDERWRITERS LABORATORIES INC.**

No Text on This Page

[ULNORM.COM](http://ULNORM.COM) : Click to view the full PDF of UL 737 2020

## CONTENTS

### INTRODUCTION

1	Scope .....	7
2	Glossary .....	7
3	Components .....	8
3.1	General .....	8
3.2	Attachment plugs, receptacles, connectors, and terminals .....	9
3.3	Boxes and raceways .....	10
3.4	Capacitors and filters .....	10
3.5	Controls .....	11
3.6	Cords, cables, and internal wiring .....	12
3.7	Overcurrent protection .....	13
3.8	Polymeric materials and enclosures .....	13
3.9	Power supplies .....	13
3.10	Printed wiring boards .....	14
3.11	Switches .....	14
3.12	Transformers .....	15
4	Undated References .....	15
5	General .....	15
6	Materials .....	15
7	Assembly .....	17
7.1	General .....	17
7.2	Flue damper .....	18
7.3	Fire screen .....	18
7.4	Flue collar .....	18
7.5	Radiation shield and baffle .....	18
7.6	Thermostatic control .....	18
7.7	Grate .....	18
7.8	Separable handle .....	19
7.9	Barometric draft regulator .....	19
7.10	Combustion air duct system .....	19

### PERFORMANCE

8	General .....	19
9	Test Installation .....	20
10	Temperature Measurement .....	24
11	Fire Tests .....	29
12	Radiant Fire Test .....	34
13	Brand Fire Test .....	37
14	Flash Fire Test .....	41
15	Glazing Test .....	42
15.1	General .....	42
15.2	Impact test .....	42
15.3	Water shock test .....	43
16	Strength Tests .....	43
16.1	Fire chamber .....	43
16.2	Chimney connector .....	48
17	Stability Test .....	50

### FIREPLACE STOVES FOR USE IN MOBILE HOMES

18	Installation .....	51
----	--------------------	----

19	Chimney .....	51
20	Spark Arrester .....	51
21	Combustion Air Inlet .....	52
22	Test Structure .....	52
23	Test Method .....	53
24	Drop Test .....	55

## BLOWER ASSEMBLY

### GENERAL

25	General .....	55
----	---------------	----

### CONSTRUCTION

26	Enclosure .....	55
26.1	General .....	55
26.2	Mechanical protection .....	59
26.3	Electrical protection .....	60
26.4	Doors and covers .....	63
27	Mounting of Electrical Components .....	64
28	Field-Installed Blower Assemblies .....	64
29	Field Supply Connections .....	65
29.1	Permanently-connected units .....	65
29.2	Cord-connected units .....	67
30	Grounding .....	68
30.1	General .....	68
30.2	Permanently-connected units .....	68
30.3	Cord-connected units .....	69
31	Internal Wiring .....	69
31.1	General .....	69
31.2	Methods .....	70
32	Separation of Circuits .....	72
33	Bonding for Grounding .....	73
34	Capacitors .....	74
35	Insulating Material .....	75
36	Motors and Motor Overcurrent (Overload) Protection .....	75
37	Switches and Controllers .....	79
38	Transformers .....	79
39	Spacings .....	80

### PERFORMANCE

40	Test Voltages .....	82
41	Temperature Measurements .....	82
41.1	Thermocouple method .....	82
41.2	Change-in-resistance method .....	82
42	Input Test .....	83
43	Temperature Test – Electrical Components .....	83
44	Dielectric Voltage-Withstand Test .....	83
45	Leakage Current Test .....	84
46	Stalled Motor Test .....	86
47	Strain Relief Test .....	87
47.1	Power supply cord .....	87
47.2	Field wiring leads .....	87

48	Push-Back Relief Test .....	87
49	Short-Circuit Test .....	87
50	Knockout Test .....	88

#### MANUFACTURING AND PRODUCTION TESTS

51	Production Line Dielectric Voltage-Withstand Test .....	88
52	Production Line Grounding Continuity Test.....	88

#### MARKING

53	General .....	89
54	Marking Permanence Tests.....	91
54.1	General .....	91
54.2	Air oven-aging test .....	91
54.3	Humidity test.....	91
54.4	Unusual-condition exposure test .....	92

#### INSTALLATION INSTRUCTIONS

55	Installation and Operating Instructions .....	92
55.1	General .....	92
55.2	Installation instructions .....	92
55.3	Operating instructions .....	94

ULNORM.COM : Click to view the full PDF of UL 737 2020

No Text on This Page

[ULNORM.COM](http://ULNORM.COM) : Click to view the full PDF of UL 737 2020

## INTRODUCTION

### 1 Scope

1.1 These requirements cover fireplace stoves that are freestanding assemblies having fire chambers intended to be operated open to the room or, when equipped with doors, to be operated with the doors either open or closed.

1.2 Fireplace stoves covered by these requirements are intended for attachment to a residential chimney capable of being used for use with low heat appliances and intended for use with solid wood or coal fuels.

1.3 Fireplace stoves are intended for installation in accordance with the Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances, NFPA 211, and in accordance with codes such as the International Mechanical Code, International Residential Code, and the Uniform Mechanical Code.

1.4 Fireplace stoves intended for use in mobile homes are to be installed in accordance with the Mobile Home Construction and Safety Standards published by the Department of Housing and Urban Development (HUD).

1.5 The product shall include:

- a) A field-installed cord-connected or permanently-connected blower assembly; and
- b) Other field-installed electrical accessories, rated at 250 volts or less, and intended to be employed in locations in accordance with the National Electrical Code, NFPA 70.

### 2 Glossary

2.1 For the purpose of this standard, the following definitions apply.

2.2 ALUMINUM-COATED STEEL – An aluminum-coated steel in which the bond between the steel and the aluminum is an iron-aluminum alloy.

2.3 CHIMNEY CONNECTOR – The flue pipe that connects a fuel-burning appliance to a chimney.

2.4 COMBUSTIBLE MATERIAL AND NONCOMBUSTIBLE MATERIAL – As used in this standard, these terms are defined in the Standard Glossary of Terms Relating to Chimneys, Vents, and Heat-Producing Appliances, NFPA 97.

2.5 DAMPER – A valve or plate that regulates draft or flow of flue gases or inlet combustion air. Shall be either manually or automatically operated.

2.6 GRATE – A frame for supporting the fuel within a fireplace stove.

2.7 HEARTH – The floor area within the fire chamber of a fireplace stove.

2.8 FLOOR PROTECTOR (HEARTH EXTENSION) – The noncombustible material applied to the combustible floor area located beneath the product and extending beyond the front and sides and to the rear of the product. The area is to be of the dimensions specified in the installation instructions.

### 3 Components

#### 3.1 General

3.1.1 A component of a product covered by this standard shall:

- a) Comply with the requirements for that component as indicated in [3.2](#) – [3.12](#);
- b) Be used in accordance with its rating(s) established for the intended conditions of use;
- c) Be used within its established use limitations or conditions of acceptability;
- d) Additionally comply with the applicable requirements of this end product standard; and
- e) Not contain mercury.

Note - Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

*Exception No. 1: A component of a product covered by this standard is not required to comply with a specific component requirement that:*

- a) *Involves a feature or characteristic not required in the application of the component in the product,*
- b) *Is superseded by a requirement in this standard, or*
- c) *Is separately investigated when forming part of another component, provided the component is used within its established ratings and limitations.*

*Exception No. 2: A component complying with a UL component standard other than those cited in [3.2](#) – [3.12](#) is acceptable if:*

- a) *The component also complies with the applicable component standard of [3.2](#) – [3.12](#); or*
- b) *The component standard:*
  - 1) *Is compatible with the ampacity and overcurrent protection requirements NFPA 70, where appropriate;*
  - 2) *Considers long-term thermal properties of polymeric insulating materials in accordance with the Standard for Polymeric Materials – Long Term Property Evaluations, UL 746B, and*
  - 3) *Any use limitations of the other component standard is identified and appropriately accommodated in the end use application. For example, a component used in a household application, but intended for industrial use and complying with the relevant component standard may assume user expertise not common in household applications.*

3.1.2 A component that is also intended to perform other functions, such as over current protection, ground-fault circuit-interruption, surge suppression, any other similar functions, or any combination thereof, shall comply additionally with the requirements of the applicable UL standard(s) that cover devices that provide those functions.

*Exception: Where these other functions are not required for the application and not identified as part of markings, instructions, or packaging for the appliance, the additional component standard(s) need not be applied.*

3.1.3 A component not anticipated by the requirements of this standard, not specifically covered by the component standards of [3.2](#) – [3.12](#), and that involves a potential risk of electric shock, fire, or personal injury, shall be additionally investigated in accordance with the applicable UL standard, and shall comply with [3.1.1](#) (b) – (d).

3.1.4 With regard to a component being additionally investigated, reference to construction and performance requirements in another UL end product standard is appropriate where that standard anticipates normal and abnormal use conditions consistent with the application of this Standard.

## 3.2 Attachment plugs, receptacles, connectors, and terminals

3.2.1 Attachment plugs, receptacles, appliance couplers, appliance inlets (motor attachment plugs) shall comply with the Standard for Attachment Plugs and Receptacles, UL 498.

*Exception No. 1: Attachment plugs and appliance couplers integral to cord sets or power supply cords are covered under the requirements of the Standard for Cord Sets and Power-Supply Cords, UL 817 and need not comply with UL 498.*

*Exception No. 2: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section [32](#), Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.2 Quick-connect terminals, both connectors and tabs, for use with one or two 22 – 10 AWG copper conductors, having nominal widths of 2.8, 3.2, 4.8, 5.2, and 6.3 mm (0.110, 0.125, 0.187, 0.205, and 0.250 in), intended for internal wiring connections in appliances shall comply with the Standard for Electrical Quick-Connect Terminals, UL 310.

*Exception No. 1: Other sizes of quick-connect terminals shall be investigated with respect to crimp pull out, insertion-withdrawal, temperature rise, and all tests shall be conducted in accordance with UL 310.*

*Exception No. 2: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section [32](#), Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.3 Wire connectors shall comply with the Standard for Wire Connectors, UL 486A-486B.

*Exception: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section [32](#), Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.4 Splicing wire connectors shall comply with the Standard for Splicing Wire Connectors, UL 486C.

*Exception: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section [32](#), Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.5 Equipment wiring terminals for use with all alloys of copper, aluminum, or copper-clad aluminum conductors, shall comply with the Standard for Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors, UL 486E.

*Exception: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section 32, Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.6 Terminal blocks shall comply with the Standard for Terminal Blocks, UL 1059, and, if applicable, be suitably rated for field wiring.

*Exception No. 1: A fabricated parts performing the function of a terminal block need not comply with UL 1059 if the part complies with the requirements of Section 29, Field Supply Connections; Section 31, Internal Wiring; and Section 35, Insulating Material.*

*Exception No. 2: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section 32, Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

3.2.7 Female devices (such as receptacles, appliance couplers, and connectors) that are intended, or that may be used, to interrupt current in the end product, shall be suitably rated for current interruption of the specific type of load, when evaluated with its mating plug or connector. For example, an appliance coupler that can be used to interrupt the current of a motor load shall have a suitable horsepower rating when tested with its mating plug.

*Exception: Plugs, receptacles, connectors, and terminals for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section 32, Separation of Circuits, and not involving the risk of fire or personal injury need not comply with the Standard for Appliance Wiring Material, UL 758.*

### 3.3 Boxes and raceways

3.3.1 Electrical boxes and the associated bushings and fittings, and raceways, of the types specified in Chapter 3 of NFPA 70 and that comply with the relevant UL standard (such as UL 514A, UL 514C, UL 514D) and 3.1 are considered to fulfill the requirements of this Standard.

*Exception: Enclosures complying with Section 26, Enclosure, of this end product standard is considered to meet the intent of this requirement.*

### 3.4 Capacitors and filters

3.4.1 The component requirements for a capacitor are not specified. A capacitor complying with the Standard for Capacitors, UL 810, is considered to fulfill the requirements of 17.1.

3.4.2 Electromagnetic interference filters with integral enclosures that comply with the Standard for Electromagnetic Interference Filters, UL 1283, are considered to fulfill the requirements of 17.1.

*Exception: A capacitor that complies with Section 34, Capacitors, of this end product standard is considered to meet the intent of this requirement.*

## 3.5 Controls

### 3.5.1 General

3.5.1.1 Auxiliary controls shall be evaluated using the applicable requirements of this end product standard.

3.5.1.2 Operating (regulating) controls shall be evaluated using the applicable component standard requirements specified in [3.5.2](#) – [3.5.5](#), and if applicable unless otherwise specified in this end product standard. Operating controls that rely upon software for the normal operation of the end product where deviation or drift of the control may result in a hazard, such as a speed control unexpectedly changing its output, shall comply with the:

a) Standard for Tests for Safety-Related Controls Employing Solid-State Devices, UL 991; and Standard for Software in Programmable Components, UL 1998; or

b) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1.

3.5.1.3 Protective (limiting) controls shall be evaluated using the applicable component standard requirements specified in [3.5.2.2](#).

### 3.5.2 Electromechanical and electronic controls

3.5.2.1 An operating (regulating) control, other than as specified in [3.5.3](#) – [3.5.5](#), shall comply with the:

a) Standard for Solid-State Controls for Appliances, UL 244A;

b) Standard for Temperature-Indicating and -Regulating Equipment, UL 873; or

c) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1.

3.5.2.2 Protective (limiting) controls shall comply with the Standard for Limit Controls, UL 353.

### 3.5.3 Motor and speed controls

3.5.3.1 A control used to start, stop, regulate or control the speed of a motor shall comply with the:

a) Standard for Solid-State Controls for Appliances, UL 244A;

b) Standard for Temperature-Indicating and -Regulating Equipment, UL 873;

c) Standard for Industrial Control Equipment, UL 508;

d) Standard for Adjustable Speed Electrical Power Drive Systems – Part 5-1: Safety Requirements – Electrical, Thermal and Energy, UL 61800-5-1; or

e) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1.

### 3.5.4 Temperature controls

3.5.4.1 A temperature control shall comply with the:

a) Standard for Solid-State Controls for Appliances, UL 244A;

- b) Standard for Temperature-Indicating and -Regulating Equipment, UL 873;
- c) Standard for Industrial Control Equipment, UL 508; or
- d) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1 and the Standard for Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Temperature Sensing Controls, UL 60730-2-9.

3.5.4.2 A temperature sensing positive temperature coefficient (PTC) or negative temperature coefficient (NTC) thermistor, that performs the same function as an operating or protective control shall comply with the Standard for Thermistor-Type Devices, UL 1434.

3.5.4.3 A thermal cutoff shall comply with the Standard for Thermal-Links (Thermal Cutoffs) for Use in Electrical Appliances and Components, UL 60691.

### 3.5.5 Timer controls

3.5.5.1 A timer control shall comply with the:

- a) Standard for Solid-State Controls for Appliances, UL 244A; or
- b) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1 and the Standard for Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Timers and Time Switches, UL 60730-2-7.

### 3.6 Cords, cables, and internal wiring

3.6.1 A cord set or power supply cord shall comply with the Standard for Cord Sets and Power Supply Cords, UL 817.

3.6.2 Flexible cords and cables shall comply with the Standard for Flexible Cords and Cables, UL 62. Flexible cord and cables are considered to fulfill this requirement when preassembled in a cord set or power supply cord complying with the Standard for Cord Sets and Power Supply Cords, UL 817.

3.6.3 Internal wiring composed of insulated conductors shall comply with the Standard for Appliance Wiring Material, UL 758.

*Exception No. 1: Insulated conductors need not comply with UL 758 if they comply with one of the following:*

- a) Standard for Thermoset-Insulated Wires and Cables, UL 44;*
- b) Standard for Thermoplastic-Insulated Wires and Cables, UL 83;*
- c) Standard for Fixture Wire, UL 66; or*
- d) the appropriate UL standard(s) for other insulated conductor types specified in Chapter 3, Wiring Methods and Materials, of NFPA 70.*

*Exception No. 2: Insulated conductors for specialty applications (e.g. data processing or communications) and located in a low-voltage circuit, complying with Section 32, Separation of Circuits, and not involving the risk of fire or personal injury need not comply with UL 758.*

### 3.7 Overcurrent protection

3.7.1 Fuses shall comply with the Standard for Low-Voltage Fuses – Part 1: General Requirements, UL 248-1; and the applicable UL 248 Part 2 (e.g. UL 248-5). Defined use fuses that comply with UL 248-1 and another appropriate UL standard for the fuse are considered to fulfill this requirement.

3.7.2 Fuseholders shall comply with the Standard for Fuseholders – Part 1: General Requirements, UL 4248-1, and the applicable Part 2 (e.g. UL 4248-9).

3.7.3 Circuit breakers shall comply with the Standard for Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures, UL 489.

*Exception: Circuit breakers used in telecommunications circuitry that comply with the Standard for Circuit Breakers For Use in Communications Equipment, UL 489A, need not comply with UL 489.*

3.7.4 Circuit breakers having integral ground fault circuit interrupter capability for protection against electrical shock shall additionally comply with the Standard for Ground-Fault Circuit-Interrupters, UL 943.

3.7.5 Supplementary protectors shall comply with the Standard for Supplementary Protectors for Use in Electrical Equipment, UL 1077.

3.7.6 Fusing resistors shall comply with the Standard for Fusing Resistors and Temperature-Limited Resistors for Radio- and Television-Type Appliances, UL 1412.

### 3.8 Polymeric materials and enclosures

3.8.1 Unless otherwise specified in this end product standard, polymeric electrical insulating materials and enclosures shall comply with the applicable requirements of the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C.

3.8.2 Metallized or painted polymeric parts or enclosures shall comply with the applicable requirements of the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C. This requirement is not applicable to exterior surfaces of polymeric enclosure materials or parts provided that the metallized coating or paint does not offer a continuous path for an internal flame to propagate externally.

### 3.9 Power supplies

3.9.1 A Class 2 power supply shall comply with one of the following:

a) Standard for Class 2 Power Units, UL 1310; or

b) Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1, with an output marked "Class 2", or that complies with the limited power source (LPS) requirements and is marked "LPS"; or

c) Standard for Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1, marked "Class 2" or the equivalent.

3.9.2 A non-Class 2 power supply shall comply with one of the following:

a) Standard for Power Units Other Than Class 2, UL 1012; or

b) Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1; or

c) Standard for Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1.

### 3.10 Printed wiring boards

3.10.1 Printed wiring boards, including the coatings, shall comply with the Standard for Printed Wiring Boards, UL 796.

*Exception: A printed-wiring board in a Class 2 nonsafety circuit is not required to comply with the bonding requirements in UL 796 if the board is separated from parts of other circuits such that loosening of the bond between the foil conductor and the base material will not result in the foil conductors or components coming in contact with parts of other circuits of the control or of the end-use product.*

### 3.11 Switches

3.11.1 Switches shall comply with one of the following, as applicable:

- a) Standard for Special-Use Switches, UL 1054;
- b) Standard for Switches for Appliances – Part 1: General Requirements, UL 61058-1;
- c) Standard for General-Use Snap Switches, UL 20; or
- d) Standard for Nonindustrial Photoelectric Switches for Lighting Control, UL 773A.

*Exception: Switching devices that comply with the appropriate UL standard for specialty applications (e.g. transfer switch equipment), industrial use (e.g. contactors, relays, auxiliary devices), or are integral to another component (e.g. switched lampholder) need not comply.*

3.11.2 A clock-operated switch, in which the switching contacts are actuated by a clock-work, by a gear-train, by electrically-wound spring motors, by electric clock-type motors, or by equivalent arrangements shall comply with one of the following:

- a) Standard for Clock-Operated Switches, UL 917; or
- b) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1 and the Standard for Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Timers and Time Switches, UL 60730-2-7.

3.11.3 A timer or time switch, incorporating electronic timing circuits or switching circuits, with or without separable contacts, shall comply with the requirements for an operating control with Type 1 action for 6000 cycles of operation, or as a manual control for 5000 cycles of operation, in accordance with the following:

- a) Standard for Solid-State Controls for Appliances, UL 244A;
- b) Standard for Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements, UL 60730-1 and the Standard for Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Timers and Time Switches, UL 60730-2-7.

3.11.4 A timer or time switch, incorporating electronic timing circuits or switching circuits, with or without separable contacts, that functions as a protective control, shall comply with the requirements for a protective control; see [3.5.1.3](#).

### 3.12 Transformers

3.12.1 General-purpose transformers shall comply with the Standard for Low Voltage Transformers – Part 1: General Requirements, UL 5085-1; and the Standard for Low Voltage Transformers – Part 2: General Purpose Transformers, UL 5085-2.

*Exception: A transformer that is completely enclosed within the end product enclosure, and that meets the applicable construction and performance requirements of this end product standard when tested in conjunction with the end product, meets the intent of this requirement.*

3.12.2 Class 2 and Class 3 transformers shall comply with the Standard for Low Voltage Transformers – Part 1: General Requirements, UL 5085-1; and the Standard for Low Voltage Transformers – Part 3: Class 2 and Class 3 Transformers, UL 5085-3.

*Exception: Transformers located in a low voltage circuit, and that do not involve a risk of fire or personal injury, need not comply with this requirement.*

### 4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

### 5 General

5.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

5.2 The term "product" as used in these requirements refers to all fireplace stoves or any part thereof covered by these requirements unless specifically noted otherwise.

### 6 Materials

6.1 A fireplace stove and a chimney connector, when provided, shall be made of noncombustible corrosion-resistant materials. Metals shall not be used in combinations that cause galvanic action at any location within the assembly.

6.2 The minimum thickness of metal, including any coatings, shall comply with [Table 6.1](#).

*Exception: Decorative metal parts are not required to comply with [Table 6.1](#).*

**Table 6.1**  
**Minimum metal thickness**

	Inch	(mm)
Aluminum-coated steel Type T1-40 [regular 0.40 oz. per square foot (0.12 kg/m <sup>2</sup> )]	0.018	(0.46)
Aluminum alloys	0.016	(0.41)
Cast iron	0.125	(3.17)
Galvanized steel (G60 coating class)	0.018	(0.45)

**Table 6.1 Continued on Next Page**

Table 6.1 Continued

	Inch	(mm)
Porcelain-enameled steel	0.032	(0.81)
Stainless steel	0.012	(0.30)
Steel (uncoated or painted)	0.042	(0.41)

6.3 Aluminum alloys containing more than 1 percent magnesium shall not be used when the reflectivity of the material is employed to reduce the risk of fire.

6.4 The fire chamber of the fireplace stove, and other parts in contact with flue gases that are visible after installation, shall be of material having the durability and resistance to fire and heat equivalent to fireclay tile, Series 300 or 400 stainless steel, aluminum-coated steel, cast iron, or 0.042 inch (1.07 mm) thick unprotected or painted steel.

6.5 Cast iron and unprotected and painted sheet steel complying with the requirements of footnotes (k) and (l) of [Table 11.1](#) comply with the requirements of [6.4](#).

6.6 Parts that are in contact with flue gases and that are not visible after installation shall be of a material having the durability and resistance to corrosion, fire, and heat equivalent to fireclay tile or Series 300 or 400 stainless steel.

6.7 Thermal insulation material shall be of metal or of a mineral base.

6.8 Thermal insulation shall comply with the following conditions when the fireplace stove is tested in accordance with these requirements:

- a) The products resulting from the combustion or volatilization of any combustible binder shall be discharged to the chimney.
- b) Insulating material shall remain in the intended position.
- c) Thermal conductivity of the insulation shall not increase.
- d) The insulation shall not show evidence of softening, melting, or deterioration.

6.9 Thermal insulation shall be protected against contact with the products of combustion.

6.10 Thermal insulation that is not self-supporting shall be applied to solid surfaces so that the insulation does not sag. An adhesive or cement used to attach such material shall retain its adhesive qualities at any temperature the adhesive attains when tested in accordance with these requirements and at 0°F (minus 17.8°C).

6.11 A water-absorbing insulating material shall be protected against wetting by condensation or rain when installed as intended.

6.12 The combustion air duct system (when applicable) shall be made of sheet metal not less than 0.016 inch (0.41 mm) thick. See [7.10.1](#) and [7.10.2](#).

*Exception: Thinner materials classified as Class 0 or Class 1 air ducts, as defined in the Standard for the Installation of Warm Air Heating and Air Conditioning Systems, NFPA 90B, and in the Standard for Factory-Made Air Ducts and Air Connectors, UL 181, shall be used when:*

- a) They comply with the requirements of NFPA 90B and UL 181; and