



UL 555

STANDARD FOR SAFETY

Fire Dampers

UL Standard for Safety for Fire Dampers, UL 555

Seventh Edition, Dated July 12, 2006

Summary of Topics

This revision of ANSI/UL 555 dated October 9, 2020 includes an additional option for Protection Against Corrosion; [7.1](#)

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 August 14, 2020.

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UL 555

Standard for Fire Dampers

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Seventh Edition

July 12, 2006

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The most recent designation of ANSI/UL 555 as an American National Standard (ANSI) occurred on October 9, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

The Department of Defense (DoD) has adopted UL 555 on July 29, 1994. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

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>.

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INTRODUCTION

1 Scope

1.1 The fire dampers covered by these requirements are intended for installation in accordance with the National Fire Protection Association Standard for Installation of Air-Conditioning and Ventilating Systems, NFPA 90A, the International Mechanical Code and the Uniform Mechanical Code.

1.2 Fire dampers are evaluated for use as either:

- a) Fire Dampers for Static Systems – For HVAC systems that are automatically shut down in the event of a fire or for air transfer openings in walls or partitions,
- b) Fire Dampers for Dynamic Systems – For HVAC systems that are operational in the event of a fire,
- c) Combination Fire and Smoke Dampers – For locations in HVAC systems where a fire damper and a smoke damper are required at a single location, or
- d) Corridor Dampers – For locations in HVAC Systems where air ducts penetrate or terminate at openings in the ceilings of interior corridors when permitted by authority having jurisdiction.

1.3 Under these requirements a fire damper is subjected to a standard fire exposure, controlled to achieve specified temperatures throughout a specified time period, followed by the application of a specified standard hose stream. This exposure by itself is not representative of all fire conditions; conditions vary with changes in the amount, nature, and distribution of fire loading, ventilation, compartment size and configuration, and heat sink characteristics of the compartment. These requirements provide a relative measure of fire performance of fire damper assemblies under these specified fire exposure conditions. Any variation from the construction or conditions that are tested such as method of installation and materials has the potential to substantially change the performance characteristics of the fire damper assembly.

1.4 Fire dampers for static systems (no air flow through the damper) are intended to close automatically upon the detection of heat by a heat responsive device.

1.5 Under these requirements combination fire and smoke dampers, corridor dampers and fire dampers for dynamic systems are exposed to standardized heat and airflow conditions and are evaluated for dynamic closure under these conditions.

1.6 Combination fire and smoke dampers and corridor dampers shall also comply with the applicable requirements in the Standard for Smoke Dampers, UL 555S.

1.7 Fire dampers for dynamic systems are intended for use where the airflow is operational at the time of fire, such as in a smoke control system, or from other situations in which the fan system is operational at the time of a fire.

1.8 Where fire dampers are required in ducts that penetrate fire barriers and where the duct is also used as part of a smoke control system, the system designer shall ascertain which type of fire damper is appropriate for the application. Fire dampers for dynamic systems are evaluated only for dynamic closure under heated airflow conditions. Combination fire and smoke dampers and corridor dampers that have an elevated temperature rating are evaluated for dynamic closure under heated airflow conditions and they are also evaluated to operate under heated air conditions.

1.9 Tests conducted in accordance with these requirements are intended to demonstrate the performance of fire dampers during the period of fire test exposure and are not intended to determine acceptability of fire dampers for use after exposure to fire.

1.10 It is the intent that tests conducted in accordance with the test methods described herein develop data to enable regulatory authorities to determine the acceptability of fire damper assemblies for use in locations where fire resistance of a specified duration is required.

1.11 Fire dampers are intended to close automatically upon the detection of heat by the use of a fusible link or other heat responsive device.

1.12 These requirements do not cover:

- a) Performance of the fire damper assembly in walls, partitions, or floors constructed of materials other than those tested.
- b) The performance of the fire damper assembly when installed using methods other than those fire tested.
- c) Measurement of heat transmission through a fire damper assembly.
- d) Measurement of the degree of control or limitation of the passage of smoke or products of combustion through the fire damper assembly.

2 General

2.1 Components

2.1.1 Except as indicated in [2.1.2](#), a component of a product covered by this standard shall comply with the requirements for that component. See Appendix [A](#) for a list of standards covering components generally used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 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.

2.2 Units of measurement

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

2.3 Undated references

2.3.1 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.

3 Glossary

3.1 For the purpose of this standard the following definitions apply.

3.1.1 CONTROLLED CLOSURE – The closure of a damper by means of electric, pneumatic, hydraulic, or other similar device that inhibits the rate of closure.

3.2 DYNAMIC CLOSURE – The closure of a fire damper under conditions of airflow and heat upon activation of the heat responsive device.

3.3 HEAT RESPONSIVE DEVICE – A safety device responsive to changes in temperature in order to activate the closing mechanism of fire dampers.

3.4 HEATED AIR OPERATION – The operation of a smoke damper by means of the actuator when the damper is subjected to conditions of airflow and heat.

3.5 PRIMARY HEAT RESPONSIVE DEVICE – The heat responsive device with the lower temperature rating for fire dampers equipped with two heat responsive devices.

3.6 REOPENABLE FIRE DAMPER – A fire damper equipped with a primary and a secondary heat responsive device. The fire damper is operable after the primary heat responsive device activates, and not after the secondary device activates.

3.7 SECONDARY HEAT RESPONSIVE DEVICE – The heat responsive device with the higher temperature rating for reopenable fire dampers.

3.8 VOLUME CONTROL DAMPER – A fire damper employing position devices that enable the fire damper to remain in positions other than fully open or fully closed.

3.9 NON-CONTROLLED CLOSURE – The closure of a damper by means of spring operation, gravity or other similar device that does not inhibit the rate of closure. Non-controlled closure is also referred to as instantaneous closure, rapid closure or slam shut closure.

CONSTRUCTION

4 General

4.1 Fire dampers shall be constructed to restrict the passage of flame when in the closed position. Combination fire and smoke dampers, corridor dampers, and fire dampers for dynamic systems shall be constructed to close under the rated airflow and heat conditions. A heat responsive device provided with a combination fire and smoke damper shall have a temperature rating which is less than or equal to the temperature rating of the damper.

4.2 Through openings for operating clearances in fire dampers shall not exceed 3/8 in (9.5 mm) in the vertical plane (such as between blades and each side of the fire damper frame) at any location, and 1/32 in (0.8 mm) in the horizontal plane at any location (such as between blade-to-blade hinged joints in an interlocking curtain).

4.3 Any through opening between a fire damper and its sleeve shall be insufficient in size to enable the passage of a 1/8 in (3.5 mm) diameter rod through the entire depth of the opening. Any through opening in a multiple fire damper assembly where the corners of the two frames meet shall be insufficient in size to enable the passage of a 1/4 in (6.4 mm) diameter rod through the entire depth of the opening.

4.4 For the purpose of the requirements in [4.2](#) and [4.3](#), a through opening in a fire damper is a visible opening in the face of the fire damper when viewed on a plane perpendicular to the mounting plane.

4.5 Nonmetallic or organic components such as gaskets, sealants, limit switches, or blade position indicators used in the construction of a fire damper and exposed to the air stream shall comply with the requirements of the Fire Endurance and Hose Stream Test, Section [10](#).

4.6 A combination fire and smoke damper or corridor damper intended for reopening after the initial closing due to operation of the heat responsive device that incorporates a secondary heat responsive device is not prohibited by these requirements. The damper shall not be reopenable after the damper closes due to activation of the secondary heat responsive device.

5 Heat Responsive Devices

5.1 A fire damper for dynamic systems and a fire damper for static systems shall be equipped with one heat responsive device. A combination fire and smoke damper and corridor damper shall be equipped with either one heat responsive device or with a primary and secondary heat responsive device.

5.2 The temperature rating of the heat responsive device for fire dampers for static systems shall be a minimum of 160°F (71°C) and shall not exceed 212°F (100°C).

5.2.1 The temperature rating of the heat responsive device for the fire dampers for dynamic systems shall be a minimum of 160°F (71°C) and shall not exceed 350°F (177°C).

5.2.2 The temperature rating of the heat responsive device for nonreopenable combination fire and smoke dampers or corridor dampers shall be a minimum of 160°F (71°C), shall be less than or equal to the temperature rating of the damper as determined by the Standard for Smoke Dampers, UL 555S, and shall not exceed 350°F (177°C).

5.2.3 For reopenable combination fire and smoke dampers and corridor dampers, the temperature rating of the primary heat responsive device shall be a minimum of 160°F (71°C) and shall not exceed 212°F (100°C). The temperature rating of the secondary heat responsive device shall be greater than the primary heat responsive device, shall not be less than the temperature rating of the damper as determined by the Standard for Smoke Dampers, UL 555S, and shall not exceed 350°F (177°C).

5.3 The load on a heat responsive device in a fire damper shall be within the design load limits of the device.

6 Sleeves

6.1 For fire dampers utilizing perimeter mounting angles, a sleeve shall be provided unless the fire damper has a frame wide enough to provide for direct attachment of the perimeter mounting angles. The thickness of the fire damper frame, when the sleeve is not to be provided, shall comply with the requirements for sleeves. See [6.5](#).

6.2 The sleeve intended for use with a fire damper shall be specified in the installation and operating instructions when it is to be field supplied. See Section [18](#).

6.3 The sleeve or frame shall be intended for connection to the ducts in accordance with the Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) Duct Construction Standards; HVAC Duct Construction Standards; or Fibrous Glass Duct Construction Standards.