

FIRE AND MOTORIZED FIRE DAMPER O & M

APPLICATION

While required frequency of periodic operation and testing varies by local jurisdiction, most local municipalities' reference the "international Fire Code" (IFC) or "National Fire Protection Association" (NFPA). The 2018 IFC Chapter 7, Section 706 "Duct and Air Transfer Opening" refers directly to NFPA 80 "Standard for Fire Doors and Other Opening Protectives" and NFPA 105 "Standard for Smoke Door Assemblies and Other Opening Protective". NFPA 80 covers the requirements for fire dampers and NFPA 105 covers the requirements for smoke dampers. Both documents contain the frequency requirements for periodic operational testing.

OPERATIONAL TEST

Fire Dampers – Dampers that are held open with a fusible link.

After damper installation is completed, an operational test shall be conducted.

- ▶ Damper shall close from the fully open position
- ▶ All indicating devices shall be verified to work and report to the intended location.

Motorized Fire Dampers or Combination Fire Smoke Dampers

After the Installation of a dynamic combination fire smoke damper is completed, an operational test shall be conducted.

- ▶ The test shall determine that the system has been installed and functions as intended.
- ▶ The operational test shall be conducted under non-fire HVAC airflow conditions as well as static flow conditions.
- ▶ All indicating devices shall be verified to work and report to the intended location.
- ▶ The dynamic combination fire/smoke damper shall also meet the testing requirements contained in Chapter 6 of NFPA 105.

NOTE:

All inspections and testing shall be documented, indicating the location of the fire damper, date(s) of inspection, name of inspector, and any deficiencies discovered. The documentation shall have a space to indicate when and how the deficiencies were corrected.

ACCEPTANCE TESTING

Acceptance testing of fire dampers shall be performed by a qualified person with knowledge and understanding of the operating components of the type of assembly being subject to testing and the system in which it is installed.

(If the damper is equipped with a variable air volume system, acceptance testing shall be conducted after the building mechanical ventilation system has been balanced and in operation under maximum air flow)

Motorized Fire Dampers Or Combination Fire Smoke Dampers

- ▶ Acceptance testing of dampers designed to close via an electric or pneumatic actuator shall be conducted by removing electrical power or air pressure from the actuator and ensuring that the damper closes properly.
- ▶ Electrical power or air pressure shall then be reapplied to the damper to confirm that it returns to its full-open position.

Fire Dampers - Dampers that are held open with a fusible link.

- ▶ Acceptance testing of dampers designed to close via a spring(s) or by gravity shall be conducted by removing the fusible link and confirming that the damper closes properly.
- ▶ The damper shall then be manually reset to its full open position and the fusible link shall be reinstalled.

"A record of these inspections and testing shall be made"



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PERIODIC TESTING

Testing Frequency

- ▶ Each damper shall be tested and inspected 1 year after installation.
- ▶ The test and inspection frequency shall then be every 4 years, except in buildings containing a hospital, where the frequency shall be every 6 years.

TEST METHOD "FUSE LINK"

The fan shall be permitted to be shut off during testing.

- ▶ The fusible link shall be removed.
- ▶ With the fusible link removed, hold the damper in the fully-open position, release the damper, the damper shall close completely without assistance. If the link appears damaged, it shall be replaced with a functionally equivalently listed link.
- ▶ At the completion of the test, the damper shall be returned to the full-open position, and the fusible link shall be reinstalled or replaced.

TEST METHOD "MOTORIZED FIRE DAMPERS OR COMBINATION FIRE SMOKE DAMPERS"

Remote Inspection Method

- ▶ The initial remote inspection shall include a visual inspection of the damper
- ▶ The visual inspection shall confirm that the position indication method accurately reflects the full-open and full-closed position of the damper. At the completion of the test, the damper shall be returned to the full-open position, and the fusible link shall be reinstalled or replaced.

Test Procedure

- ▶ signal from the damper's position indication device shall confirm that the damper is in the full-open or full-closed position as required by the system design.
 - ▶ The damper shall be commanded and confirmed to the full-closed or full-open position.
 - ▶ The damper shall be confirmed to the original operating position as required by the system design.
- If the remote inspection fails, a visual inspection shall be performed.

VISUAL INSPECTION TEST METHOD

- ▶ Visually confirm that the damper is in the full-open or full-closed position as required by the system design.
- ▶ Command and visually confirm the damper to the full-closed or full-open position.
- ▶ Restore and visually confirm the damper to the original operating position as required by the system design.

DOCUMENTATION

All inspections and testing shall be documented, indicating the location of the damper, date of inspection, name of inspector, and deficiencies discovered. The documentation shall have a space to indicate when and how the deficiencies were corrected.

MAINTENANCE

- ▶ If required exposed moving parts of the damper linkage may be lubricated with a dry lubricate.
 - ▶ If the damper is not operable, repairs shall begin without delay.
 - ▶ Following any repairs, the damper shall be tested for operation.
- All maintenance shall be documented

FIELD MODIFICATIONS

- ▶ For field modification or repairs contact Ruskin.com
- ▶ Where the field modification includes adding the capability for remote inspection, the position indicator devices and monitoring equipment shall be tested for functionality.

CODES AND STANDARDS

IFC "International Fire Code" Chapter 7, Section 706 "Duct and Air Transfer Opening" 2018
IBC "International Building Code" Chapter 9, Section 909 "Fire Protection and life safety System" 2018
NFPA 4 "Standard for Integrated Fire Protection and Life Safety System Testing" 2018
NFPA 72 "National Fire Alarm and Signaling Code" 2019
NFPA 80 "Standard for Fire Doors and Other Opening Protectives" 2019
NFPA 92 "Standard for Smoke Control Systems" 2018
NFPA 105 "Standard for Smoke Door Assemblies and Other Opening Protective" 2019



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