

# SMOKE AND COMBINATION FIRE SMOKE 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

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)

- ▶ 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.
- ▶ A record of these inspections and testing shall be made.



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## PERIODIC TESTING

- ▶ 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.

## REMOTE TEST METHOD

A damper with remote inspection capability shall positively indicate when the damper is fully open and fully closed.

- ▶ 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.
- ▶ A 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 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](http://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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