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To: Jim Shields, SMCA Local 19  
Sheet Metal Contractors Association of Philadelphia and Vicinity

From: Vickie Lovell, President, InterCode Incorporated

MEMO: Revisions in damper inspection and maintenance requirements

Dampers that serve a life-safety function located in the HVAC system, such as fire dampers, smoke dampers, combination fire/smoke dampers, and ceiling radiation dampers, are important components of the fire protection design in modern buildings. Their proper operation during a fire or life safety emergency is not only important for the occupants of the building, and the continuity of business operations, but also for the fire-safety personnel entering and exiting the building. The periodic inspection, performance testing, and maintenance are required by code to ensure that the life safety dampers are going to function as intended in an emergency.

The requirements for damper inspection and maintenance have been updated to reflect new requirements. The new requirements originate in the National Fire Protection Association (NFPA) standards for HVAC systems and components, namely NFPA 90A, 90B, 92A, 92B, 80, and 105. These standards are typically referenced by mechanical engineers and fire protection engineers involved with HVAC designs.

NFPA 90A “Standard for the Installation of Air-Conditioning and Ventilating Systems” requires that a damper should be examined every 2 years to ensure that it is not rusted or blocked, giving attention to hinges and other moving parts. Maintenance should be performed on fusible link dampers at least every 4 years, which includes removing the fusible link (where applicable), operating the damper to verify that they fully close, and lubricating all moving parts when necessary.

NFPA 92A “Standard for Smoke-Control Systems Utilizing Barriers and Pressure Differences” requires the inspection of all fusible link operated dampers used in smoke control systems every 2 years and the operation of all fusible link operated dampers every 4 years to ensure they are functioning properly. Dedicated systems shall be tested at least semi annually and non-dedicated systems shall be tested at least annually. (A dedicated system is a duct system that is used only during the life safety operations to manage fire and smoke migration. A non-dedicated duct system is used for both normal building operations, and during life-safety operations to manage fire and smoke migration.)

*Building Code Consulting · Strategic Planning · Technical Writing*

777 E. Atlantic Ave, Suite 301 · Delray Beach, Florida 33483  
Tel: (561) 278-0922 · Fax: (561) 771-1701 · [www.InterCodeInc.com](http://www.InterCodeInc.com)

NFPA 80 “Standard for Fire Doors and Other Opening Protectives” requires that a fire damper be tested and inspected 1 year after it is installed. The normal testing and inspection frequency is every 4 years, except in hospitals, where the frequency is every 6 years. The standard also requires an operational test after installation for dynamic fire dampers and combination fire smoked dampers. All inspections shall be fully documented.

NFPA 105 “Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives” requires that an operational test be conducted for all smoke and combination fire smoke dampers after installation and balancing of the HVAC equipment is completed. Testing and inspection frequency is the same as NFPA 80.

The International Fire Code (IFC) is a model code published by the International Code Council (ICC). Pennsylvania has adopted, state wide, the 2009 IFC as the state fire code. Local counties that have also adopted the 2009 IFC include Montgomery, Delaware, Bucks, Chester, and Philadelphia. The IFC has requirements for the inspection and maintenance of life-safety dampers. The 2009 IFC, Section 703.1.2 states that smoke dampers shall be inspected and maintained in accordance with NFPA 105. Section 703.1.3 states that fire dampers shall be inspected and maintained in accordance with NFPA 80.

It is essential that building owners keep records of the maintenance and the results of regular periodic inspections. Many jurisdictions have standardized forms that building owners are required to submit to the authority having jurisdiction for building inspection or fire prevention. Due to the essential function of life-safety dampers, it is strongly recommended that such inspections and maintenance be performed by a trained, professional technician who has been certified by a recognized agency or organization to do such work.