

TB/001 FIRE AND SMOKE DAMPER MAINTENANCE

1 OBJECTIVE

The objective of this technical bulletin is to inform members of additional considerations when testing and maintaining fire and smoke dampers. It should be used alongside BESA publications: DW/145: Guide to Good Practice for the Installation of Fire and Smoke Dampers; DW/144: Sheet Metal Ductwork; TR/19: Internal Cleanliness of Ventilation systems and SFG 20: The definitive standard for planned maintenance.

2 TECHNICAL INFORMATION

2.1 STANDARDS

British Standard 9999:2008 - Code of Practice for Fire Safety in the Design, Management & Use of Buildings, publishes industry standards for the definition, maintenance and testing of Fire dampers. It states that all Fire dampers should meet the criteria of fire resistance for a stated period of time and that:

"Any grille or opening through the enclosure for ventilation purposes should be protected by a fire damper"

"All fire dampers should be tested by a competent person at regular intervals not exceeding two years, and to be repaired or replaced immediately if found to be faulty. Spring-operated fire dampers should be tested annually and fire dampers situated in dust-laden and similar atmospheres should be tested much more frequently, at periods suited to the degree of pollution."



Figure 1: Example of fusible link operated fire damper

In addition; guidelines have been introduced by the department of health that encourage regular testing of fire dampers. In Part B of Health Technical Memorandum 03-01, fire dampers are required to be tested and maintained annually. Inspection and functional testing of smoke and fire dampers should be specified by the manufacturer.

2.2 SPRING OPERATED FUSIBLE LINK FIRE AND SMOKE DAMPERS

Spring Operated Fusible Link Fire Dampers are designed to "Fail" at 72° C. The fusible link releases the spring loaded fire damper to contain the fire within the ductwork space. This ensures that the fire does not spread through the ductwork ventilation system. The different types of fusible link are:

- ✓ Cassette Unit
- ✓ Rigid Bar
- ✓ Chain Link

If a fusible link has failed it cannot be repaired and must be reported to client.

2.3 INSTALLATION, MAINTENANCE AND TESTING

All volume dampers are set up during commissioning and should not normally be subject to further adjustment unless modifications are made to the ductwork distribution system. If it is essential to move the damper for maintenance purposes extreme care should be taken to ensure that the damper is returned to the position as set when commissioned. In the event of a ductwork modification, the system should then be re-commissioned.

Installation: To enable the Fire Dampers to be tested and reset access panels need to be installed. Access panels shall be quick release insulated neoprene sealed panels, all manufactured and installed to BESA specification DW/144. Required location of access panel, along with party responsible for provision of the panel is prescribed in Table 3 of BESA publication TR/19.

3 IMPLEMENTATION

3.1 TESTING AND REPORTING PROCEDURE

Basic testing and reporting procedure is set out in BESA publication SFG 20. This section is to inform members of minimum requirements for testing and reporting. Additional procedures may be required by the client. All contractors need to have sufficient training to carry out mechanical work. Please contact the BESA training department on technical@theBESA.com for support in the form of a seminar, presentation or training course. Testing should include but is not limited to the following steps.

- ✓ An inventory of all dampers to be tested.
- ✓ All Fire/Smoke dampers will be manually released to ensure the integrity of the spring loaded shutter.
- ✓ The Fusible link should be inspected for any deformity or damage.
- ✓ The Fire/Smoke Damper will be cleaned and lubricated within the closed position.
- ✓ The Fire/Smoke Damper shall then be opened and re-set.
- ✓ Any severe corrosion found shall be reported to the client.

Reports should include but are not limited to the following items:

- ✓ Test results with client information including position within the building/system, date, and name of operative shall be recorded and any comments noted if further action is required.
- ✓ Asset register to include damper location and ID number.
- ✓ Inspection results including details of failed damper operation.
- ✓ If drawings are provided, update and annotate details.
- ✓ Digital photographic evidence of damper condition prior to and after testing procedures unless otherwise specified by client.
- ✓ Explanation of failed operation and recommended corrective or remedial action.

4 SCOPE AND ACKNOWLEDGEMENTS

TB/001 Fire and Smoke Damper Maintenance is designed to be used in conjunction with BESA publications which are regularly reviewed by the BESA Technical Department to ensure they reflect current British, European and industry standards. Please refer to BS9999 and HTM 03-01 for additional information. The BESA would like to thank members of the Vent Hygiene Group for supplying content. All content correct at time of publishing.

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