BESA: DW145 - Fire Dampers

What You Need to Know

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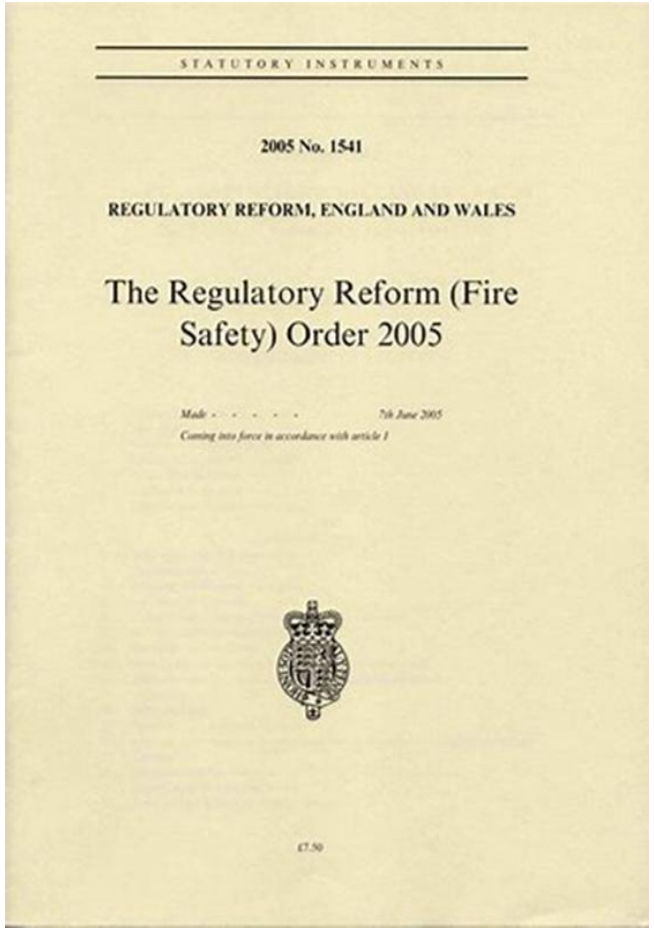
DW 145 - Fire Dampers

LEGISLATION



STATUTORY INSTRUMENTS

2005 No. 1541

REGULATORY REFORM, ENGLAND AND WALES

The Regulatory Reform (Fire Safety) Order 2005

Made - - - - - 7th June 2005

Coming into force in accordance with article 1

£7.50

The Responsible Person is the employer, or the owner of the facility. Fire safety systems must be kept in order and include all active and passive fire protection systems.

Included in the list of items in the passive fire protection systems are the maintenance of Fire Dampers.

HM Government

The Building Regulations 2010

Fire safety

B

APPROVED DOCUMENT

Volume 2: Buildings other than dwellings

Requirement B1: Means of warning and escape
Requirement B2: Internal fire spread (linings)
Requirement B3: Internal fire spread (structure)
Requirement B4: External fire spread
Requirement B5: Access and facilities for the fire service
Regulations: 6(3), 7(2) and 38

2019 edition incorporating 2020 and 2022 amendments – for use in England

Building Regulations – Approved Document B, Fire Safety

Address the internal spread of a fire due to the structure or lining used within a building and safety measures related to this.

" The damper assembly shall have a fire integrity classification equal to the fire barrier it penetrates"

DW 145 Fire Dampers – British Standards BS: 9999 2017

Code of Practice for Fire Safety in the Design, Management and use of Buildings

BS 9999 States:

Any grille or opening through the enclosure for ventilation purposes should be protected by a Fire Damper.

BS 9999 defines a Fire Damper as a:

Mechanical device that is operated automatically or manually and is designed to prevent the passage of fire which, together with its frame, is capable of meeting for a stated period of time the fire resistance criterion for integrity.

DW 145 Fire Dampers – British Standards BS EN 15650 – BS EN 1366/3

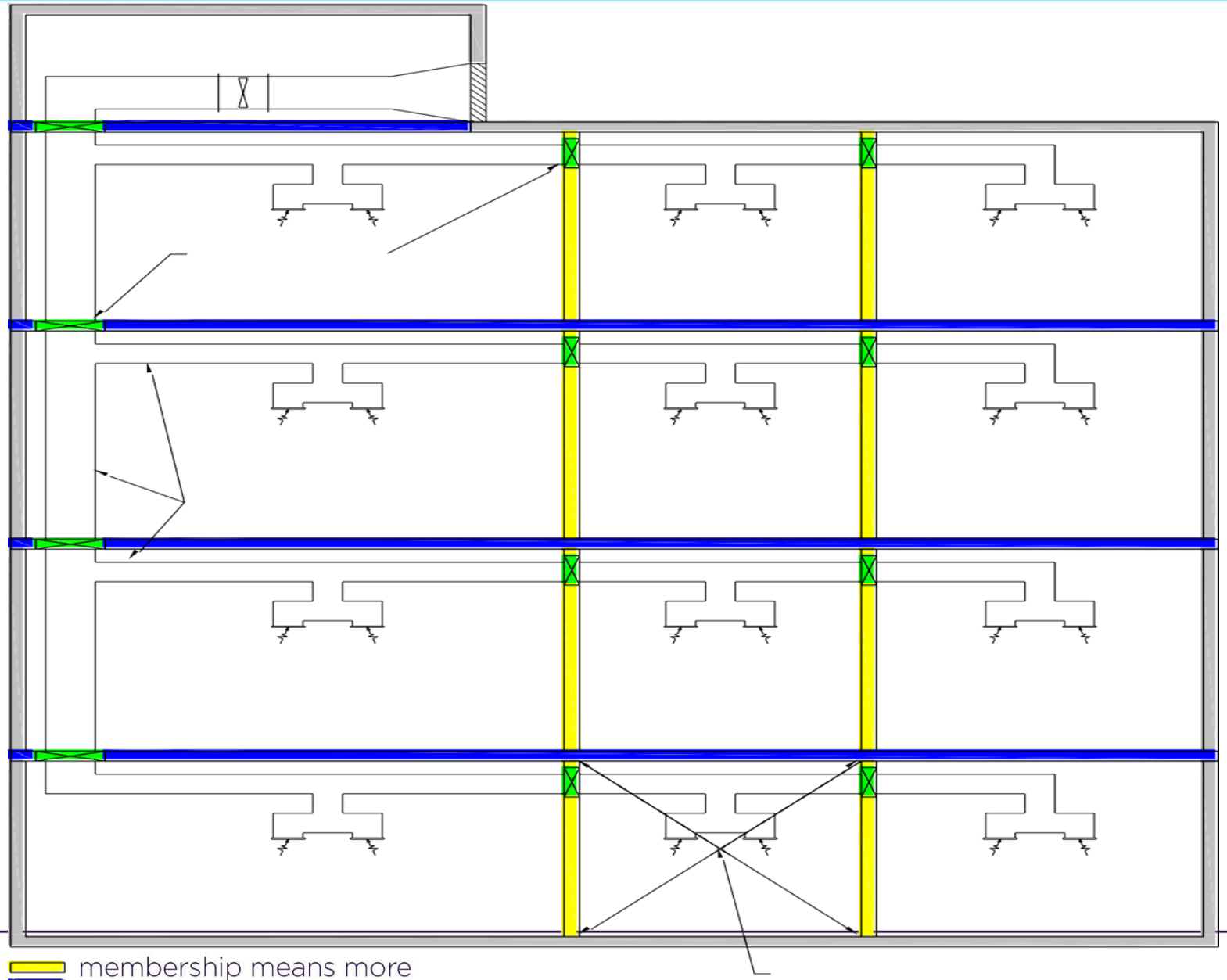
BS EN 15650 2010 Ventilation for Buildings - Fire Dampers

Manufacturing and installation requirements, test methods, evaluation, conformity and marking for fire dampers

BS EN 1366 – 3: 2021 Penetration Seals

Penetration seals are crucial for preventing the spread of fire and smoke through openings made for cables, pipes, and other services in walls, floors, and ceilings. By adhering to BS EN 1366-3:2021, manufacturers and builders can ensure that these seals maintain their integrity during a fire, thereby protecting the building's occupants and assets.

DW 145 Fire Dampers – Building Compartmentation / Penetration Seals



Building Regulations – Approved Document B, Fire Safety

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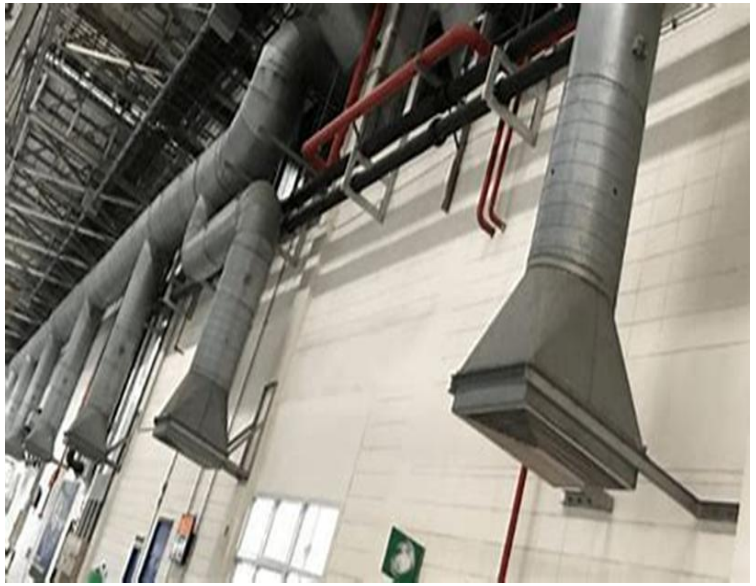
DW145 Fire Dampers – Importance of Dampers in LEV Systems

Fire dampers play a crucial role in maintaining fire safety within buildings by preventing the spread of flames and smoke through ductwork.

In LEV systems, which are used to extract hazardous fumes and contaminants, the installation of fire dampers is particularly important to protect both occupants and property.

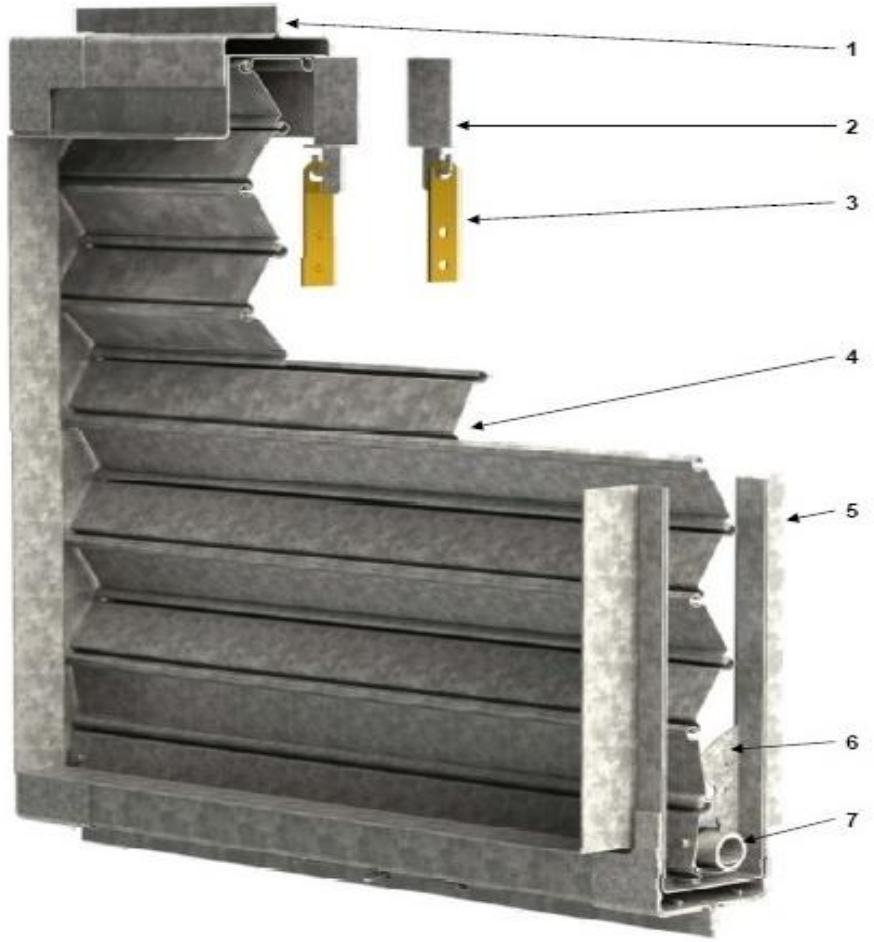
Where the extract ventilation system is a Local Extract Ventilation (LEV) including Fume Cupboard extract, Safety Cabinet extract, Chemical Store extract and other local safety extract systems including cutting, welding and soldering fume extract then Fire Dampers installed within LEV systems shall be of combination fire/smoke type only. (Automatic BMS)

Image courtesy of Vent-Tech ©



DW 145 Fire Dampers – Common Curtain Blade Components

1. **Installation Frame:** Designed to integrate the damper into the partition. Available as a HEVAC (Shown) or plate frame
2. **Link Bracket:** Retains the Fusible Link
3. **Fusible Link:** Retains the Blade pack in a recessed position under normal operating conditions. Splits into two parts to release blades upon reaching rated temperature (usually 72°C), this ensures the fire does not spread through the ductwork ventilation system
4. **Blade Pack**: Interlocking steel blades which concertina into the header during normal operating conditions. When the fusible link splits the blade pack is pulled closed by the blade springs
5. **Case:** The main body of the damper, comprising elements including the header and spigots
6. **Lock Guide:** Two fitted to each damper, act to retain the blade springs and also lock the blade pack in position when closed
7. **Blade Spring:** Fully extended during normal operation. When the fusible link splits, the blade springs pull the blade pack down and into the lock guides



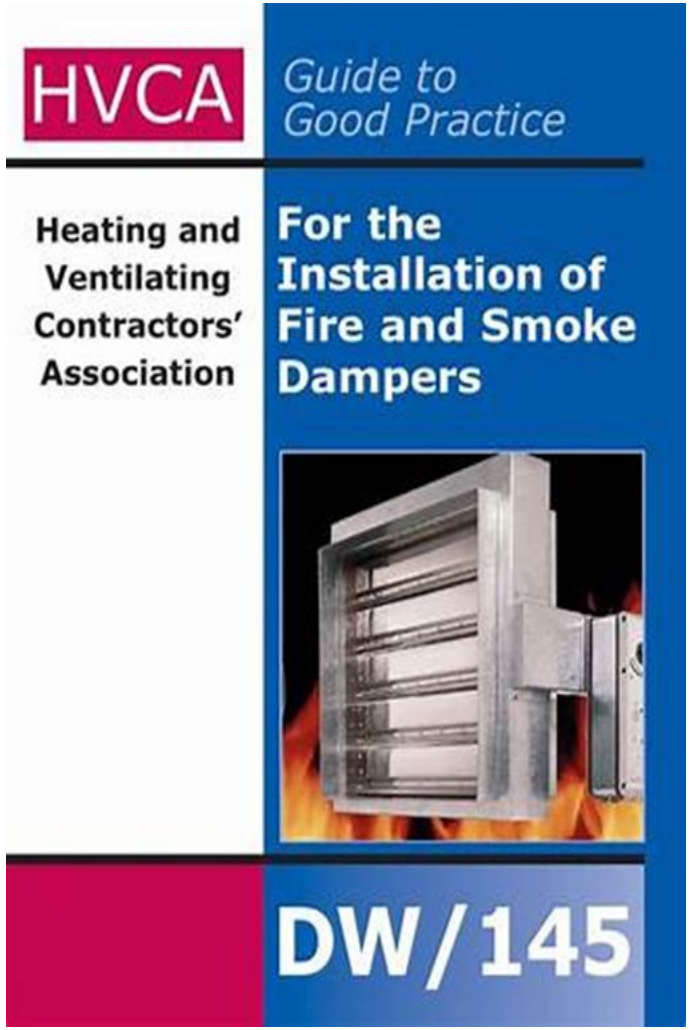
DW 145 Fire Dampers – Fusible Link Examples

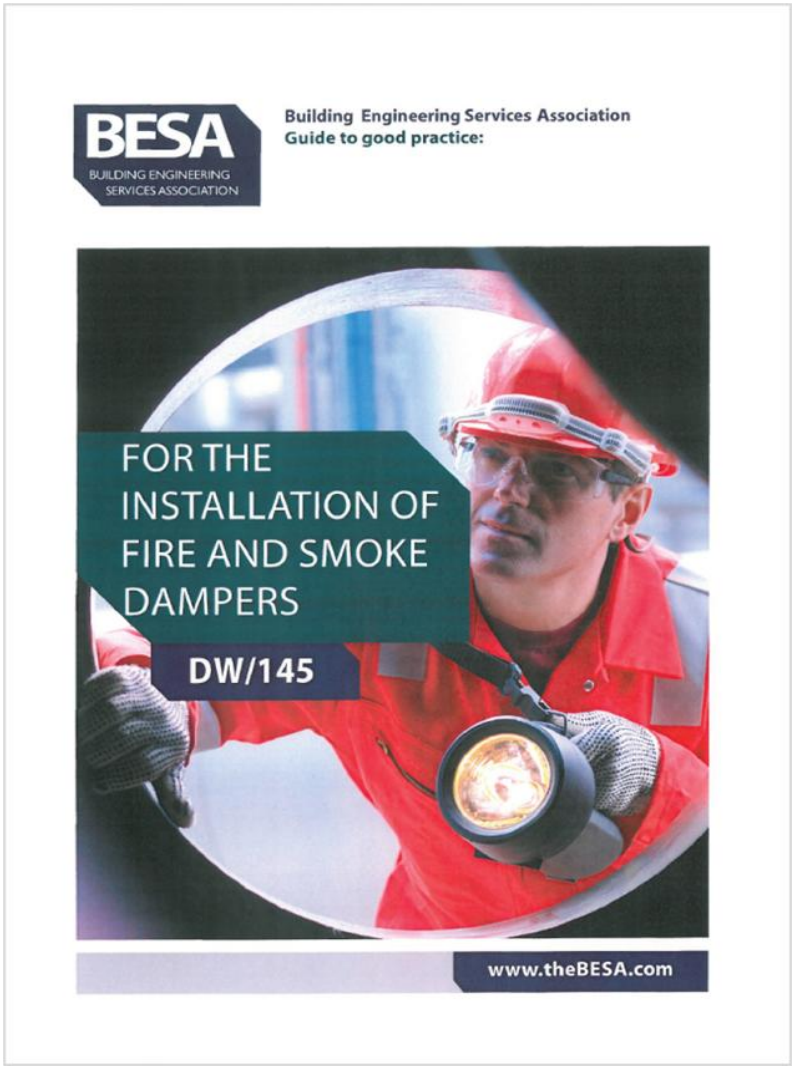
Spring operated dampers with rigid bar, chain and cassette unit type fusible links are designed to “Drop” at 72c.

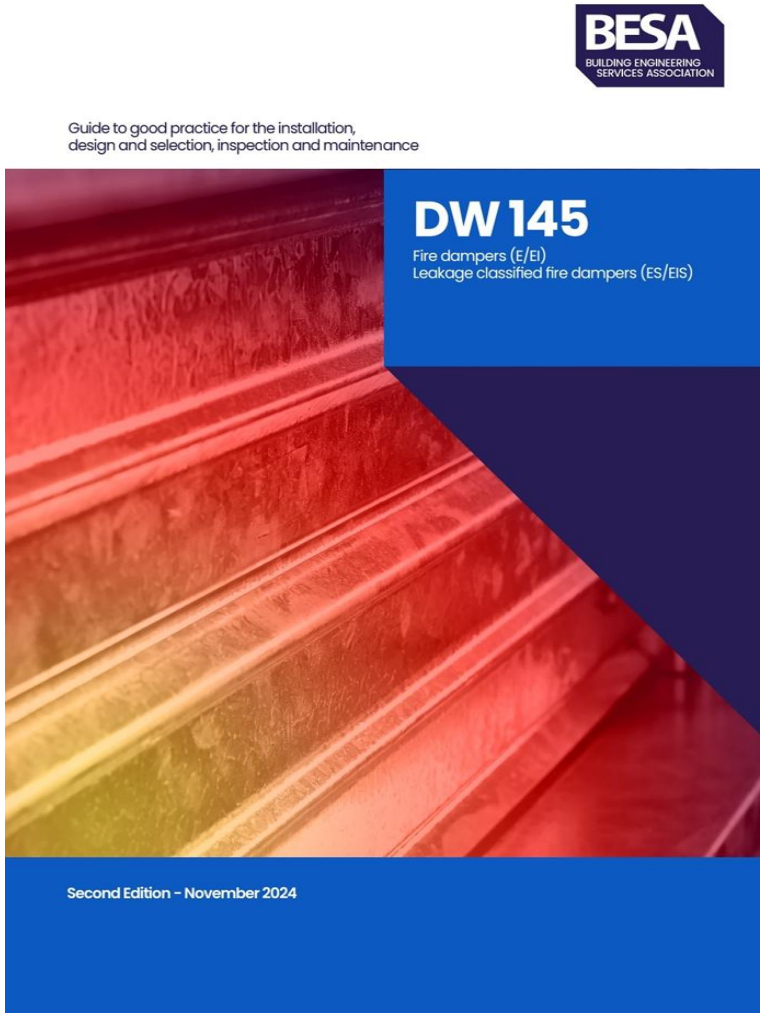
The fusible link releases the spring-loaded fire damper to contain the fire within the ductwork space.

This ensures that the fire does not spread through the ductwork ventilation system.

DW 145 Fire Dampers – November 2024, Amendments March 2025







DW 145 Fire Dampers – Nov 2024 Parts 4 and 5 Inspection, Testing and Maintenance

Guide to good practice for the installation, design and selection, inspection and maintenance of Fire Dampers.

Part 1 – Introduction

Part 2 – Installation

Part 3 – Design

Part 4 – Inspection

Part 5 – Maintenance and Faults

DW145 - 169 Pages

All fire dampers should be installed following the manufacturer's instructions.

Remember that the manufacturer may have different installation methods for each model of Damper.

If in doubt about the wall type, the installation method or access.
DO NOT PROCEED, seek help from your supervisor.

BY SIGNING OFF THE DAMPER A COMPLIANT, YOU ARE CONFIRMING THAT THE DAMPER IS INSTALLED CORRECTLY AND IS SAFE.

Golden Thread

- The Golden Thread provides information about a building that allows someone to understand a building and keep it safe; therefore, it will be the duty of the people responsible for a building to put in place and maintain a golden thread of information.

- There will need to be an individual record for each asset. This is likely to include the fire damper, probably the wall that the fire damper is associated with, plus any penetration seals around ducts, pipes and cables.

- This asset reference will be the key field that links any items in the schedules that will make up the Golden Thread from design checklist, installation checklist, to future inspection checklists, commissioning and maintenance records. From the design point of view, this will start with the record of the decisions made to select the fire damper in terms of the building use and the space risks. It will include for example, the classification, the installation details, relevant photographs and also test and maintenance results during the life of the building.

Damper Installation – Hand over and responsibility

Upon completion of the fire damper installation and commissioning, it is necessary to hand the documentation over to the responsible person(s) or fire management team of a project.

Regulation 38 (Building Regulations of England and Wales)

The person carrying out the work shall give fire safety information to the responsible person not later than the date of completion of the work, or the date of occupation of the building or extension, whichever is the earlier.

The transfer of responsibility with clear and concise information, the manufacturers recommended testing regime as well as the environmental considerations for the inspection and maintenance frequency.

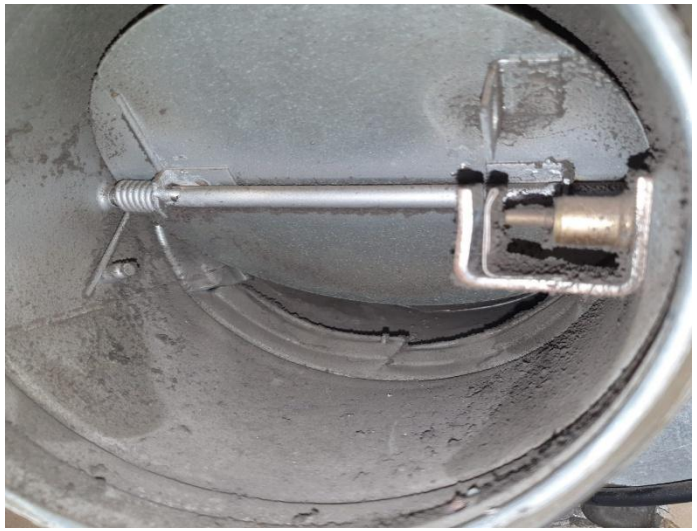
For Each Damper

- **Fire Damper Installation Validation Certificate—**This should be completed by the installer and validated by the commissioning technician
- **Fire Damper Installation Details—** This must be for the make and model of the fire damper and the specific installation method used
- **Additional Design Information—**Any additional design information and specific installation details

Issues but not limited to:-

- Penetration seals (fire stopping)
- Fire damper not located within the fire separating element barrier/wall/curtain
- Use of incorrect fittings or joints to ductwork/fire damper
- Inaccessibility
- Lack of access panels

DW 145 Fire Dampers – Non-Compliant



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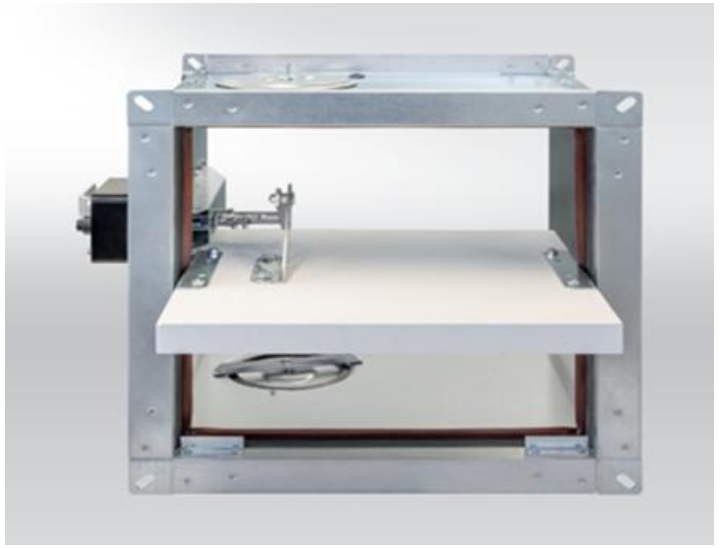

On behalf of the **B**uilding **E**ngineering **S**ervices **A**ssociation

Thank you for your time today