

The Importance of Fire and Smoke Dampers



Are you aware of your responsibilities as a building owner or building manager to protect your occupants and the property from damage in a fire emergency?



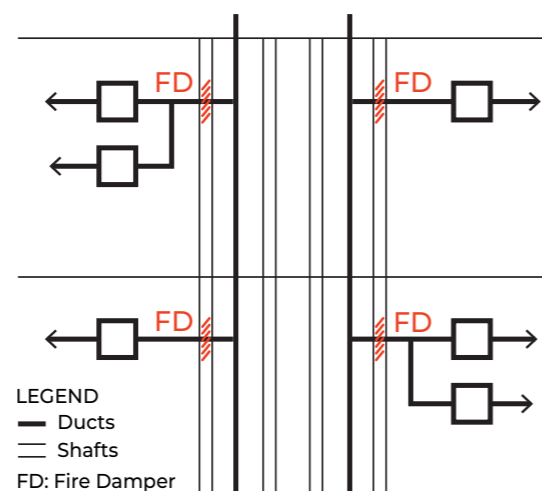
Increase the time **fire and rescue services** have to arrive and start tackling the fire

Fire Compartmentation in Buildings

Larger buildings such as Offices, Apartment complexes and the like, are constructed as multiple “compartments”. These compartments are designed to restrict the spread of fire and / or smoke throughout the entire building.

For example, in many apartment complexes, each Unit is a separate fire compartment with the walls, floors and ceilings being constructed from fire rated materials to form barriers to contain any fire (or smoke) that may occur. Wherever openings in these barriers are required, suitable fire rated treatments must be installed and maintained. In the case of Apartments, the Unit entry door may need to be a fire door that has smoke seals installed around it.

In addition, air conditioning, plumbing and electrical services need to enter and exit these fire compartments. Wherever these services penetrate, the fire rated barriers must be suitably treated with a passive fire protection system, so as not to compromise the fire rating of the barrier. This brochure discusses the importance of the passive fire rating of air conditioning ducts.



DAMPER PLACEMENT IN BUILDINGS

What are Fire and Smoke Dampers?

Whenever an air conditioning duct passes through a fire (or smoke) barrier, it must have a device installed at the point of penetration to prevent the passage of fire (or smoke) through the duct from one side to the other. These devices are called fire (or smoke) dampers. They are essentially “gates” within the ductwork that are left open during the normal operation of the air conditioning system. However, upon activation, in the event of a fire, the damper closes to prevent the passage of fire and smoke between compartments.

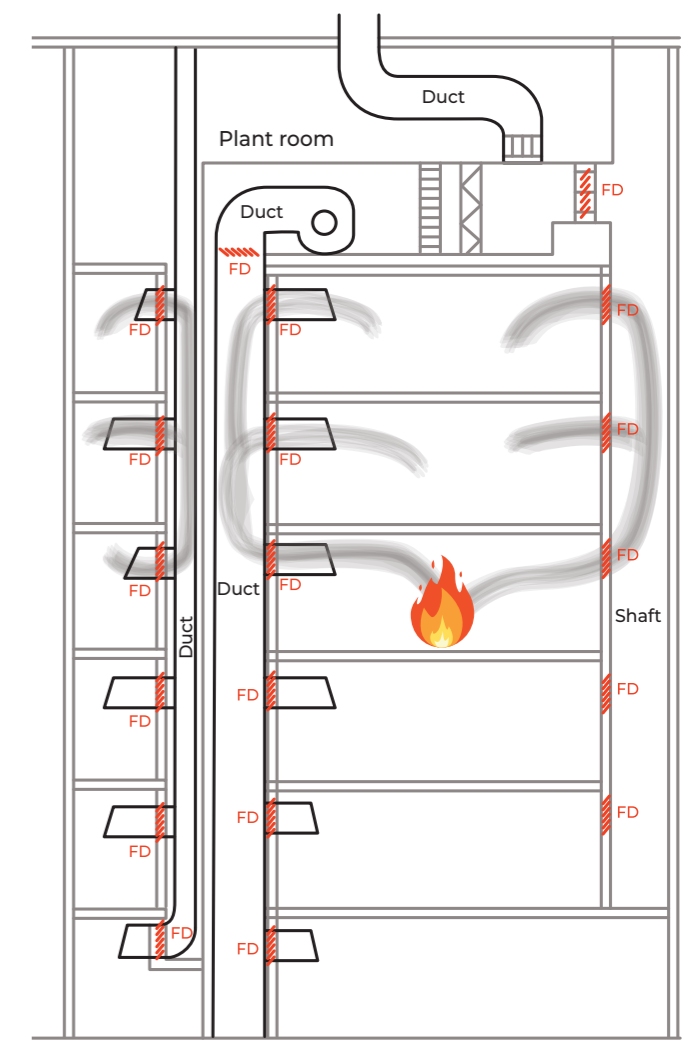
Like any fire protection measure, these devices should be installed and maintained by specialist passive fire protection contractors. Their initial installation must be certified to comply with the National Construction Code (formerly the Building Code of Australia) and various Australian Standards. This certification is vital as it forms part of the documentation required to enable the building to be occupied.

The installation of the fire / smoke dampers requires co-ordination between the contractors installing the ductwork and the ones building the barrier. The penetration through which the ductwork passes, must be constructed in a very specific manner. The damper must be correctly affixed within that penetration. Then the ductwork must be correctly connected to the damper using a special “breakaway joint”. This joint is a special connection that permits the ductwork to collapse in the event of a fire, without pulling the fire damper out of the penetration. If the damper is pulled out of the penetration, the barrier is compromised, causing the fire to spread.

Once the fire damper is correctly installed, access must be provided to enable it to be routinely inspected and serviced. Typically, an access panel is installed within the ductwork to enable this.

Fire and smoke dampers must be serviced to ensure their correct operation in the event of a fire. In Australia, the current standard prescribing the maintenance procedure is **AS 1851-2012 Routine service of fire protection systems and equipment**. The maintenance procedure assesses the installation of the fire damper, ensures there is suitable access to maintain it and confirms that it has not been damaged or deteriorated to a point where it cannot function.

As a minimum, 20% of a building's fire (and smoke) dampers must be inspected annually so that over the course of 5 years, they have all been assessed. It is vital this annual maintenance inspection be conducted by an experienced contractor able to interpret all the requirements of the National Construction Code, Australian Standards and product manufacturer's guidelines. There are many different types and configurations of fire (and smoke) dampers installed throughout buildings and experienced auditors have the knowledge to ensure a thorough and correct assessment of them is completed.



POTENTIAL SMOKE LEAKAGE THROUGH A BUILDING WITHOUT PROTECTION

When Fire Dampers are installed correctly and closed, the fire and smoke won't leak through.



INTUMESCENT FIRE DAMPER



MECHANICAL CURTAIN FIRE DAMPER

Why use Bowers?

- Bowers has been working as a passive fire rating contractor for over 50 years and specifically assessing fire dampers since the 1990s. Our experienced teams of auditors and technicians can complete all annual maintenance inspections and repairs to ensure your fire and smoke dampers are fully compliant.
- We can complete any repairs necessary, including repairs or replacement of dampers, rectification of penetrations in fire barriers, and installation of suitable maintenance access.
- Upon completion of our repairs we will provide certification of all works.
- Bowers is accredited with the Fire Protection Association Accreditation Scheme (FPAS) and the Queensland Building and Construction Commission (QBCC) and is an accredited applicator of a range of approved products to the relevant Australian Standards.
- Bowers is independently risk accredited by Greencap Cm3.
- Bowers is an accredited applicator for a range of fire rated products used in the industry.

Bowers' Service Offering

Bowers' service offering covers every phase of asset delivery and life cycle for various sectors.

Its offering includes:

- Audits
- Compliance Reports
- Rectification of existing passive fire protection systems
- Installation of new passive fire protection systems
- Certification of installed systems
- Technical advice

WE ARE ACCREDITED WITH THE FOLLOWING ORGANISATIONS





THE WESLEY HOSPITAL WESTERN ANNEXE



SHERATON GRAND MIRAGE RESORT, GOLD COAST

Case Study: The Wesley Hospital, Western Annexe. Passive Fire Upgrade

SECTOR:

Building (Health)

CLIENT:

The Wesley Hospital

PROJECT COMPLETION:

November 2019

VALUE:

\$220,000+

ADDRESS:

451 Coronation Drive
Auchenflower QLD

PROJECT OVERVIEW:

The Wesley Hospital is one of Australia's iconic and largest private not-for-profit hospitals. Following an onsite audit of fire dampers and fire seals, Bowers was engaged to carry out all rectification works within a live and fully operational hospital.

SERVICES OFFERED:

Bowers initially conducted a full audit of the fire walls, floors, and ceilings of the Western Annexe section of the hospital and were subsequently engaged to conduct all rectification works.

All works were completed within a live, sensitive hospital environment, covering multiple departments. Minimal disruption and 100% safety to staff and patients was critical, as was site cleanliness and hygiene. With an emphasis on planning and communication, Bowers worked co-operatively with the Hospital Maintenance Engineers and Fire Safety Manager ensuring a seamless project outcome. Bowers' highly experienced auditors completed a thorough audit of the Western Annexe and our experienced operational team, with their understanding of live hospital environments, were instrumental to the project running smoothly. Bowers' experience of working in a live hospital was invaluable. The Hospital Engineers and Fire Safety Manager were extremely impressed by Bowers' communication, attention to detail, professionalism and planning, ensuring overall project success.

Case Study: Sheraton Grand Mirage Resort, Gold Coast. Fire Damper Repairs

SECTOR:

Building / Hotels

CLIENT:

Airmaster Australia

PROJECT COMPLETION:

March 2018

VALUE:

\$250,000+

ADDRESS:

71 Sea World Drive, Main Beach
Gold Coast QLD

PROJECT OVERVIEW:

Sheraton Grand Mirage is an iconic Gold Coast 5-star, 3 level beachfront resort. In the lead-up to hosting the 2018 Commonwealth Games Federation members and officials, the resort tendered an upgrade of fire dampers in each of the 284 rooms and 11 suites, service rooms and resort corridors. Bowers was engaged by Airmaster Australia to carry out the works within a 26-week timeframe.

SERVICES OFFERED:

Bowers undertook the replacement of all fire dampers in the tender specifications to comply with the relevant Building Codes and Australian Standards.

In addition to completing the project within the timeframe, it was critical that works did not impede the resort's daily operations. The resort was fully operational with occupancy rates upwards of 80%. Carefully curated planning and communication with the hotel reservation and maintenance teams enabled Bowers to meet the requirements of the project while minimising disruption to the Resort's operations. Minimal work noise was only permitted during certain hours to ensure the comfort of guests. The client and resort management were extremely happy with the project that was completed on time and within budget. Bowers' communication, familiarity of working in fully functioning hotels, as well as their expertise, ensured a successful project outcome.



South-East Queensland
Unit 4, 18 Blanck Street
Ormeau Qld 4208

T 07 3266 2366

E scallinan@bowsers.com.au

W bowsers.com.au