

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?



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.



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.



Why use Bowsers?

- Bowsers 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.

- Bowsers 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.
- Bowsers is independently risk accredited by Greencap Cm3.
- Bowsers is an accredited applicator for a range of fire rated products used in the industry.

Bowsers' Service Offering

Bowsers' 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



QUEENSLAND BUILDING AND CONSTRUCTION COMMISSION











Case Study: The Oasis Shopping Centre, Fire Dampers

SECTOR:

Building (Shopping Centre)

CLIENT: Precise Air Group Pty Ltd

PROJECT COMPLETION: Late 2024

ADDRESS: 75 Surfers Parade Broadbeach QLD

PROJECT OVERVIEW:

Bowsers was commissioned to conduct a comprehensive fire damper audit to ensure the effective maintenance of its Passive Fire Protection Services. The inspection revealed minor corrosion in specific areas and identified instances where some fire dampers did not fully comply with regulatory standards.

SERVICES OFFERED:

This comprehensive task involved upgrading over 100 existing dampers with new mechanical and intumescent fire dampers, as well as addressing noncompliant penetrations, and decommissioning dampers connected to obsolete equipment.

Installation challenges arose from the difficult-to-reach fire dampers, requiring scaffolding and scissor lifts for access. The location and height of many dampers posed safety challenges, necessitated longer working hours, and increased both time and labour requirements. Moreover, some damper installations were in tenant-occupied spaces, demanding careful scheduling, regular communication and coordination to minimise disruptions.

To overcome these challenges, the Bowsers team carefully planned the sequencing of work, incorporated additional safety protocols and used more specialised equipment for easier access to these difficult-to-reach areas. Detailed pre-planning and continuous coordination was critical. Bowsers employed a strategic approach to scheduling, ensuring work in sensitive areas such as restaurants took place late in the evening (after hours), minimising disruption to daily operations.

The client, along with shopping centre management, expressed high satisfaction with Bowsers' expert guidance and tailored solutions. The project was completed on schedule and within budget, thanks to Bowsers' effective communication, meticulous attention to detail, and unwavering professionalism. Their extensive expertise in managing fire and smoke damper systems in complex, high-traffic environments was instrumental in ensuring the successful outcome of the project.



Case Study: Sheraton Grand Mirage, Gold Coast

SECTOR:

Building (hotels)

CLIENT: Airmaster Australia

PROJECT COMPLETION: Ongoing

VALUE: \$250,000+

ADDRESS: Main Beach, Gold Coast

PROJECT OVERVIEW:

Following the successful upgrade of fire dampers across 284 rooms. 11 suites. service areas, and resort corridors at the 5-star Sheraton Grand Mirage, Gold Coast, completed over a 26-week period, Bowers has been re-commissioned to provide ongoing inspections and maintenance services.

Given that the resort maintains occupancy rates exceeding 80%, meticulous planning is required to ensure that maintenance activities do not disrupt guests or staff.

Bowers implemented a comprehensive planning process and worked in close coordination with the resort's reservation teams to schedule maintenance tasks effectively. Construction activities were conducted during designated hours to minimise noise and disruption, ensuring an uninterrupted experience for quests.

Bowers' technical expertise, effective communication, and ability to operate within live hotel environments have earned the company continued trust for ongoing inspections and maintenance. As a result, the fire damper systems remain fully compliant and continue to perform at their best.

SERVICES OFFERED:

After completing the initial upgrade, Bowers has continued to deliver periodic inspections and essential maintenance. These services ensure the continued compliance and optimal functionality of the fire damper systems.





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