



Fire Rated & Smoke Extract Ductwork Systems

Certifire CF 5907

Although standards have been tightened greatly over the past 10 years, the importance of choosing the right fire rated and smoke extract ductwork has never been more critical. No one can afford to be indulgent when it comes to choosing the correct life safety system and where lives are potentially on the line. So speak to those who have been there right from the start, who started testing as far back as 2005 and saw it develop meticulously through each test and who have the expertise and knowledge to address all your queries. Then you will understand why it has to be a SUREFIRE thing, a ductwork solution to rely on for every project demand.

AMS
AIR MOVEMENT SUPPLIES

4 HOUR FIRE-RATED DUCTWORK

BS476 Part 24.

INTRODUCTION

Air Movement Supplies fire rated ductwork was the original Irish owned 1st to market when it began its first testing in 2005. It has been designed to cater for the various fire safety requirements required in the building industry today.

The system has been comprehensively tested by Warrington fire research department, achieving 245 minutes, the highest fire rating achieved by a ventilation duct in its time.

The strictest procedures in the fields of manufacturing, installation and inspection are adhered to. Certification on completion of works is provided by our trained installers through their 3rd party independent certification providers.

The prevention of fire spread through ducted systems

The prevention of fire spread through ducted systems is of critical importance. Non fire-resisting ductwork systems can be responsible for allowing the initial spread of fire and smoke between compartments. The correct use of fire-rated ductwork will maintain fire compartmentation and assist in the safe dispersal of hazardous smoke and fumes.





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PERFORMANCE CRITERIA:

BS476 part 24:1987 (ISO 6944)

The assessment of fire resistance enables the criteria to be assessed in the following areas:

Stability: Stability failure shall be deemed to have occurred in ducts 'A' and 'B' outside the furnace when the duct collapses in such a manner that the duct no longer fulfil its intended function.

Insulation: Insulation failure shall be deemed to have occurred when temperature rise above initial ambient temperature in the laboratory, on the unexposed surface of the test specimen outside the furnace, exceeds either:

- a) 140°C as an average value
- b) 180°C as a maximum value read by any surface thermocouple.

Note: See also the annex, BS476 Part 24:1987, clause A1 c) in respect of insulation failure of ducts 'A' within the furnace where such ducts contain combustible materials (i.e. Kitchen extracts).

Integrity: The presence and formation in the test specimen of cracks, holes or other openings, outside the furnace, through which the flames or hot gases can pass shall constitute integrity failure.



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BS9999 - 2017 BUILDING REGS.

Method 1: Protection using fire dampers

Fire is isolated in the compartment of origin by the automatic actuation of fire dampers. This method cuts off the passage of air and is not acceptable where ventilation requires to be maintained or where fire dampers are not permitted.

Method 2: Protection using fire-resisting enclosures

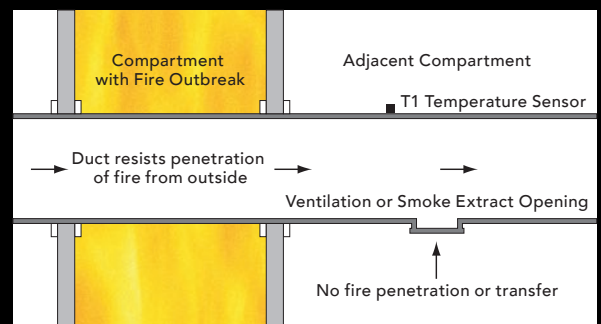
Service shafts through which the ventilation ductwork passes. Protective shafts form a compartment when constructed to the highest standard of fire resistance.

Method 3: Fire-resisting ductwork

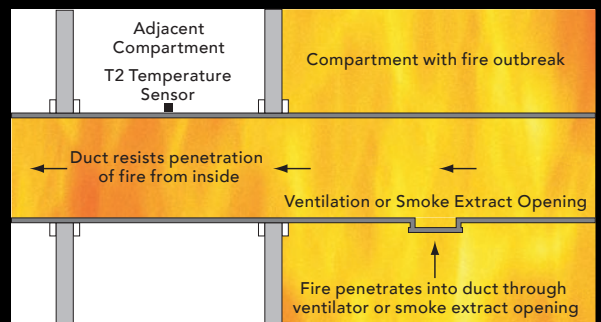
The ductwork itself forms a protective shaft. The fire resistance of the ductwork when tested should not be less than the fire resistance required for the elements of construction in the area through which it passes. The product has to be tested and certified to BS476 part 24:1987 (ISO 6944_1985).

Method 4: Automatically actuated fire and smoke dampers triggered by smoke detectors

Type A Duct (fire outside)



Type B Duct (fire inside)





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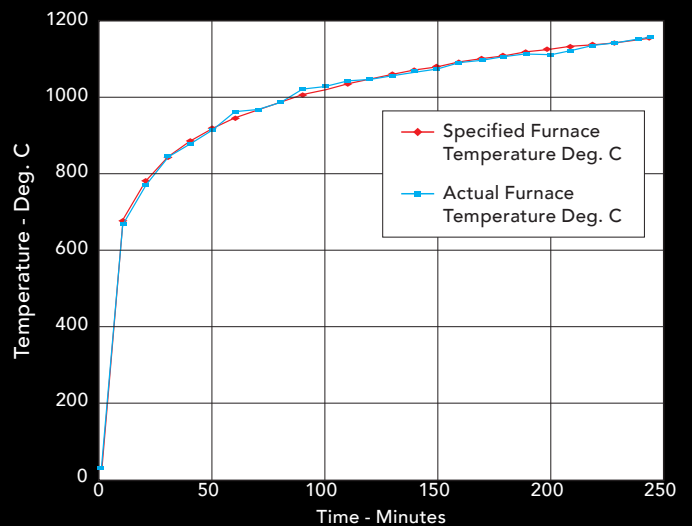
SUREFIRE

- All ductwork is manufactured in-house under ISO9001 quality assured systems and with a annually maintained FPC (factory production control) audit under Warrington Fire
- Single fix installation
- Robust Construction - does not chip, non coated ductwork system
- Heavy duty and versatile with options for inverted flanges fitted keeping openings to a minimum
- Available in square, round or flat oval duct
- Available in stainless steel and black mild steel
- Available in multi-panels and on-site assembly
- Sizes up to 3000x2000mm
- SUREFIRE systems includes tested access doors, silencers, dampers and insulation

SUREFIRE i (insulated)

SUREFIRE i ductwork offers insulation of up to three hours in applications where an insulation criteria is required. Thickness and density is calculated by the type of system and time period required.

Graph showing Mean Furnace Temperature, together with the Temperature/Time relationship specified in the standard



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SUREFIRE MEETS THE FOLLOWING BS 9999:2017 STANDARDS:

1) 32.5.2.1, General, p 173

Where air handling ducts pass through fire-spreading elements such as compartment walls or the enclosures to protected escape routes, then the integrity of those elements should be maintained, using one or a combination of the following four methods:

Method 3: protection using fire-resisting ductwork;

32.5.2.2, Protected escape routes, p 173

Methods 2 and 3 should be used where ductwork does not serve the escape route it passes through.

2) K5, Smoke Control, page 354

Examples of smoke control equipment, facilities and systems include:

- smoke and heat exhaust ventilation systems;
- pressure differential systems;
- make-up air systems.

3) 32.5.4, Segregation of ventilation ductwork serving areas of special risk or carrying polluted air, p 176

Certain appliances, such as deep fat fryers, should have their own extract ductwork, which should be provided with access for cleaning at intervals not exceeding 3m. As kitchen extract ductwork should not be provided with fire dampers, only fire-resisting ductwork should be used when immediate discharge to the outside of the building is not possible. Where fire-resisting ductwork is used, it should be a complete system from canopy to atmosphere.

4) 32.4, Access panels, p 172

Access panels should be of a construction that has at least the same fire resistance as the element they fit into.





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SUREFIRE MEETS THE FOLLOWING DW/172 STANDARDS:

1) **Section 18, D6, p 92**

Ductwork carrying polluted air must have separate and independent extraction with no recirculation. No fire dampers are to be installed in extract ductwork.

2) **Section 18, D9, p 93**

For both fire resistant and smoke control ductwork, the periods of integrity and insulation to which the ductwork is constructed, must be the same as the rating of the compartment that is being breached.

3) **Section 18, 18.14, p 64**

All interior surfaces of the ductwork shall be accessible for cleaning and inspection purposes. In the absence of a detailed cleaning specification/method, access doors shall be installed at 2m centres and thereby enabling full cleaning of the system without manned entry.

4) **Section 18, 18.11, p 63**

Extract ductwork. Internal thermal or acoustic should not be used, and turning canes should be avoided wherever possible.

5) **Section 18, D10, p 93**

The fire resistance of kitchen extract ductwork shall also include insulation, to ensure that a fire outside the duct does not cause any grease that has built up on the inside of the duct to ignite (duct A scenario). The insulation shall ensure that temperatures on the inside of the duct shall not exceed 140°C average above ambient and 180°C at any point.

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CERTIFICATION

Upon completion of installation Air Movement Supplies fully trained installers will issue an independent 3rd party certificate that guarantees all items manufactured and installed conforms to the requirements of B.S.476 part 24: 1987



FULL SPECIFICATION & TECHNICAL ASSISTANCE

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