

Fire-rated Ventilation

Understanding the fire safety requirements of components forming part of a building's external walls and surfaces

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Regulations Explained

Part 2: Rytons A1[®]
Fire-rated Range

Part 1: Regulations

Introduction

Following the tragic Grenfell Tower fire, regulations relating to the materials used within the external walls and external surfaces of buildings were made more robust by requiring Class A1 or A2-s1, d0 products, which in the event of a fire, will not contribute to the spread of fire.

In this presentation we will outline extracts from The Building Regulations, Approved Document B: Fire safety ([2019 edition incorporating 2020 and 2022 amendments](#)).

- In England where a building notice or an initial notice has been given to, or full plans deposited with, a local authority before 1 December 2022 refer to Approved Document B: Fire safety ([2019 edition incorporating 2020 amendments](#)).
- In Wales refer to Approved Document B: Fire safety ([2006 edition incorporating 2010, 2016 and 2020 amendments](#)).
- [The Building Safety Act 2022](#).

Unless otherwise expressly agreed in writing, nothing stated in this presentation shall be legally binding. All information given is in good faith and to the best of our knowledge is true and accurate, however no guarantee regarding its accuracy is given, nor should Rytons representatives or agents imply any such guarantee. Customers should satisfy themselves that the products are suitable for the intended purpose. Calls to and from Rytons are recorded to help us maintain and improve our service.

Fire Classifications Explained

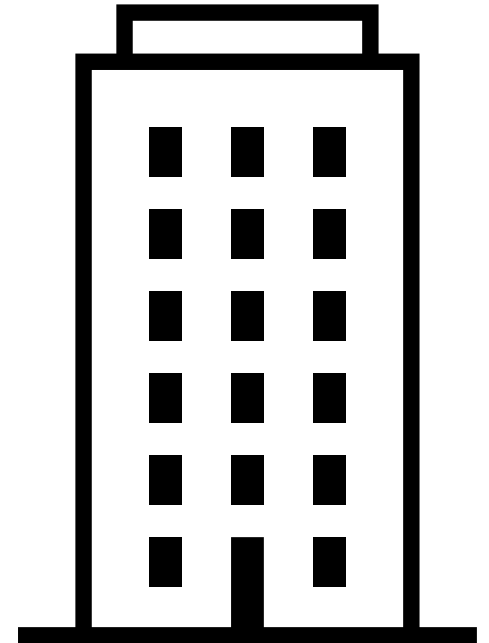
Class A1

- A1 Classification means non-combustible - no contribution to fire.
- Galvanised steel is considered Class A1 without testing, as per European Commission paper 96/603/EC.
- Galvanised steel remains robust at elevated temperatures and has a high melting point of 1450-1520° C.
- All products in Rytons A1[®] Fire-rated Range are made from galvanised steel.

Class A2-s1, d0

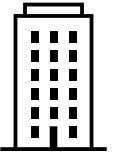
- A2 Classification means limited combustibility - very limited contribution to fire.
- s1 means emissions absent or very little - d0 means no burning droplets.
- All powder coating used on Rytons A1[®] Fire-rated Range achieves Class A2-s1, d0.
- Class A2-s1, d0 is the highest fire rating a coating can achieve due to the requirement for a minimum dry film thickness to be above 60 microns.

High-rise Buildings 18m +



Approved Document B: Fire safety

Requirement B4: External fire spread



High-rise Buildings
18m +

Objective:

To resist the spread of fire over external walls and from one building to another.

Regulation:

Materials forming part of an external wall or specified attachment of a *relevant building* to be of European Classification A1 or A2-s1, d0.

Achieved by:

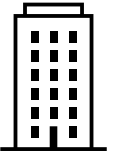
Using products made of non-combustible materials within any space forming part of the wall.

Apply to:

- Air Bricks and Grilles
- MVHR and Extract Ducting
- Cavity Weep Hole Ducts

Approved Document B: Fire safety

Regulation 7(4): Relevant buildings



High-rise Buildings
18m +

Definition: A building with a storey at least 18m above ground level containing a residence.

Residential:

- Apartment building
- Student accommodation
- Mixed use
apartments/offices/retail

Institutional:

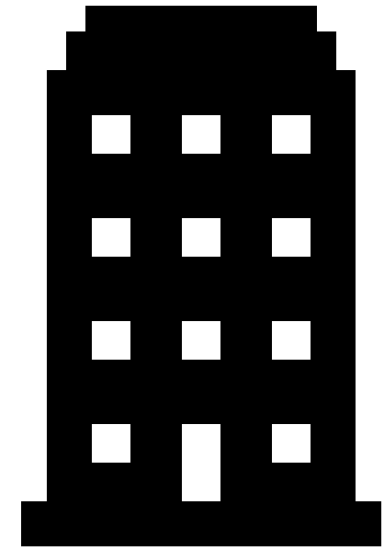
- Hospital
- School
- Residential care facility

Hospitality:

- Hotel
- Hostel
- Boarding house

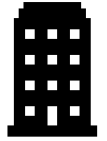
Note: Where a building is mixed-use, it is defined as *relevant* regardless of whether the residential storey is within 18m of ground level.

Mid-rise Buildings 11m to 18m



Approved Document B: Fire safety

Requirement 10.5: External surfaces



Mid-rise Buildings
11m to 18m

Objective:

To resist the spread of fire over external walls based on the proximity of the boundary.

Regulation:

Table 10.1 Residential Purpose Groups 1 and 2

The external surfaces of external walls should comply with European Classification A2-s1, d0 or better.

Achieved by:

Using products made of non-combustible materials when fixed to, or passing through, the external surface.

Apply to:

- Air Bricks
- Grilles
- Cowls
- Cavity Weep Hole Ducts

Houses and
Low-rise Buildings
11m or Less



Approved Document B: Fire safety

Requirement 10.5: External surfaces



Houses and Low-rise
Buildings 11m or less

Objective:

To resist the spread of fire over external walls based on the proximity of the boundary.

Regulation:

Table 10.1 Residential Purpose Groups 1 and 2

The external surfaces of external walls within 1m of the relevant boundary should comply with European Classification B-s3, d2 or better.

Achieved by:

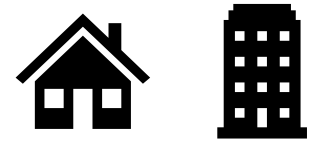
Using products made of non-combustible materials when fixed to, or passing through, the external surface as plastic cannot meet the B-s3, d2 criteria.

Apply to:

- Air Bricks
- Grilles
- Cowls
- Cavity Weep Hole Ducts

Approved Document B: Fire safety

Purpose Groups 1 and 2



Mid-rise, Houses and
Low-rise Buildings

Definition: Buildings where people sleep on the premises.

Residential:

- Flats and apartments
- Student accommodation
- Mixed use
apartments/offices/retail

Institutional:

- Hospital
- School
- Residential care facility

Hospitality:

- Hotel
- Hostel
- Boarding house

Approved Document F: Ventilation



Houses and Low-rise
Buildings 11m or less

How do Part B fire safety requirements affect passive background ventilation and Part F?

- Part B does not permit plastic through-wall ventilators to be fitted through the external surfaces of walls within 1m of the relevant boundary, as plastic cannot meet the B-s3, d2 Classification required.
- Best practice is to ensure plastic background ventilators are in walls 1m or more from the relevant boundary. If this is not possible the external grille fixed to the external surface should be made from Class A1 or A2-s1, d0 material.
- Please note: Replacing the external grille of a manufacturer's ventilation set could affect the published equivalent area, requiring sign-off/approval by Building Control.

Examples of Projects Requiring A1 or A2-s1, d0 Classified Components

- New build high-rise residential developments.

- Refurbishments as part of dangerous cladding removal works.

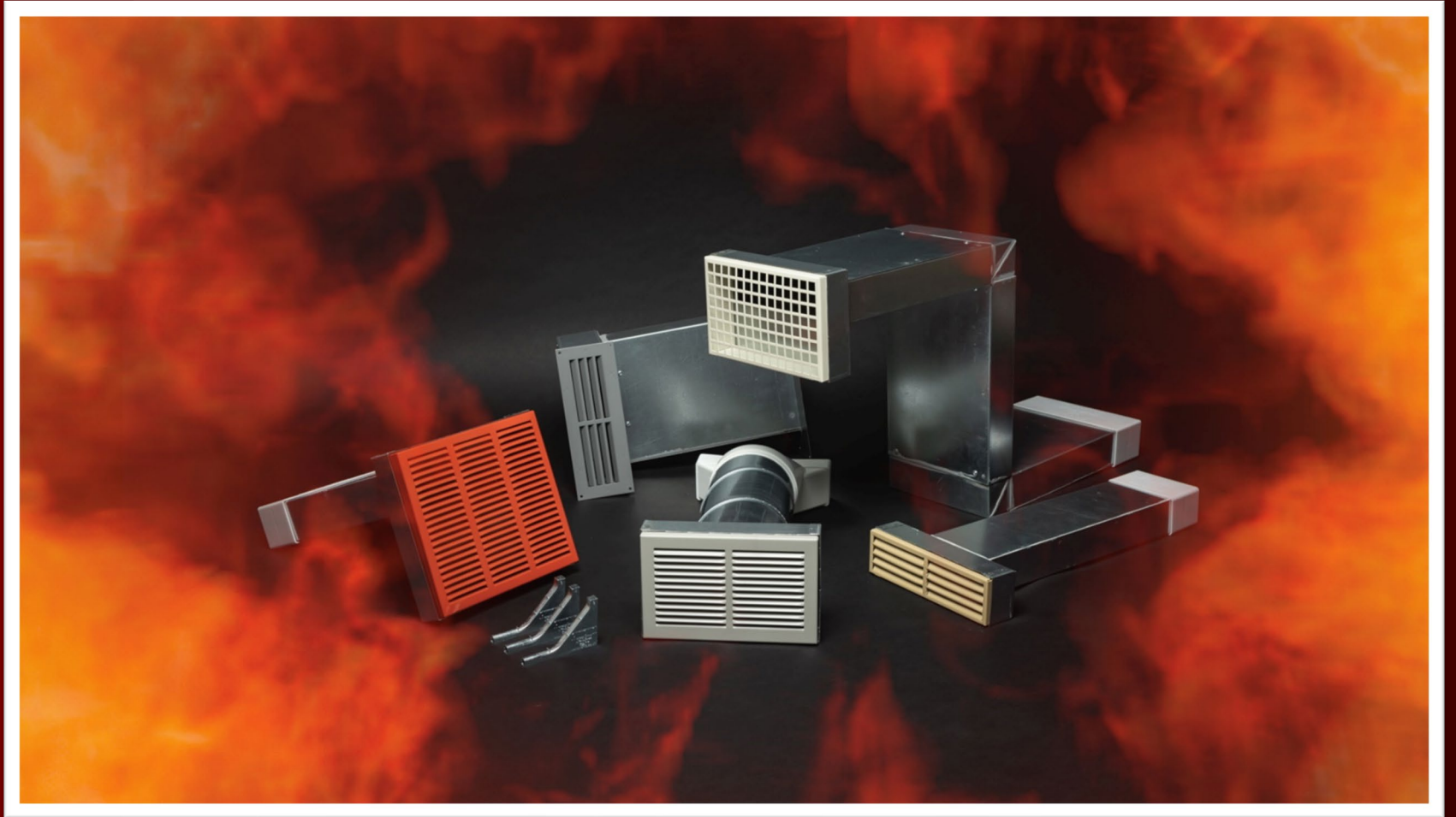
- Re-development of commercial premises into residential properties.

- New build mid-rise residential developments.

- House builds and low-rise builds within 1m of the relevant boundary.

Part 2:

Rytons A1[®]
Fire-rated
Range



Rytons A1[®] Fire-rated Ducting Kits

- Straight Kits
- 90° Balcony Kits
- S-shape Kits for off-set window head and ceiling voids
- Soldier Brick Kits



EUROPEAN CLASSIFICATION A1
— NON-COMBUSTIBLE . FIRE SAFE —

Rectangular

An extensive range of tailor-made rectangular ducting kits compatible with the most widely used MVHR systems and extract ducting:

- 110mm x 54mm
- 204mm x 60mm
- 220mm x 90mm
- Customise duct to site requirements.
- Pick from three air brick styles plus flanged options.
- RAL colour powder coating (achieving Class A2-s1, d0) to match brickwork or cladding.

Rytons A1[®] Fire-rated Ducting Kits

- 100mm Dia. Kits • 125mm Dia. Kits • 150mm Dia. Kits
- Round and rectangular air brick grille options



EUROPEAN CLASSIFICATION A1
— NON-COMBUSTIBLE . FIRE SAFE —

Round

A large range of tailor-made spiral ducting kits compatible with the three most widely used sizes of MVHR and extract ducts.

Choice of attachment for flat or round duct:

- 110mm x 54mm
- 204mm x 60mm
- 220mm x 90mm
- 100mm Dia.
- 125mm Dia.
- 150mm Dia.
- Customise duct to site requirements.
- Round and rectangular air brick styles plus, flanged options.
- RAL colour powder coating (achieving Class A2-s1, d0) to match brickwork or cladding.

Rytons A1[®] Fire-rated Ducting Kits



Retrofit Specialists

A wide range of tailor-made round and rectangular retrofit ducting kit designs.

- Allow upgrades from plastic to metal HVAC supply and extract ducting on buildings undergoing unsafe cladding remediation work without accessing the apartments.
- Oversize metal ductwork encases in-situ plastic ducting and terminates with a wide flange for secure fixing to the cavity board.
- Rytons are tailor-made retrofit ducting kit design specialists.

Rytons A1[®] Fire-rated Ducting Kits

Supplied sealed
and ready to fit

An unrivaled
benefit

- No on-site assembly
- No screw fixing
- No sealing
- No drying time
- No waiting
- Correct alignment
- Airtight joints



Rytons A1[®] Fire-rated Metal Air Bricks

Five unique benefits

1. Sized to bricks not the duct.
Use standard mortar joints.
-

2. Built-in weather protection.
Reduces the risk of water transfer.
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3. Telescopic fit to ducting.
Overcome minor variations in the façade.



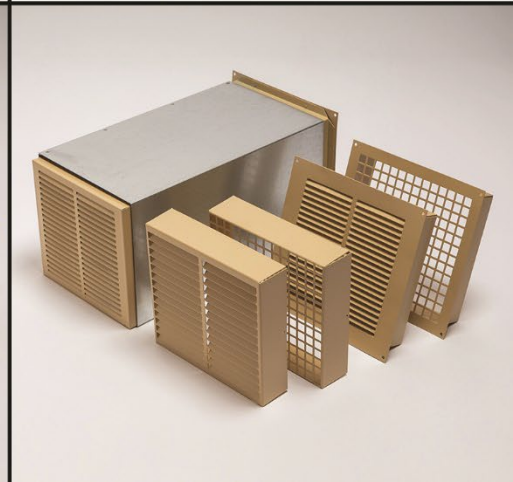
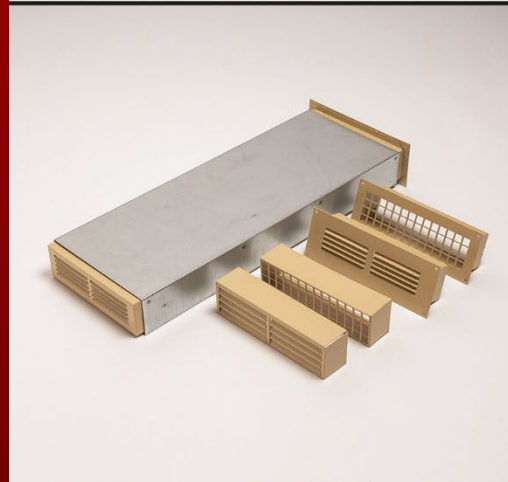
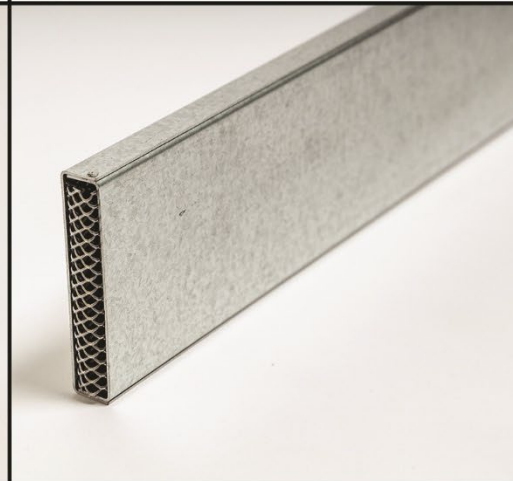
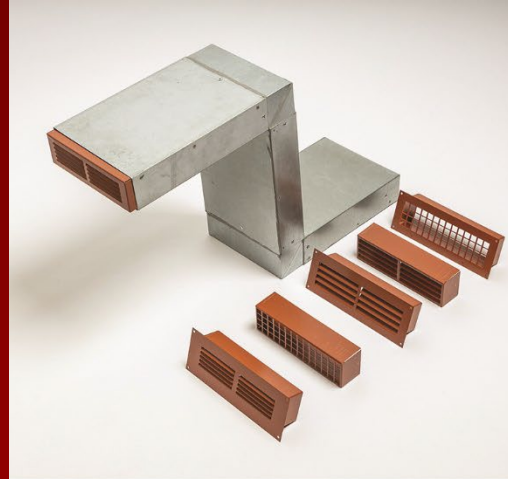
4. Available with and without a flange.
Options for brickwork and cladding.
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5. RAL colour powder coating.
Your choice for the perfect match.

Rytons A1[®] Fire-rated Range

Ducting kits
and more

See our full A1 range at
www.vents.co.uk



Rytons A1[®] Special Service

Unique buildings and complex refurbishments often call for tailor-made pieces.

Our technical teams have extensive experience, allowing us to design and manufacture specialist items to suit unique requirements.

- Custom air bricks
- Manifold and plenum boxes
- Telescopic ductwork
- Bends and connectors
- Multi-duct kits

See just some of our commissions in our online gallery at www.vents.co.uk.



Technical Information

Find valuable Regulation extracts and product information on our website at www.vents.co.uk.

There you will find:

- Guides to current Fire Safety Regulations
- Technical product pages
- Specification paragraphs and NBS Source links
- Pressure loss data
- Material specification sheets
- Corrosion statements
- Online quote request forms

Alternatively, our Technical Sales team are always happy to help – call us on 01536 511874 or email admin@rytons.com.

Contact Us



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