

Fire Block and Pressed Steel Grilles

Fire Block FB60

Sodium silicate based intumescent material. Provides the lowest activation temperature of any intumescent material at 100 degrees C.

It is encapsulated in PVC extrusions assembled in the form of a matrix.

Fire Block FB120

Graphite based intumescent material.

Provides resistance to moisture and aggressive environments.

It is wrapped in metal foil creating a 4mm thick section which is both rugged and easy to install.



Air Diffusion

Grilles Diffusers Louvres Chilled Beams

Ruskin Air Management Limited
www.ruskinuk.co.uk

Fire Block FB60

Features

- Fits directly into ducts, doors or wall apertures
- Good free area (up to 60%)
- No moving parts
- Resistant to clogging
- Excellent fire integrity and insulation performance
- Only 40 mm front to back
- Robust construction
- Simple installation
- Lower overall costs
- No maintenance
- Bi-directional airflow.

General

This product's compact form allows for installation in doors or other apertures where other types of block cannot be fitted or accessed after installation. Requiring no commissioning or operation function checks these products provide confidence with economy. Available in sizes from 98mm square to 598mm square and many height to width ratios in 25mm increments.

Specifications

Materials

Intumescent material used in the slat construction is based upon sodium silicate. It is encapsulated in PVC extrusions with cross section dimensions of 40mm x 6mm and they are assembled in the form of a matrix.

Mortised jointing of the block slats to the intumescent outer components eliminates the need for any metal components around the periphery.

Each size of block is manufactured 2mm less than the corresponding duct or aperture size to provide clearance during installation. e.g. a 198mm x 198 mm block is suitable for a 200mm x 200mm duct/door aperture.

Care is taken during manufacture to seal the material from the effects of moisture, since sodium silicate is by nature hygroscopic. However, in application where high levels of humidity or wetness are anticipated, it is recommended that FB120 products should be used.



Orientation

FB60 products should be used in a vertical orientation as illustrated.

Products tested in accordance with BS476: Pts 20 & 22 and BS EN 1643-1 : 2000

Provides 60 minutes resistance to fire and hot smoke.

Installation

For installation information please contact the Air Diffusion Sales Office.

Fire Block FB120

Features

- Rugged construction
- Fits directly into ducts, walls or doors
- Good free area (up to 65%)
- Only 44mm thick
- Tolerant of high humidity
- Withstands harsh environments
- Not prone to clogging
- Available in a multitude of sizes
- Can be installed directly into duct
- No access panels required
- No moving parts
- No need for regular function checks
- No maintenance.

General

This all-purpose block can be relied upon to function in extremes of climate and environment. It can suffer considerable abuse during and after installation without losing effectiveness in the control of fire and hot gases.

Contaminants do not readily adhere to it and therefore an efficient airflow can be expected throughout its working life.

The FB120 range blocks can be assembled in multi-modules in order to protect large apertures.

Specifications

Materials

The composite intumescent material selected for the FB120 range consists of graphite particles that are contained in a carrier that is impervious to the effects of water. The material when activated by heat produces a very durable barrier to the spread of fire and hot gases, whilst providing good insulation performance.

Intumescent slats are formed by wrapping intumescent material in metal foil, creating a 4mm thick section. Steel channels, 5.5mm wide, support the outer edges of the slat and are themselves located into notches in both the front and back steel frames. The two piece outer frame is arranged to give a thermal break between the front and back and is made from 1.00mm. galvanised mild steel.

Each block size is manufactured 2mm less than a nominal aperture size to



provide clearance when installed in a door or other aperture of the same nominal dimensions. e.g. a 198mm x 198mm nominal size block will suit a 200mm x 200mm duct/door aperture.

The complete assembly is a rugged block that is easy to install and will require minimal, if any, post installation attention.

Orientation

FB120 dampers can be installed in any orientation.

Products tested in accordance with BS476: Pts 20 & 22 and BS EN 1643-1 : 2000.

Provides 180 minutes resistance to fire and hot smoke.

Installation

For installation information please contact the Air Diffusion Sales Office.

Pressed Steel Grille (PSI)



Grilles have horizontal louvres with 30 degree downward deflection.

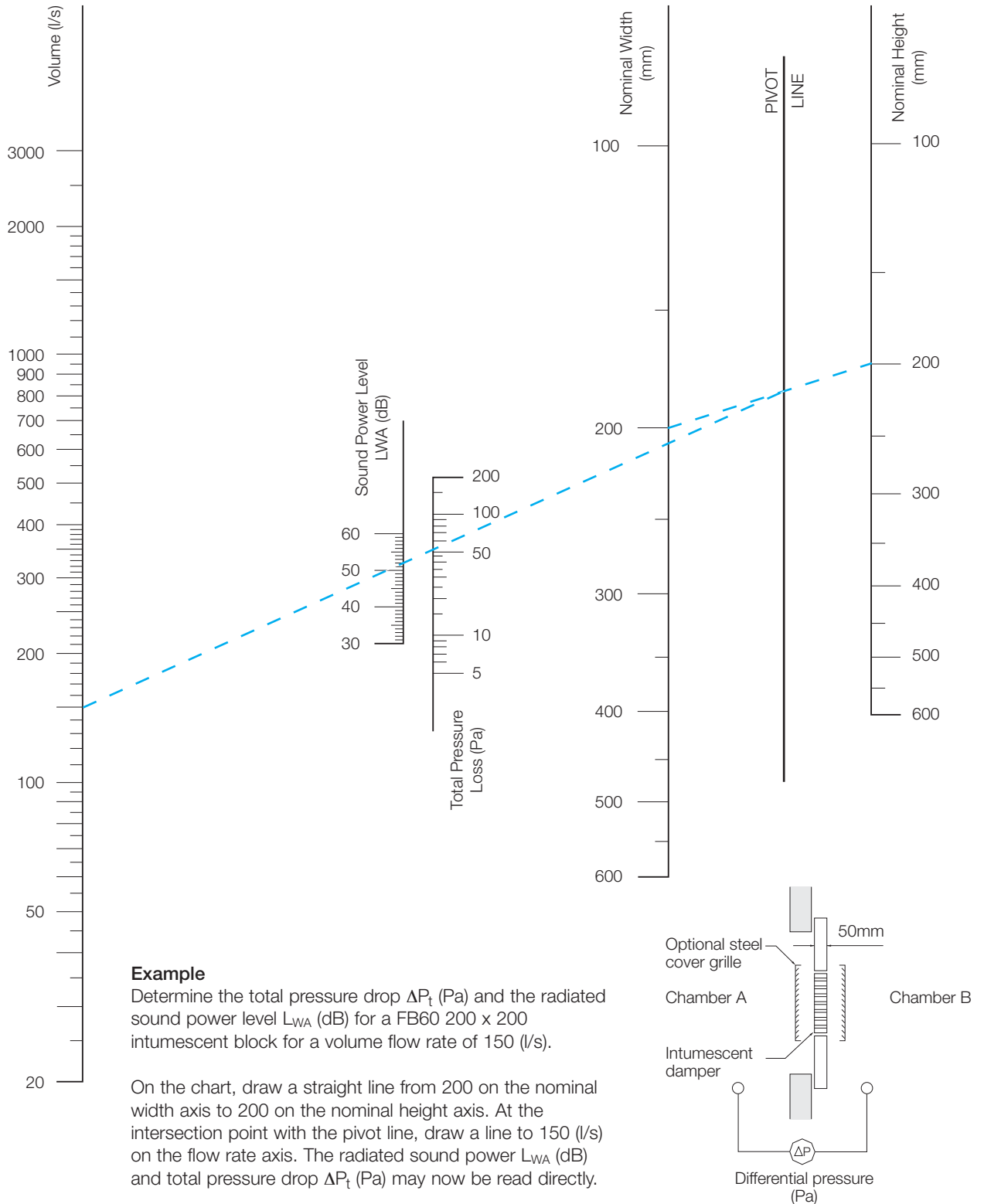
The grilles are sturdily constructed from 20 SWG steel and are available in a wide range of standard sizes. See list sizes and free area in square centimetres.

Grilles are supplied in white or silver as standard or can be painted to standard BS or RAL colours at extra cost.

Performance Guide : FB60 Fire Rated Intumescent Block

Performance Criteria

The acoustic and aerodynamic performance is based on a wall/door mounted application with an intumescent block type FB60 fitted with cover grilles.



Example

Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level L_{WA} (dB) for a FB60 200 x 200 intumescent block for a volume flow rate of 150 (l/s).

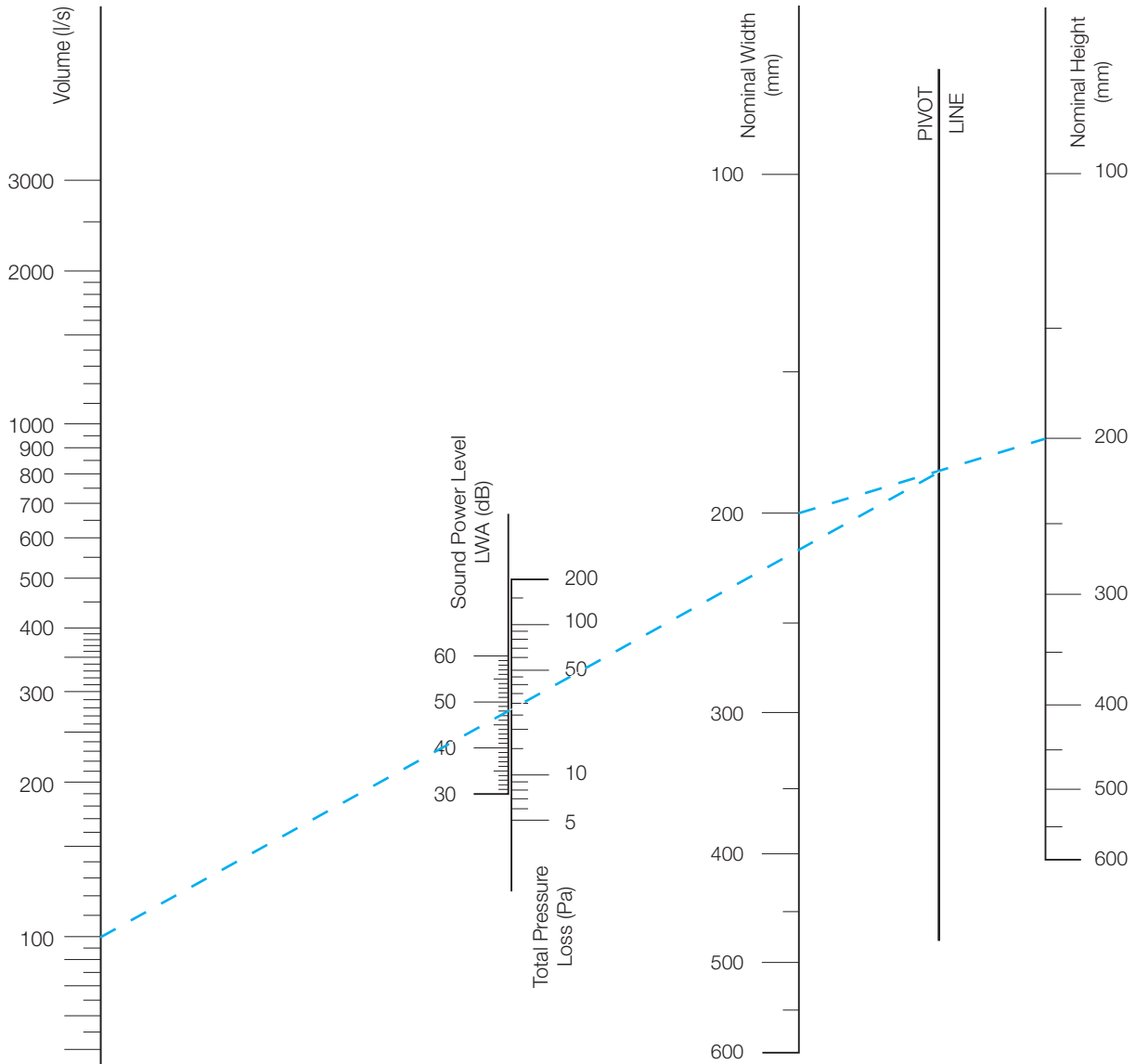
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 150 (l/s) on the flow rate axis. The radiated sound power L_{WA} (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

- Type:** FB60 - PSI 200 x 200
- Flow rate: (l/s):** 150
- Total pressure drop: ΔP_t (Pa):** 52
- Radiated sound power L_{WA} (dB):** 52

Performance Guide : FB120 Fire Rated Intumescent Block

Performance Criteria

The acoustic and aerodynamic performance is based on a wall/door mounted application with an intumescent block type FB120 fitted with cover grilles.

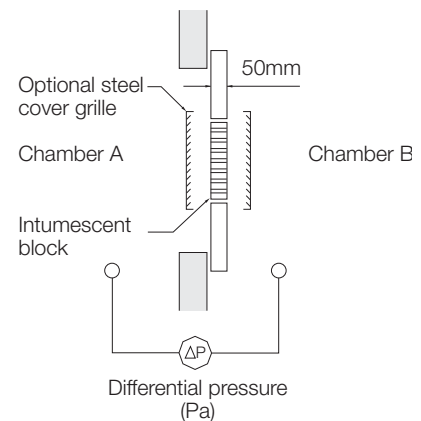


Example

Determine the total pressure drop ΔP_t (Pa) and the radiated sound power level L_{WA} (dB) for a FB120 200 x 200 intumescent block for a volume flow rate of 100 (l/s).

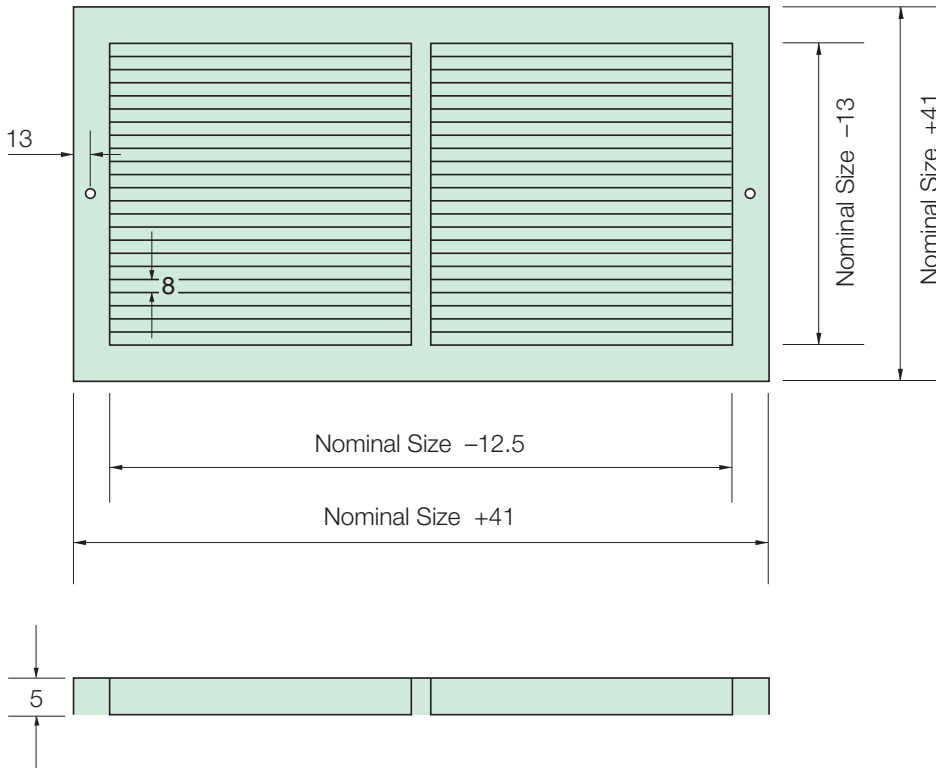
On the chart, draw a straight line from 200 on the nominal width axis to 200 on the nominal height axis. At the intersection point with the pivot line, draw a line to 100 (l/s) on the flow rate axis. The radiated sound power L_{WA} (dB) and total pressure drop ΔP_t (Pa) may now be read directly.

- Type:** FB120 - PSI 200 x 200
- Flow rate: (l/s):** 100
- Total pressure drop: ΔP_t (Pa):** 28
- Radiated sound power L_{WA} (dB):** 48



Pressed Steel Grille

Details and Dimensions



Grilles supplied with screw hole in flange as standard

All dimensions shown are in mm.

Sizes

Cover grilles can be supplied in a wide range of sizes to suit the intumescent dampers. Sizes from 150 up to 600mm in 50mm increments, in either configuration, offer great flexibility when selecting grille sizes.

Typical free areas of steel cover grilles are shown below.

150 x 150 mm	67%
200 x 200 mm	65%
300 x 300 mm	69%
450 x 450 mm	70%
600 x 600 mm	70%

Standard nominal sizes available (mm)

Width	98	148	198	248	298	348	398	448	498	598
Height	98	148	198	248	298	348	398	448	498	598

Other non standard sizes may be obtained by arrangement. For dimensions greater than 600mm, please contact the Air Diffusion sales office.

Ordering Procedure

Example

Fire Block FB	Fire Rating	Grille Status	Size Width	Size Height
	60	2	300	250
	60 minutes	PS1	150	x 150
	120 minutes	PS2	200	x 200
			300	x 300
			350	x 350

The model described in the example above would be : FB - 60 - PS2 - 300 - 250

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Due to a policy of continuous product development the specification and details contained herein are subject to alteration without prior notice.

**Comprehensive and detailed information
is available for all Air Diffusion products.
Visit our website at www.air-diffusion.co.uk**

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