

### TECHNICAL DATA

**1** 1 layer of PROMATECT®-H board

For FRL of 120/120/30\* 15mm thick

For FRL of 120/120/120\* 15mm thick with 1 layer of mineral wool 50mm x 100kg/m³

For FRL of 240/240/60

For FRL of 240/240/120\* 12mm thick + 50mm x 100kg/m³ mineral wool

For FRL of 240/240/240\* 15mm thick with 1 layer of mineral wool 80mm x 100kg/m³

For FRL of 240/240/240\* 25mm thick with 2 layers of mineral wool 50mm x 100kg/m³ each

**2** 1 layer of PROMATECT®-H cover strips, 100mm wide x 9mm thick.

**3** 1 layer of PROMATECT®-H collars, 150mm wide x board thickness according to the desired FRL, fitted around the duct on both sides on the wall forming an L-shape.

**4** Steel channels minimum 50mm x 50mm x 0.6mm thick at butt joints

**5a** Steel angles 50mm x 50mm x 0.6mm thick or

**6** Duct hanger system, stress not more than 10N/mm² for 2hr Rating.

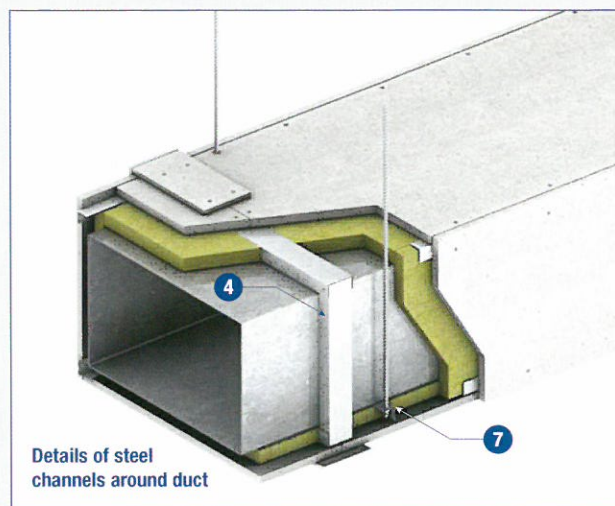
**7** Steel angles minimum 30mm x 30mm x 3mm thick according to duct weight and size and maximum permitted stress levels

**8** No.8 self-tapping screws at nominal 200mm centres or steel wire staples 28/10/1mm at nominal 100mm centres

**10** Mild steel ventilation duct

**11** 1 layer of mineral wool tightly packed into aperture between substrate and the surface of the steel duct

\*To BS476: Part 24 only



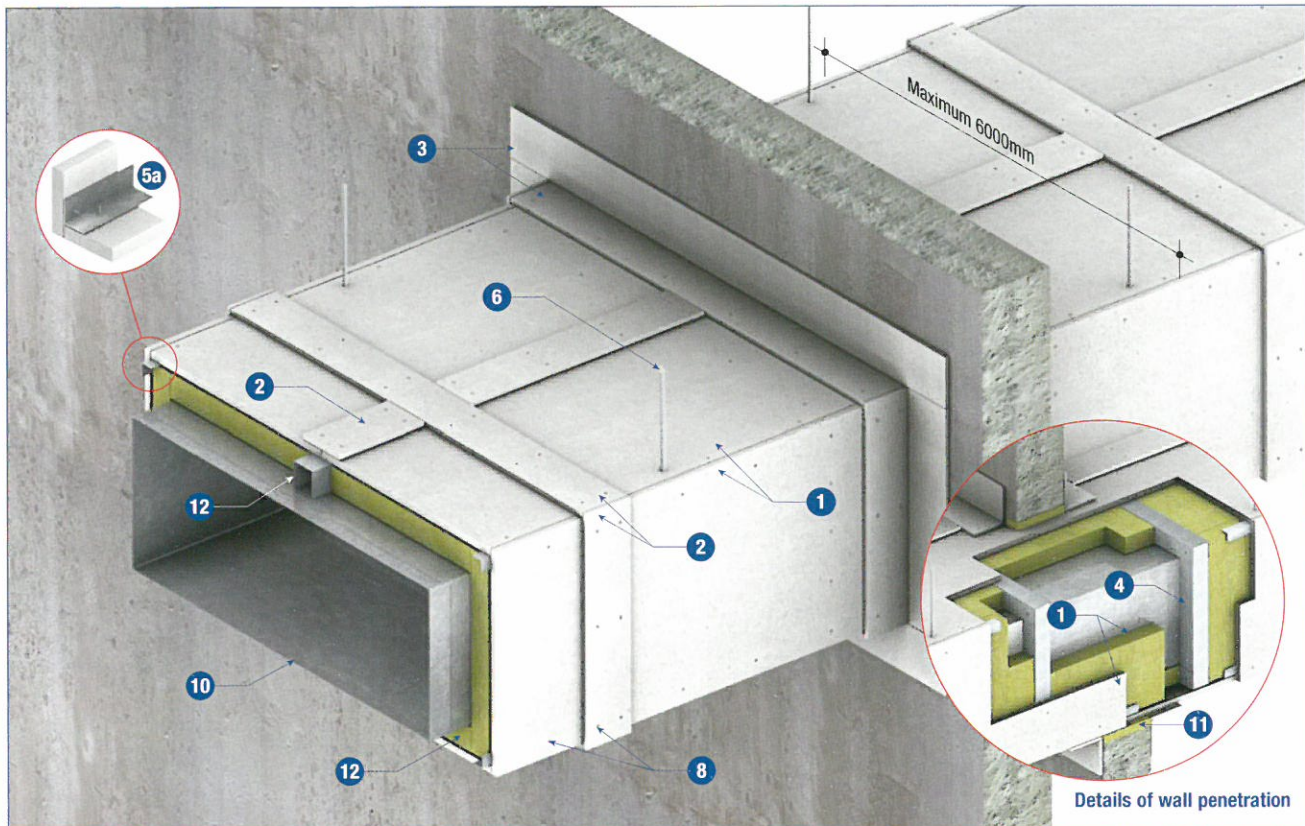
Fire resistant ducts can be formed where the substrate from which the steel duct is supported provides protection to some areas, thus 1, 2 and 3-sided solutions in combination with walls and ceilings are available.

The above construction of fire resistant encasements around steel ducts is up to 1500mm wide in accordance with the criteria of BS476: Part 24 and AS1530: Part 4, exposed to external and internal fire. However, PROMATECT®-H duct systems are approved for up to 10m wide. Variations on supporting components for duct width up to 15m are available on request.

As an alternative fixing method, the angle at the corner and the channel at the butt joints can be replaced by PROMATECT®-H cover strips 25mm x 25mm and 25mm x 50mm respectively. The installation time will then be shortened by using steel staples at nominal 100mm centres instead of screws.

For impact resistant systems in accordance with the criteria BS5669: Part 1 exposed to external and internal fire, 15mm, 20mm or 25mm thick PROMATECT®-H boards are required. Insulation will be as Duct type B (exposed to internal fire).





Details of wall penetration

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### 1 1 layer of PROMATECT®-H board

- For FRL of 120/120/30\* 15mm thick  
For FRL of 120/120/120\* 15mm thick with 1 layer of mineral wool 50mm x 100kg/m<sup>3</sup>  
For FRL of 240/240/60 12mm thick + 50mm x 100kg/m<sup>3</sup> mineral wool  
For FRL of 240/240/120\* 15mm thick with 1 layer of mineral wool 80mm x 100kg/m<sup>3</sup>  
For FRL of 240/240/240\* 25mm thick with 2 layers of mineral wool 50mm x 100kg/m<sup>3</sup> each

### 2 1 layer of PROMATECT®-H cover strips, 100mm wide x 9mm thick.

### 3 1 layer of PROMATECT®-H collars, 150mm wide x board thickness according to the desired FRL, fitted around the duct on both sides on the wall forming an L-shape.

### 4 For duct span up to 3000mm

Steel channels 50mm x 50mm x 0.9mm thick around duct, spaced at centres in accordance to the width of the duct to ensure a maximum unsupported area not exceeding 1.5m<sup>2</sup>.

### 5a Steel angles 50mm x 50mm x 0.6mm thick or

### 6 Duct hanger system, stress not more than 10N/mm<sup>2</sup> for 2hr Rating, 6N/mm<sup>2</sup> for 4hr Rating.

### 7 Steel angles minimum 30mm x 30mm x 3mm thick according to duct weight and size and maximum permitted stress levels

### 8 No.8 self-tapping screws at nominal 200mm centres or steel wire staples 28/10/1mm at nominal 100mm centres

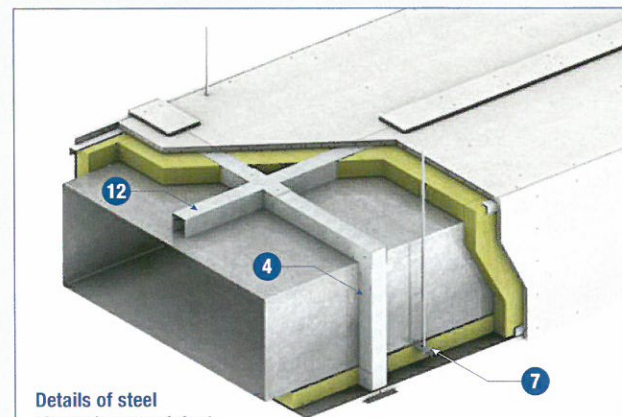
### 10 Mild steel ventilation duct

### 11 1 layer of mineral wool tightly packed into aperture between substrate and the surface of the steel duct

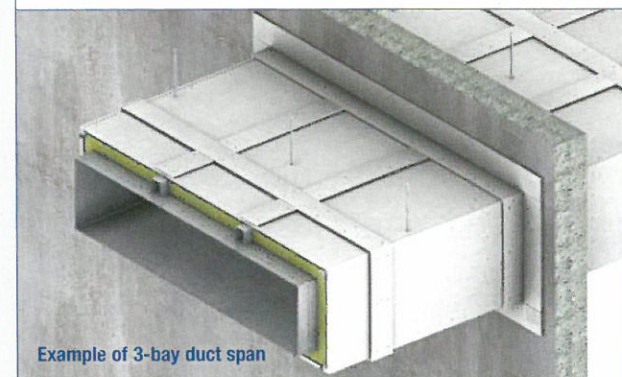
### 12 For duct span between 3000mm to maximum 6000mm

Additional support brackets at mid span, please consult Promat Technical Department for construction details.

\*To BS476: Part 24 only



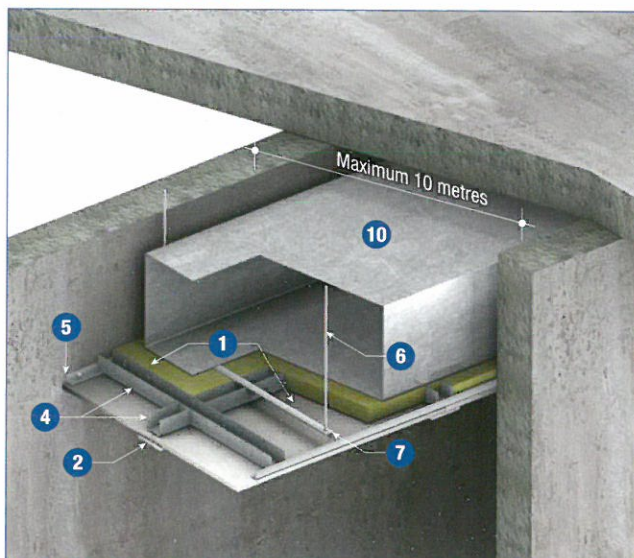
Details of steel channels around duct



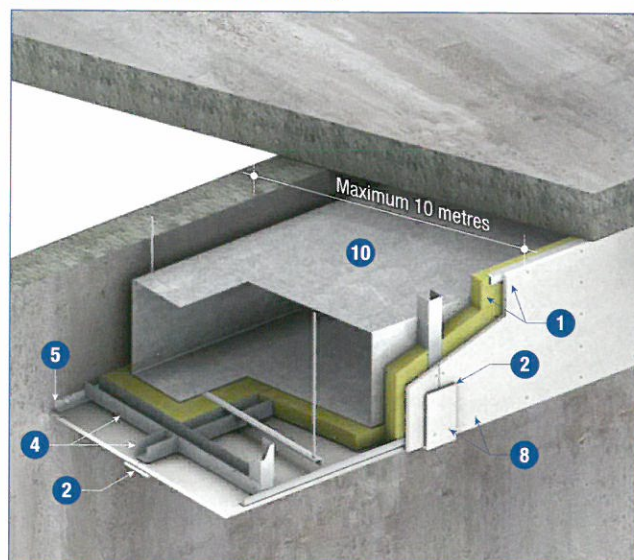
Example of 3-bay duct span



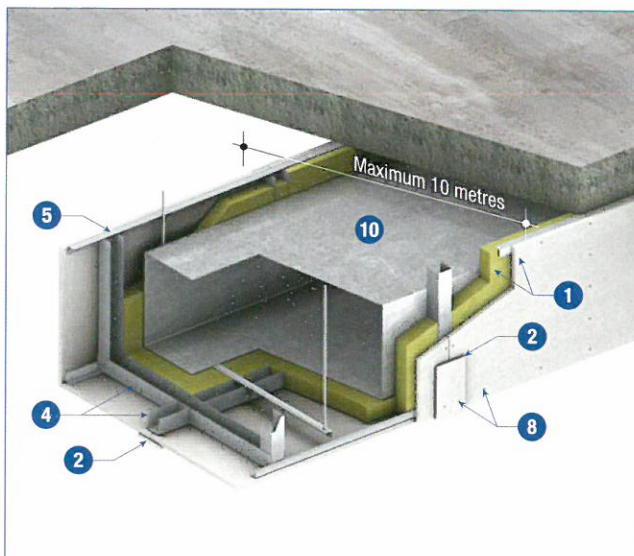
Example of 1-sided duct cladding



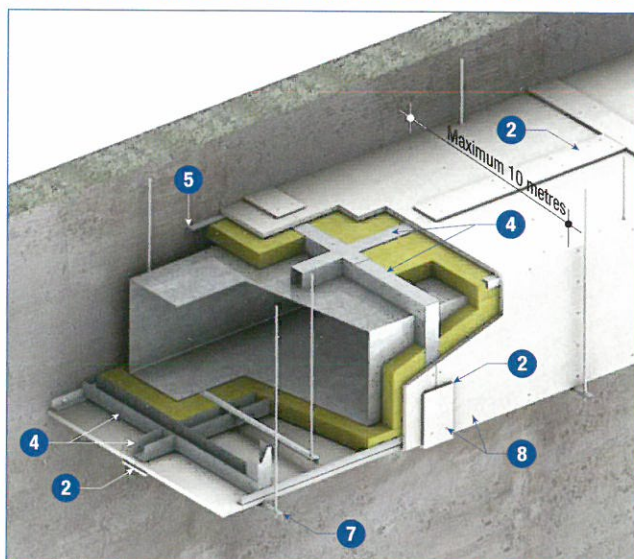
Example of 2-sided duct cladding



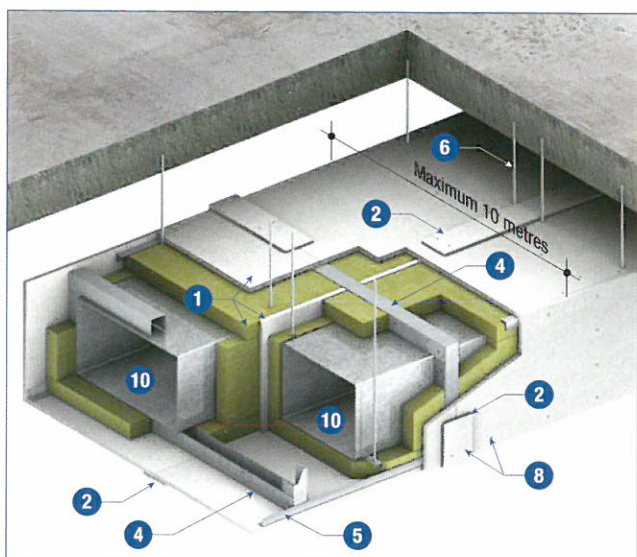
Example of 3-sided duct cladding (from the underside of the substrate)



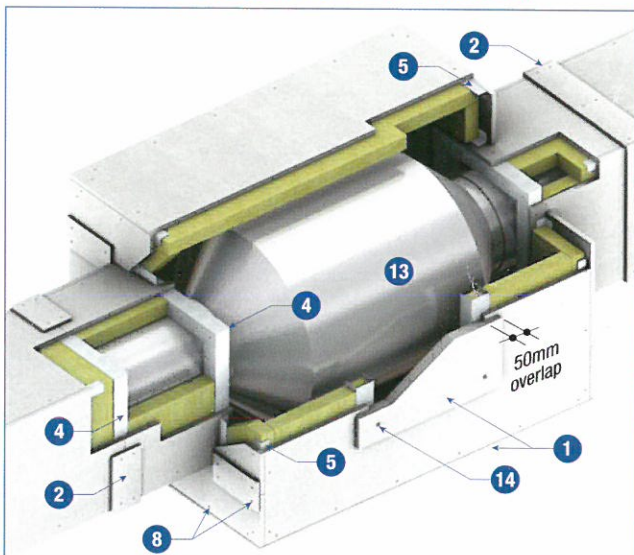
Example of 3-sided duct cladding (to the side of the substrate)



Example of cladding multiple ducts



Example of cladding protection for VCD, silencers etc





### General Description

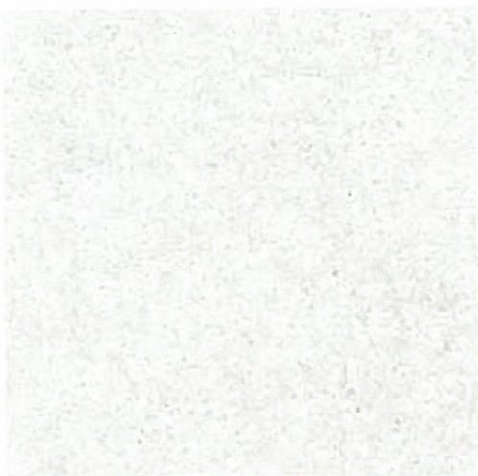
PROMATECT®-H is a non-combustible matrix engineered mineral board reinforced with selected fibres and fillers. It is formulated without inorganic fibres and does not contain formaldehyde.

PROMATECT®-H is off-white in colour and has a smooth finish on one face with a sanded reverse face. PROMATECT®-H can be left undecorated or easily finished with paints, wallpapers or tiles.

PROMATECT®-H is resistant to the effects of moisture and will not physically deteriorate when used in damp or humid conditions. Performance characteristics are not degraded by age or moisture.

PROMATECT®-H is also produced as bevelled edge panels for suspended ceilings using a concealed grid system.

A health and safety data sheet is available from the Promat Technical Department and, as with any other materials, should be read before working with the board. The board is not classified as a dangerous substance so no special provisions are required regarding the carriage and the disposal of the product to landfill. They can be placed in an on-site skip with other general building waste which should then be disposed by a registered contractor.



### Typical Mechanical Properties

|   |                            |  |              |
|---|----------------------------|--|--------------|
| Modulus of elasticity, E<br>(BS EN 310: 1993)   | Longitudinal<br>Transverse | N/mm <sup>2</sup><br>N/mm <sup>2</sup> | 4995<br>4389 |
| Flexural strength, F <sub>rupture</sub><br>(BS EN 310: 1993)                          | Longitudinal<br>Transverse | N/mm <sup>2</sup><br>N/mm <sup>2</sup> | 10<br>6      |
| Tensile strength, T <sub>rupture</sub><br>(BS5669: Part 1: 1989)                      | Longitudinal<br>Transverse | N/mm <sup>2</sup><br>N/mm <sup>2</sup> | 7.16<br>4.94 |
| Compressive strength (average, perpendicular on board face)<br>(BS5669: Part 1: 1989) |                            | N/mm <sup>2</sup>                      | 11.36        |

### Applications

- Structural steel
- Ceilings, floors and roofs
- Partitions and external walls
- Ventilation and smoke extraction ducts
- Electrical and mechanical services enclosures
- Fire resistant glazing
- Tunnel fire protection and upgrading of concrete structures
- Smoke barriers, access panels and hatches

### General Technical Data

| Product generic description                                    |                               |                             |   | Matrix engineered mineral board  |   |  |
|--|-------------------------------|-----------------------------|---|--|---|--|
| Material class   |                               |                             |   | Non-combustible to DIN4102: Part 1, BS476: Part 4 and AS1530: Part 1.        |   |  |
| Surface spread of flame  |                               |                             |   | Class 1 to BS476: Part 7 and 0,0,0,0 to AS1530: Part 3.                      |   |  |
| Building regulations classification                            |                               |                             |   | Class 0  |   |  |
| Nominal density at EMC* (average)                              |                               |                             | kg/m <sup>3</sup>                           | 975  |   |  |
| Alkalinity (approximately)                                     |                               |                             | pH  | 12   |   |  |
| Thermal conductivity (approximately) at 40°C (ASTM C518: 1991) |                               |                             | W/m <sup>2</sup> K                          | 0.17   |   |  |
| Coefficient of expansion                                       |                               |                             | m/mk  | -6.4 x 10 <sup>-4</sup>  |   |  |
| Nominal moisture content at EMC*                               |                               |                             | %   | 6  |   |  |
| Thickness tolerance of standard boards                         |                               |                             | mm  | ± 0.5  |   |  |
| Length x width tolerance of standard boards                    |                               |                             | mm  | ± 5  |   |  |
| Surface condition  |                               |                             |   | Front face: smooth<br>Back face: dimple pattern                              |   |  |
| Thickness (mm)   | Standard dimensions (mm x mm) | Number of boards per pallet | Surface per pallet (m <sup>2</sup> /pallet) | Weight per m <sup>2</sup> of sheet, dry (approximately) (kg/m <sup>2</sup> ) | Weight per m <sup>2</sup> of sheet at 20°C, 65% RH (approximately) (kg/m <sup>2</sup> ) | Weight per pallet (approximately) (kg) |
| 9  | 2440 x 1220                   | 61                          | 181.5                                       | 8.77   | 9.29  | 1687                                   |
| 12   | 2440 x 1220                   | 46                          | 136.9                                       | 11.7   | 12.4  | 1697                                   |
| 15   | 2440 x 1220                   | 36                          | 107.1                                       | 14.6   | 15.5  | 1660                                   |
| 20   | 2440 x 1220                   | 27                          | 80.3  | 19.5   | 20.6  | 1654                                   |
| 25   | 2440 x 1220                   | 22                          | 65.4  | 24.3   | 25.7  | 1680                                   |

\*EMC: Equilibrium moisture content. The properties in above tables are mean values given for information and guidance only. If certain properties are critical for a particular application, it is advisable to consult your nearest Promat Technical Department.

PROMATECT®-H is manufactured under a quality management system certified in accordance with ISO9001: 2000 Certification and in accordance with the environmental standards of ISO14001. For further technical information, please consult Promat.

GENERAL NOTE: AS FOR ALL PRODUCTS CONTAINING QUARTZ, SUCH AS CONCRETE AND CLAY, THIS PRODUCT WILL ALSO RELEASE DUST CONTAINING QUARTZ PARTICLES WHEN IT IS MECHANICALLY MACHINED (CUTTING, SANDING, DRILLING). INHALATION OF HIGH CONCENTRATIONS OF DUST CAN IRRITATE THE AIRWAYS. DUST CAN ALSO IRRITATE THE EYES AND/OR THE SKIN. THE INHALATION OF QUARTZ CONTAINING DUST, IN PARTICULAR HIGH CONCENTRATION OF FINE (RESPIRABLE) DUST OR OVER A PROLONGED PERIOD OF TIME CAN LEAD TO LUNG DISEASE (SILICOSIS) AND AN INCREASED RISK OF LUNG CANCER. AVOID THE INHALATION OF DUST BY USING MACHINERY WITH DUST EXTRACTION. GUARANTEE ADEQUATE VENTILATION ON THE WORK FLOOR. AVOID CONTACT WITH THE EYES AND SKIN AND AVOID INHALATION OF THE DUST BY WEARING APPROPRIATE PERSONAL PROTECTION GEAR (SAFETY GOGGLES, PROTECTIVE CLOTHING AND DUST MASK). FOR MORE INFORMATION PLEASE CHECK THE SAFETY DATA SHEET, AVAILABLE UPON REQUEST.

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