

# SUPALUX®

## *fire resistant systems*



041-009

**Intumex®**  
ASIA PACIFIC



## SUPALUX® - Contents

<b>INTRODUCTION</b>	PAGE 1
<b>SPECIFICATION &amp; PROPERTIES</b>	PAGE 2
<b>TYPE OF FIRE EXPOSURE</b>	PAGE 3
<ul style="list-style-type: none"><li>● Fire resistance of structures</li><li>● Non combustible materials</li><li>● Fire tests</li></ul>	
<b>STEELWORK</b>	PAGE 4
<ul style="list-style-type: none"><li>● Structural steel beam and column claddings</li></ul>	
<b>PARTITIONS</b>	PAGE 5-7
<ul style="list-style-type: none"><li>● Steel stud partitions</li><li>● External wall linings</li><li>● Solid partitions</li></ul>	
<b>CEILINGS &amp; FLOORS</b>	PAGE 8-12
<ul style="list-style-type: none"><li>● Ceiling membranes</li><li>● Suspended ceilings</li><li>● Loadbearing timber floors</li></ul>	
<b>DUCTWORK</b>	PAGE 13-14
<ul style="list-style-type: none"><li>● Cladding to steel duct — Stability and integrity only</li><li>● Cladding to steel duct — Stability, integrity and insulation</li></ul>	
<b>SERVICES ENCLOSURE</b>	PAGE 15-16
<ul style="list-style-type: none"><li>● Building services enclosure — Integrity only</li><li>● Building services enclosure — Integrity and insulation</li></ul>	



## SUPALUX® - Introduction



From top: External walls at Kim Chuan Depot, structural steel beam cladding at Chartered Semiconductor of Woodlands and post cladding of steel ducts at ION Orchard. All projects in Singapore.

SUPALUX® consist of a calcium silicate matrix of reinforced fibres and fillers, 100% asbestos free. The SUPALUX® formula is cured to form a dimensionally stable board through an autoclave process where the board is subject to pressurised steam and high temperature. The result is a board that is lightweight, has a high impact resistance, high fire resistance, and with all the excellent qualities that SUPALUX® has been delivering to a loyal following of customers and end users for more than 25 years.

### EFFECT OF MOISTURE

Saturate a SUPALUX® board in water and allow it to dry and it will return to its original condition with almost no degradation. Moisture and dampness has no permanent effect on the mechanical or fire performance of the material. It is therefore possible to install SUPALUX® at any time in the building programme.

### IMPACT RESISTANT

A SUPALUX® wall construction has fulfilled all the severe duty requirements for impact, crowd pressure, deflection and multiple cycles of door slam in accordance with British Standard 5234, proving its excellent impact resistance.

### THERMAL

SUPALUX® has very low thermal conductivity of 0.24 W/mK.

### BIOLOGICAL

SUPALUX® does not attract insects or vermin and does not support mould growth.

### CHEMICAL

SUPALUX® is not affected by brine or dilute chlorine and other chemical solutions. It is also resistant to low concentrations of most acids, alkalis, bleaching agents and solvents.

### COMPATIBILITY

SUPALUX® is compatible with most building materials, is non-caustic and will neither promote corrosion nor affect bituminous compounds.

The surface of SUPALUX® can readily receive many forms of architectural treatments from painting, wallpapering, waterproofing membranes, tiling, and other common aesthetic finishes. It is advised that the decorating materials manufacturers instructions should be strictly adhered to at all times.



## SUPALUX® - Specification & Properties

Density (nominal at EMC*)	950kg/m <sup>3</sup>	
Thickness	9, 12, 15, 20 and 25mm	
Thickness tolerance of standard boards	±0.5mm	
Width x Length**	1220mm x 2440mm	
Width x Length tolerance of standard boards	±5mm	
Weight per sheet	9mm	Approximately 25.5kg
	12mm	Approximately 33.9kg
	15mm	Approximately 42.4kg
	20mm	Approximately 56.6kg
	25mm	Approximately 70.7kg
Fire performance (BS 476: Part 4)	Non combustible	
Surface spread of flame (BS 476: Part 7)	Class 1	
Average bending strength (dry) (ISO 1896)	8.6N/mm <sup>2</sup>	
Average moisture content (BS EN 322)	6.01%	
Compressive strength (BS 5669: Part 1)	11.36Mpa	
Tensile strength (BS 5669: Part 1)	Transverse	4.94N/mm <sup>2</sup>
	Longitudinal	7.14N/mm <sup>2</sup>
Thermal conductivity (ASTM C518)	0.24206W/mK	
Total Volatile Organic Compounds (TVOC) emission rates (ASTM D5116-06)	Passed criteria for Singapore Green Label product	

\*Equilibrium moisture content.

\*\* Special size available upon request

The properties in above tables are mean values given for information and guidance only. If certain properties are critical for the application, please contact your nearest Intumex Asia Pacific office.

SUPALUX® is manufactured under a quality management system certified in accordance with ISO 9001 : 2000 Certification and in accordance with the environmental standards of ISO 14001. For further technical information, please consult Intumex Asia Pacific.

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 respiratory system. 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 material safety data sheet, available upon request from Intumex Asia Pacific.



## SUPALUX® - Terminology of Fire Resistance.

### FIRE RESISTANCE OF STRUCTURES

Fire resistance is not a property of a material but the performance of a complete element of structure which will generally be comprised of a number of different materials and components. The fire resistance of loadbearing and non loadbearing partitions and ceilings are determined by a test in accordance with the criteria of British Standard 476: Part 21 and 22: 1987 respectively.

Specifications shown in this document have been tested or assessed by independent authorities for compliance with International Standards. Additional testing has been carried out worldwide.

A fire resisting construction can be any one of a number of elements in a building, for example a wall, ceiling, duct, protected shaft or cavity barrier. This document gives details of some of the constructions used in fire resisting applications. For full details on many other fire resistant constructions please refer to Intumex Asia Pacific.

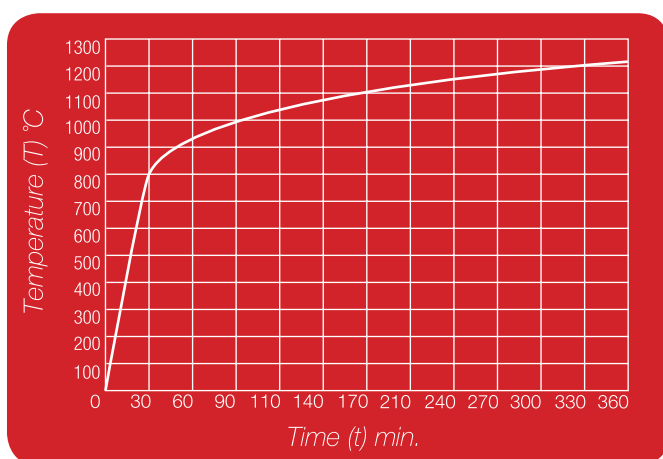
### NON COMBUSTIBLE MATERIALS

Building materials are classified as non combustible when they are tested to and pass BS 476: Part 4: 1970. SUPALUX® is non combustible. Under the Singapore building code, BS 476: Part 11: 1982 can be used to determine the heat emission of materials and thus the combustibility of a product.

These tests provide a measure of the propensity of materials to generate heat and flames under standardised heat exposure conditions, and represent some of the highest and most stringent standard for the reaction to fire performance of materials.

### FIRE TEST

Fire resistance is determined in tests which subject a representative specimen to heating conditions based on a standard temperature/time curve (below) while subject to its design loading where appropriate. Test methods are detailed in the various parts of the BS 476 series of standards. The fire resistance of a specimen is the time in minutes for which it continues to meet the criteria of *Stability*, *Integrity* and *Insulation* where appropriate.



The specimen under test is progressively heated in an accurately controlled furnace, the temperature of which varies with time and follows as closely as possible the International Standard curve. This is set out in graph form and is called the time/temperature curve. The heat evolved is not necessarily that which is produced in a true fire situation but is an agreed standard for purposes of comparison for elements of construction.

After 30 minutes the temperature of the furnace is 841°C, increasing to 945°C after 60 minutes. Then to 1049°C after 120 minutes to a maximum 1213°C after 360 minutes. These figures illustrate how severe the performance tests are in respect of elements of structure.

The fire resistance of an element is the time in minutes from the start of the test until failure occurs under any one of the criteria of *Stability*, *Integrity* and *Insulation* if all are appropriate to the particular type of element being tested; or, if no failure occurs, until the test is terminated.

For example, a test result showing

*Stability:* 120  
*Integrity:* 120  
*Insulation:* 15

would mean that a specimen failed in respect of the *Insulation* criteria after 15 minutes, but complied with the other criteria for at least 120 minutes. A large number of various types of elements of structure using SUPALUX® have been tested over a many years.

The designer of a building can therefore refer quite readily to previous test results from a range of official publications and will know whether or not the particular type of construction selected will be appropriate in respect of the fire resistance of the proposed elements of structure.

Should the designer wish to use new or untested materials, testing would be necessary and a satisfactory report would need to be furnished prior to approval being given for the use of such elements in the construction of a particular building.

#### *Stability*

*The ability of a system, e.g. ventilation and smoke extraction ductwork, to remain in place and capable of fulfilling its intended function throughout the duration of exposure to fire. This also applies to load-bearing elements of construction and refers to the ability of the specimen to stay in place and support the required load for the duration of its exposure to fire.*

#### *Integrity*

*The ability of a separating element of construction to contain a fire within one compartment and to remain free from holes, cracks or fissures through which fire, smoke or hot gases could pass to any adjacent compartment. This also refers to the ability of the specimen to prevent any sustained flaming on the unexposed face.*

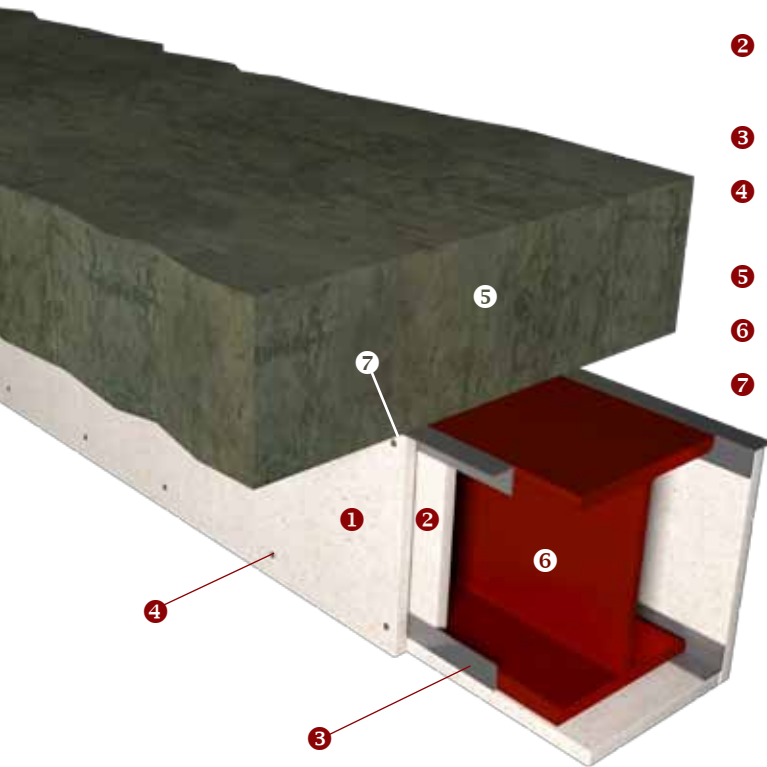
#### *Insulation*

*The ability of a separating element to restrict the temperature rise on the exposed face to specified levels, i.e. a maximum permitted 140° rise as an average over the whole specimen and/or a 180° rise at any single point on the unexposed face of the construction.*



## STRUCTURAL STEEL BEAM AND COLUMN CLADDINGS

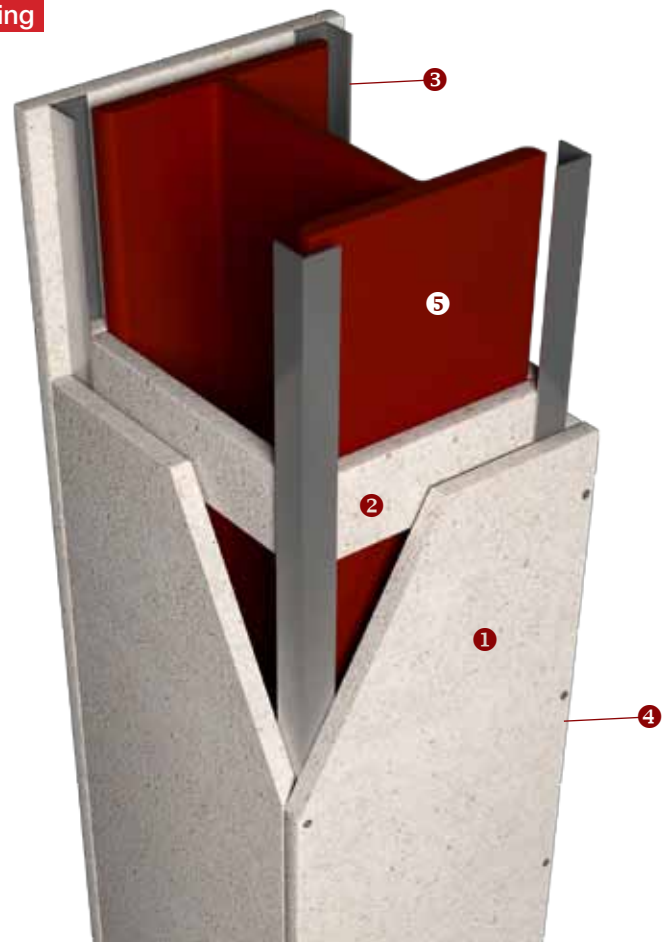
### 120 minute fire resistance structural steel beam cladding



- ① SUPALUX® board (please consult Intumex Asia Pacific for the relevant board thickness)
- ② SUPALUX® cover strips 75mm wide x the same thickness as ①
- ③ 25mm x 25mm x 0.65mm thick steel angle
- ④ No.6 drywall screws at nominal 240mm centres, length = 15mm + board thickness.
- ⑤ Floor slab
- ⑥ Steel beam
- ⑦ Intumex® AN Acrylic Sealant at all perimeter gaps between edges of the SUPALUX® board and the substrate

### 120 minute fire resistance structural steel column cladding

- ① SUPALUX® board (please consult Intumex Asia Pacific for the relevant board thickness)
- ② SUPALUX® cover strips 75mm wide x the same thickness as ①
- ③ 25mm x 25mm x 0.65mm thick steel angle
- ④ No.6 drywall screws at nominal 240mm centres, length = 15mm + board thickness.
- ⑤ Steel column





## STEEL STUD PARTITIONS

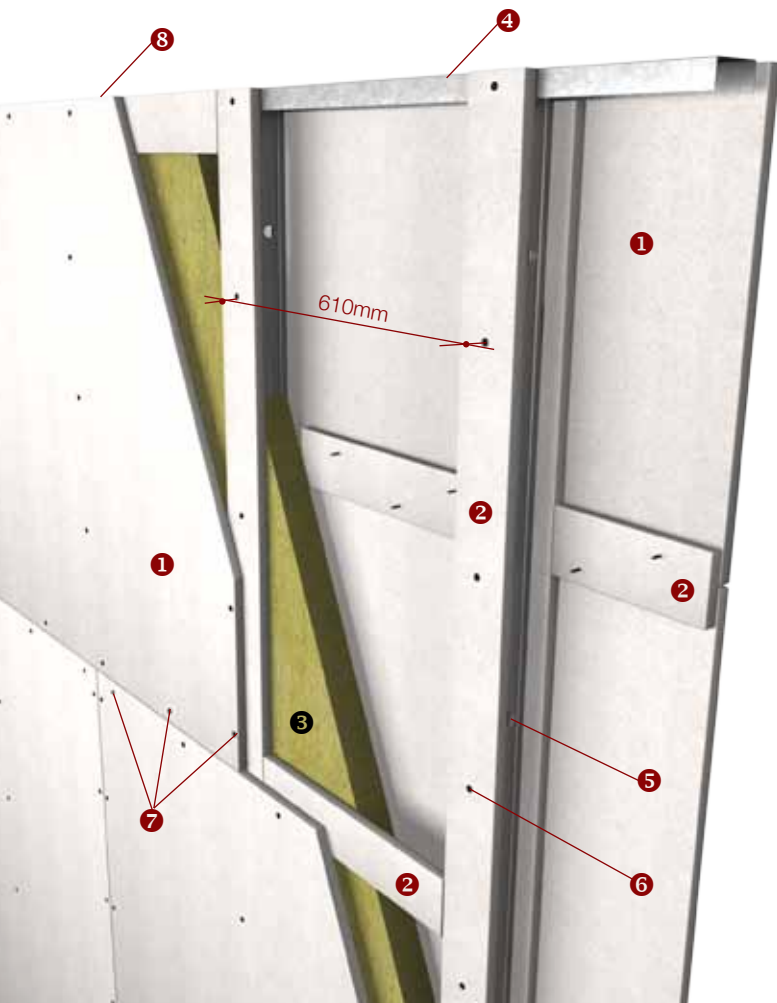
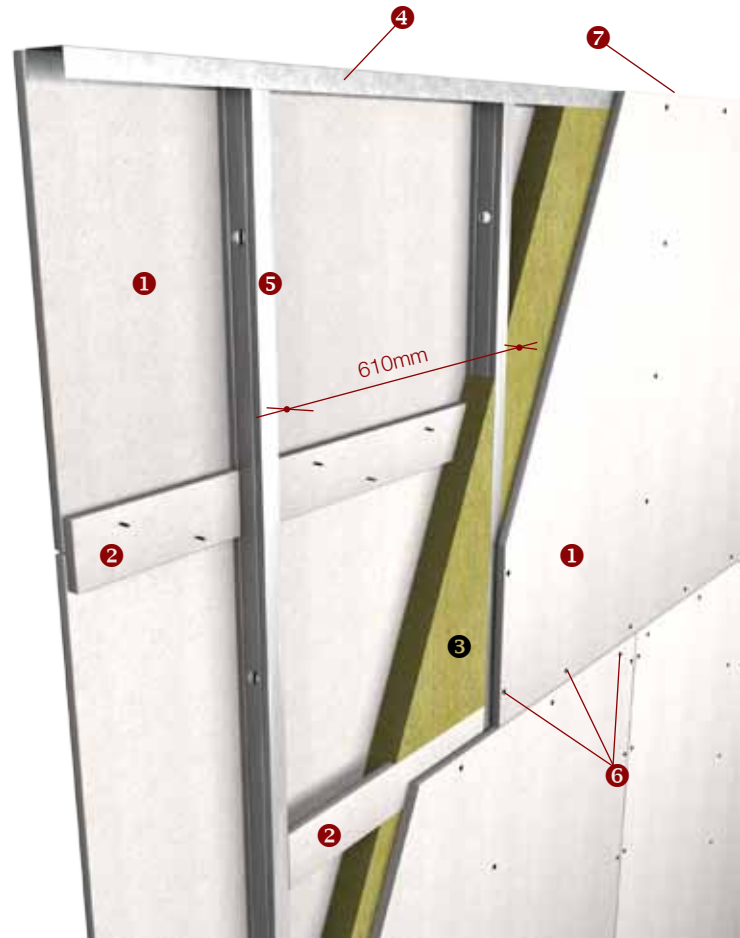
### 60 minute fire resistant steel stud partition

- ❶ 9mm thick SUPALUX® board
- ❷ SUPALUX® cover strips 100mm wide x 9mm thick
- ❸ Mineral wool 75mm x 38kg/m<sup>3</sup>
- ❹ Partition tracks, top and bottom 75mm x 40mm x 0.6mm thick\*
- ❺ Vertical steel studs 75mm x 40mm x 0.6mm thick\* at nominal 610mm centres
- ❻ 32mm long x No.8 drywall screws at nominal 300mm centres
- ❼ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate

Overall thickness: 93mm

STC reading: 42dB

\*Based on 4000mm height (please consult Intumex Asia Pacific for heights above 4000mm)



### 120 minute fire resistant steel stud partition

- ❶ 9mm thick SUPALUX® board
- ❷ SUPALUX® cover strips 100mm wide x 9mm thick
- ❸ Mineral wool 75mm x 100kg/m<sup>3</sup>
- ❹ Partition tracks, top and bottom 75mm x 30mm x 0.5mm thick\*
- ❺ Vertical steel studs 75mm x 35mm x 0.5mm thick\* at nominal 610mm centres
- ❻ 25mm long x No.8 drywall screws at 600mm centres
- ❼ 32mm long x No.8 drywall screws at nominal 300mm centres
- ❽ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate

Overall thickness: 111mm

STC reading: 42dB

\*Based on 4000mm of height (please consult Intumex Asia Pacific for heights above 4000mm)



## SUPALUX® - Partitions

### STEEL STUD PARTITION

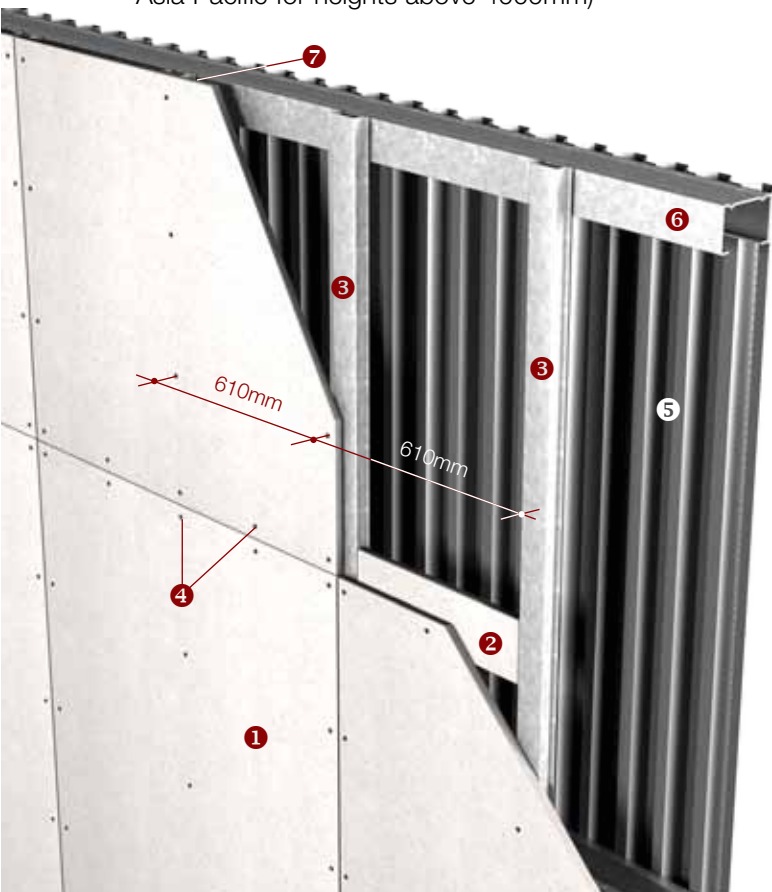
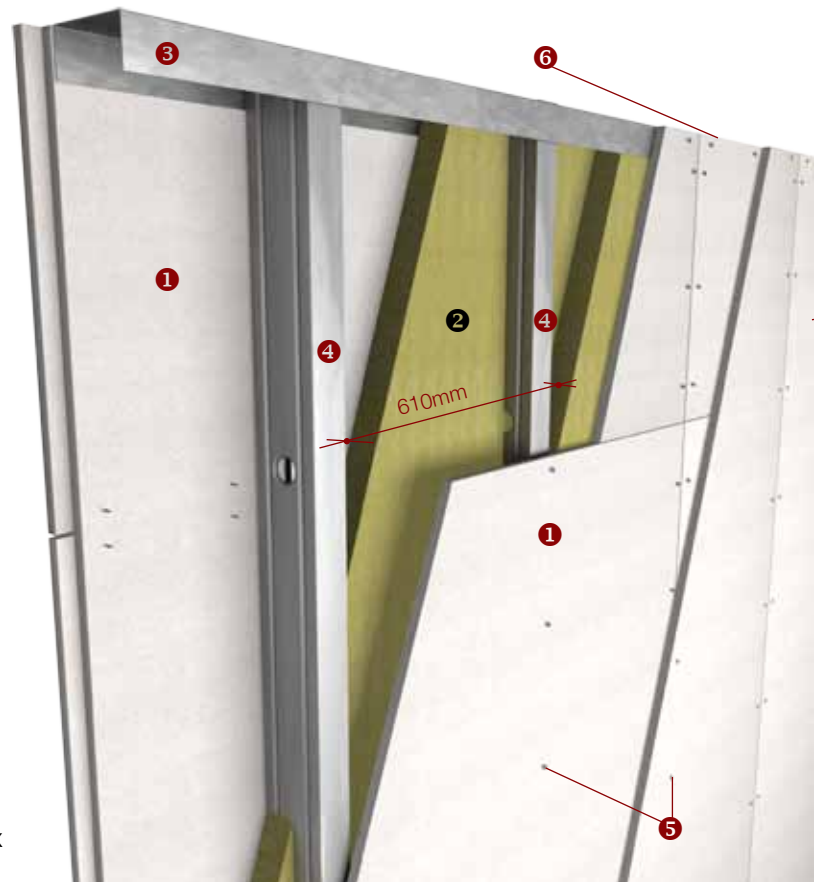
#### 240 minute fire resistant steel stud partition

- ① Two layers of 9mm thick SUPALUX® board with all vertical and horizontal joints staggered minimum 305mm
- ② Two layers of 50mm x 100kg/m<sup>3</sup> mineral wool all vertical and horizontal joints staggered by 300mm, between layers
- ③ Partition track, top and bottom. 127mm x 50mm x 0.8mm thick\*
- ④ Vertical steel studs 125mm x 50mm x 0.8mm thick\* at nominal 610mm centres
- ⑤ Fix first layer using 25mm screws, fix second layer using 32mm long x No.8 drywall screws at nominal 200mm centres
- ⑥ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate

Overall thickness: 161mm

STC reading: 56dB

\*Based on 4000mm of height (please consult Intumex Asia Pacific for heights above 4000mm)



### EXTERNAL WALL LININGS

#### 240 minute fire resistant external wall

- ① 9mm thick SUPALUX® board
- ② SUPALUX® cover strips 75mm wide x 9mm thick
- ③ Steel top hat sections 25mm x 50mm x 25mm x 0.4mm thick nominal at 610mm centres
- ④ 25mm long x No.8 drywall screws at nominal 300mm centres
- ⑤ Steel profile cladding (by others)
- ⑥ Horizontal sheeting rails supports (by others), minimum 125mm deep at maximum 1800mm centres (based on 3600mm long top hat sections, shorter sections require closer centres)
- ⑦ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate

Overall thickness: 159mm

STC reading: 35dB

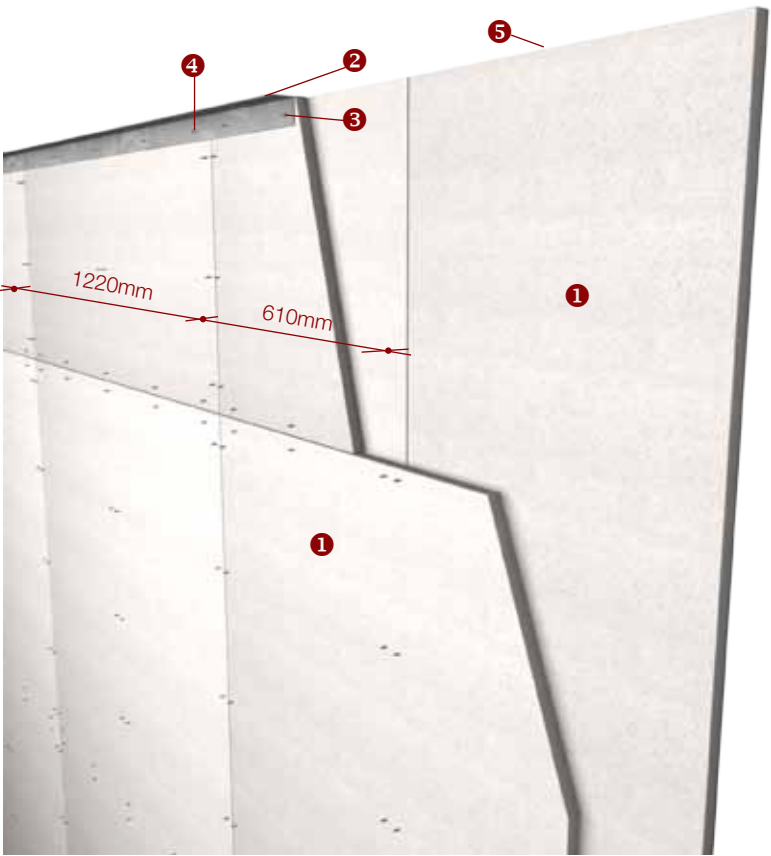
Insulation: 15 minutes



# SUPALUX® - Partitions

## SOLID PARTITIONS

### 60 minute fire resistant solid partition



- ① One layer of 15 mm SUPALUX® board fixed to a second layer of 20mm SUPALUX® board, all joints staggered at minimum 610mm horizontally and vertically.
- ② 40mm x 20mm x 0.7mm thick perimeter steel angle\* at perimeter
- ③ M6 anchor bolts at nominal 500mm centres
- ④ 25mm long x No.8 drywall screws at 300mm centres for first layer, 45mm long No.8 drywall screws at 300mm centres for second layer, all fixings must be through the board into the perimeter angle
- ⑤ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate
- ⑥ Stitching screws at all board joints vertical and horizontal in both layers fixing first and second layer together minimum 45mm long.

Overall thickness: 35mm

STC reading: 35dB

\*Based on 4m of height (please consult Intumex Asia Pacific for height above 4m)

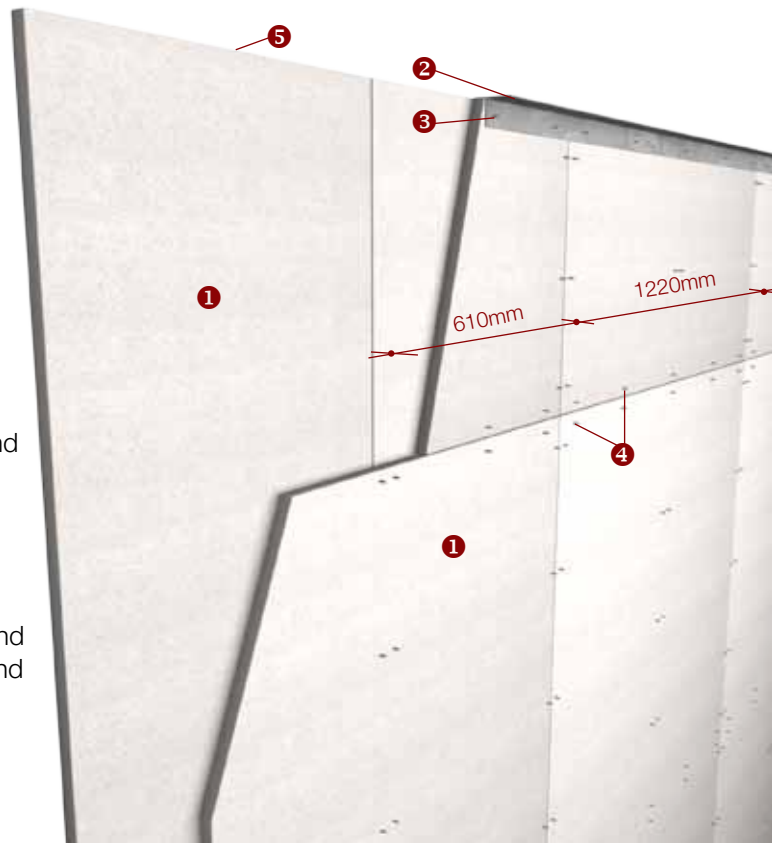
### 120 minute fire resistant solid partition

- ① One layer of 25mm SUPALUX® board fixed to a second layer of 25mm SUPALUX® board, staggered at minimum 610mm horizontally and vertically.
- ② 40mm x 20mm x 0.7mm thick steel angle\* at perimeter.
- ③ M6 anchor bolts at nominal 500mm centres
- ④ 40mm long No.8 drywall screws at 300mm centres for first layer, 63mm long x No.8 drywall screws at 300mm centres for second layer into perimeter angle.
- ⑤ Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate
- ⑥ Stitching screws at all board joints vertical and horizontal in both layers fixing first and second layer together minimum 45mm long.

Overall thickness: 50mm

STC reading: 36dB

\*Based on 4m of height (please consult Intumex Asia Pacific for height above 4m)



Screw fixings to perimeter steel angles should be 20mm from the board edge. Fixings to the boards should be 50mm and 100mm from the board edge at the corners.

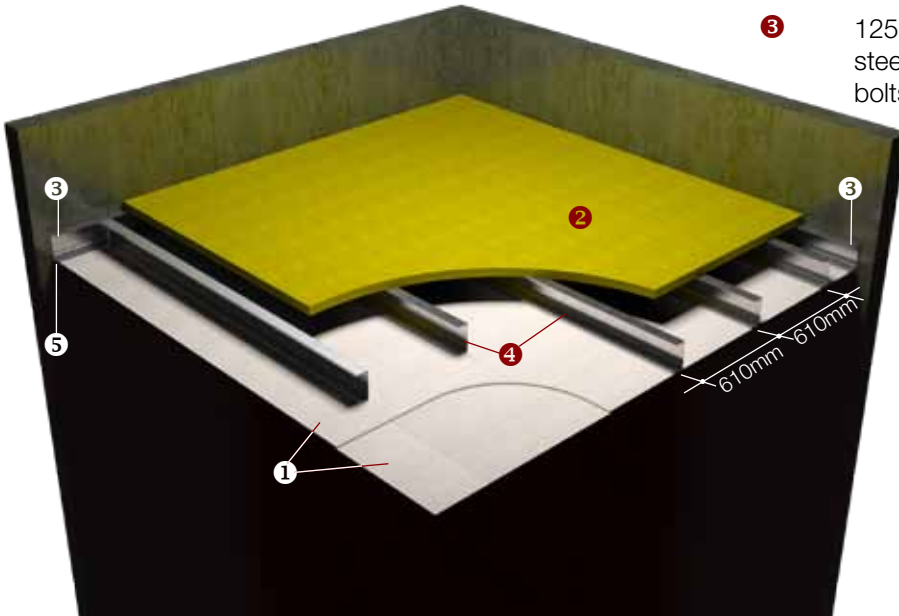


## SUPALUX® - Ceilings & Floors

### CEILING MEMBRANES

#### 60 minute, fire resistant ceiling membrane fire from below

- 1 Two layers of 9mm thick SUPALUX® board with staggered joints
- 2 One layer of 50mm x 100kg/m<sup>3</sup> mineral wool
- 3 125mm x 75mm x 0.6mm thick perimeter steel channels\* fixed to concrete with M6 anchor bolts at nominal 500mm centres



- 4 125mm x 75mm x 1.6mm thick steel channels\* at nominal 610mm centres, SUPALUX® boards fixed to channels with 45mm long x No.8 drywall screws at nominal 200mm centres
- 5 Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate.

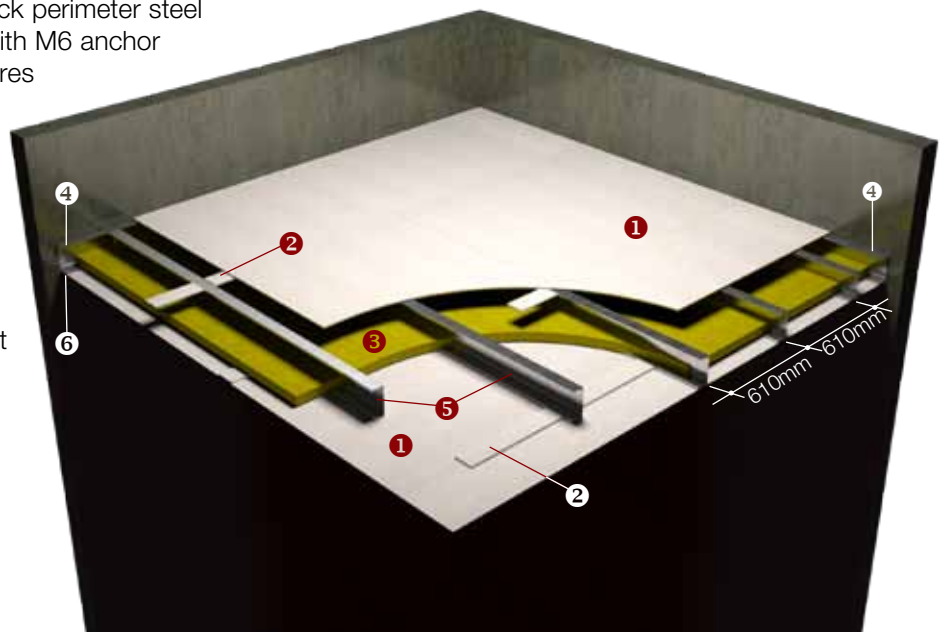
Overall thickness: 168mm

STC reading: 47dB

\*Based on 3.6m of ceiling span (please consult Intumex Asia Pacific for spans greater than 3.6m)

#### 60 minute, fire resistant ceiling membrane fire from above and below

- 1 One layer of 9mm thick SUPALUX® board
- 2 SUPALUX® cover strips 75mm wide x 9mm thick
- 3 One layer of 50mm x 100kg/m<sup>3</sup> mineral wool
- 4 125mm x 75mm x 0.6mm thick perimeter steel channels\* fixed to concrete with M6 anchor bolts at nominal 500mm centres
- 5 125mm x 75mm x 1.6mm thick steel channels\* at 610mm centres SUPALUX® boards fixed with 45mm long x No.8 drywall screws at nominal 200mm centres
- 6 Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate



Overall thickness: 168mm

STC reading: 47dB

\*Based on 3.6m of ceiling span (please consult Intumex Asia Pacific for span greater than 3.6m)



## SUPALUX® - Ceilings & Floors

### CEILING MEMBRANES

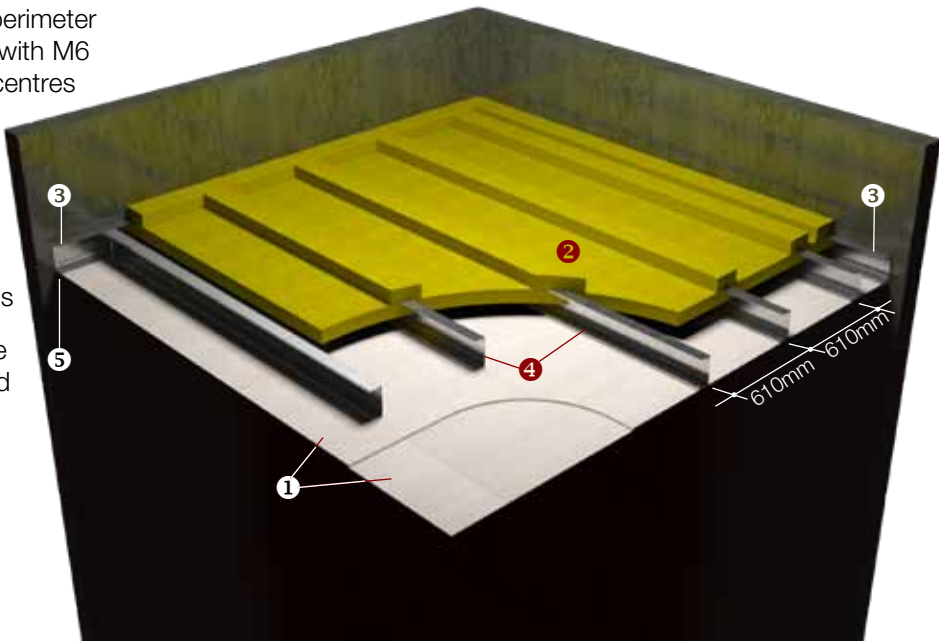
#### 120 minute, fire resistant ceiling membrane fire from below

- 1 Two layers of 9mm thick SUPALUX® board with staggered joints
- 2 One layer of 75mm x 100kg/m<sup>3</sup> mineral wool
- 3 125mm x 75mm x 0.6mm thick perimeter steel channels\* fixed to concrete with M6 anchor bolts at nominal 500mm centres
- 4 125mm x 75mm x 1.6mm thick steel channels\* at nominal 610mm centres, SUPALUX® boards fixed to channels with 45mm long x No.8 drywall screws at nominal 200mm centres
- 5 Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate

Overall thickness: 186mm

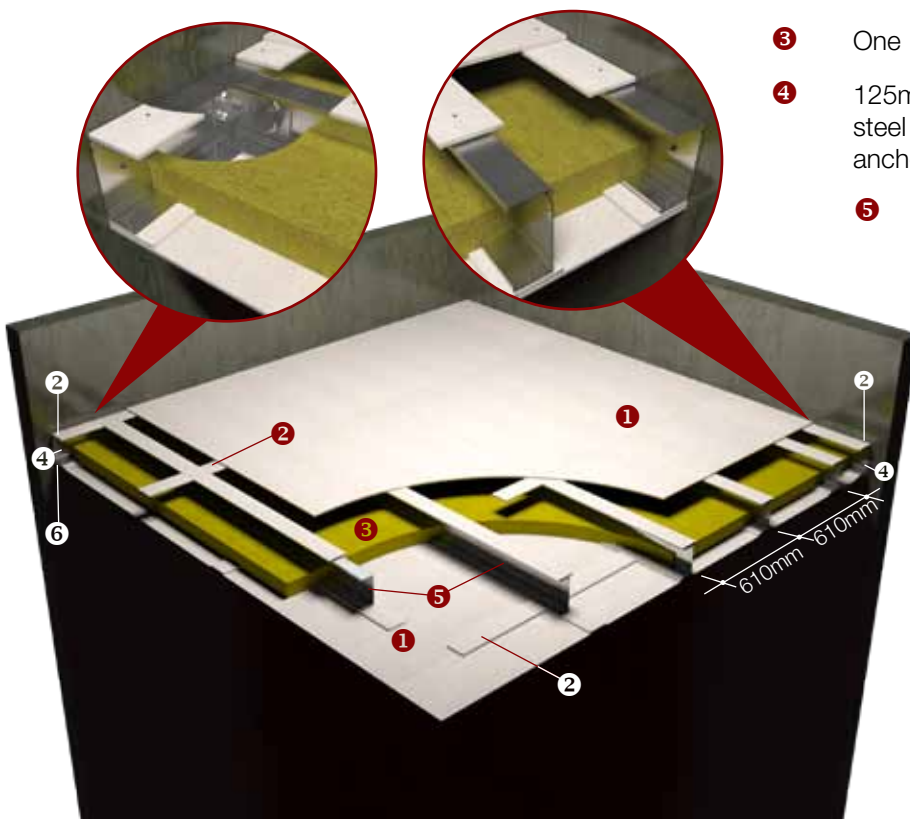
STC reading: 48dB

\*Based on 3.6m of ceiling span  
(please consult Intumex Asia Pacific for span greater than 3.6m)



#### 120 minute, fire resistant ceiling membrane fire from above and below

- 1 One layer of 9mm thick SUPALUX® board
- 2 75mm wide x 9mm thick SUPALUX® cover strips
- 3 One layer of 75mm x 100kg/m<sup>3</sup> mineral wool
- 4 125mm x 75mm x 0.6mm thick perimeter steel channels\* fixed to concrete with M6 anchor bolts at nominal 500mm centres
- 5 1125mm x 75mm x 1.6mm thick steel channels\* at nominal 610mm centres, SUPALUX® boards fixed to channels with 45mm long x No.8 drywall screws at nominal 200mm centres
- 6 Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate



Overall thickness: 186mm

STC reading: 48dB

\*Based on 3.6m of ceiling span  
(please consult Intumex Asia Pacific for span greater than 3.6m)

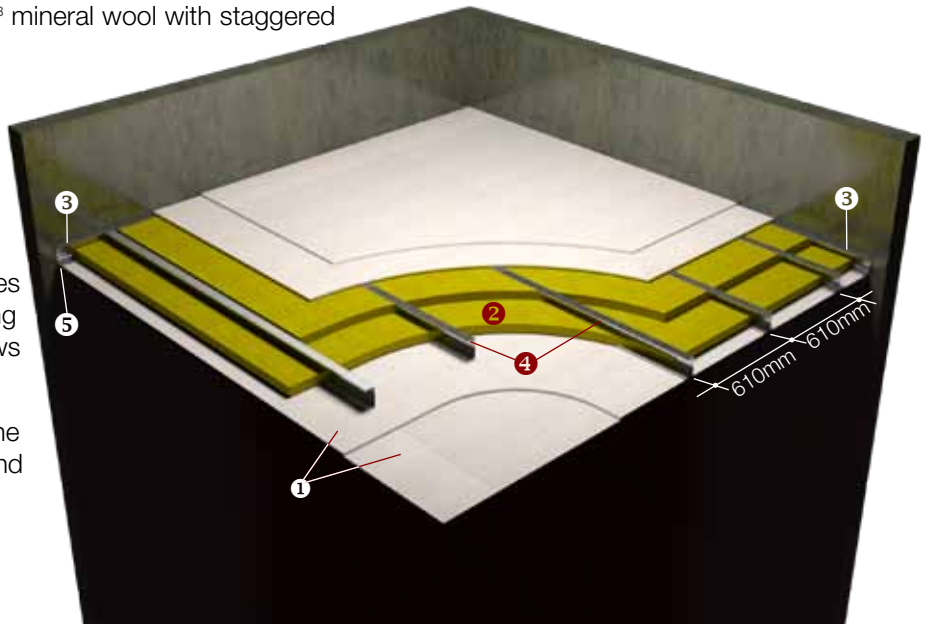


## SUPALUX® - Ceilings & Floors

### CEILING MEMBRANE

**240 minute, fire resistant ceiling membrane fire from above and below.**

- 1 Two layers of 9mm thick SUPALUX® board with staggered joints minimum 610mm
- 2 Two layers of 50mm x 100kg/m<sup>3</sup> mineral wool with staggered joints minimum 300mm
- 3 101mm x 51mm x 1.6mm thick perimeter steel channels\* fixed to concrete with M6 anchor bolts at 500mm centres
- 4 101mm x 51mm x 1.6mm thick steel channels\* at 610mm centres with SUPALUX® board fixed using 45mm long x No.8 drywall screws at nominal 200mm centres
- 5 Intumex® AN Acrylic Sealant at the perimeter between the boards and the substrate



Overall thickness: 149mm

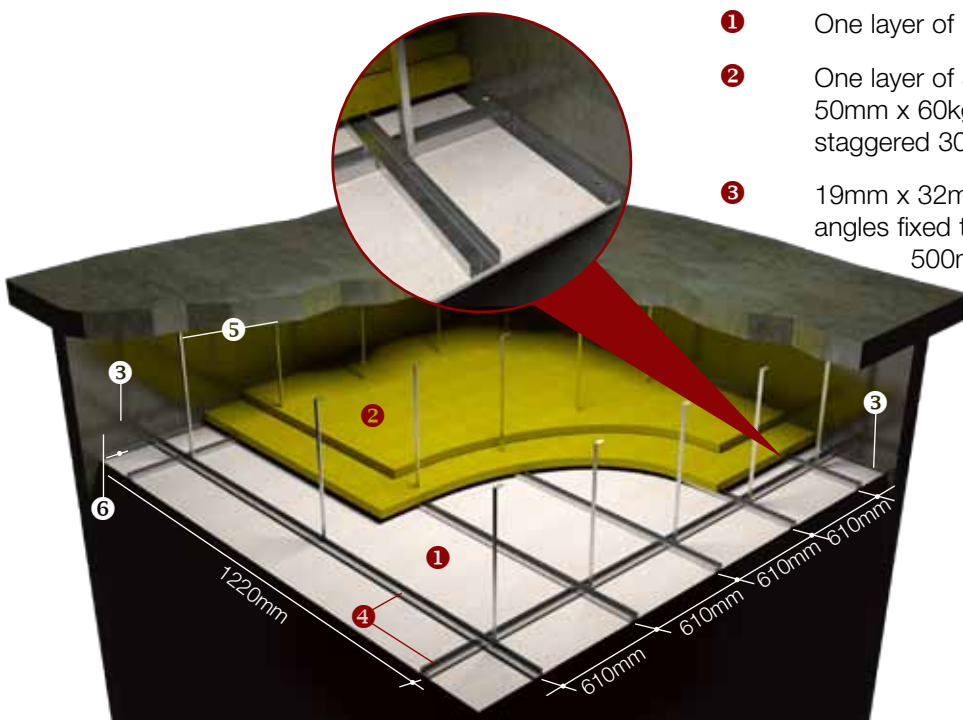
STC reading: 56dB

\*Based on 3.6m of ceiling span  
(please consult Intumex Asia Pacific for span greater than 3.6m)

### SUSPENDED CEILINGS

**60 minute, fire resistant suspended ceiling fire from below**

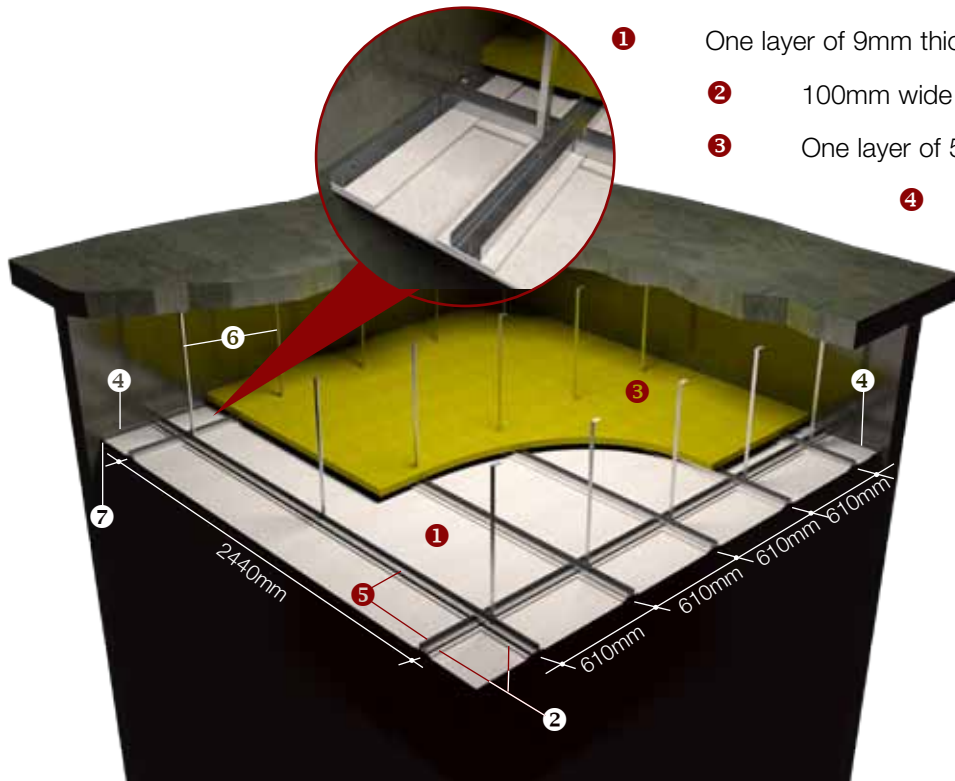
- 1 One layer of 12mm thick SUPALUX® board
- 2 One layer of 50mm x 120kg/m<sup>3</sup> or two layers of 50mm x 60kg/m<sup>3</sup> mineral wool with joints staggered 300mm.
- 3 19mm x 32mm x 0.5mm thick perimeter steel angles fixed to concrete with M5 anchor bolts at 500mm centres
- 4 50mm x 27mm x 0.6mm thick steel channels fixed at 1220mm centres and 610mm centres, SUPALUX® board fixed using 35mm long x No.8 drywall screws at nominal 300mm centres.
- 5 25mm x 25mm x 0.8mm thick steel angles
- 6 Intumex® AN Acrylic Sealant at all perimeter



Overall thickness: 62mm

## SUSPENDED CEILINGS

### 120 minute, fire resistant suspended ceiling – BS 476: Part 23 fire from below

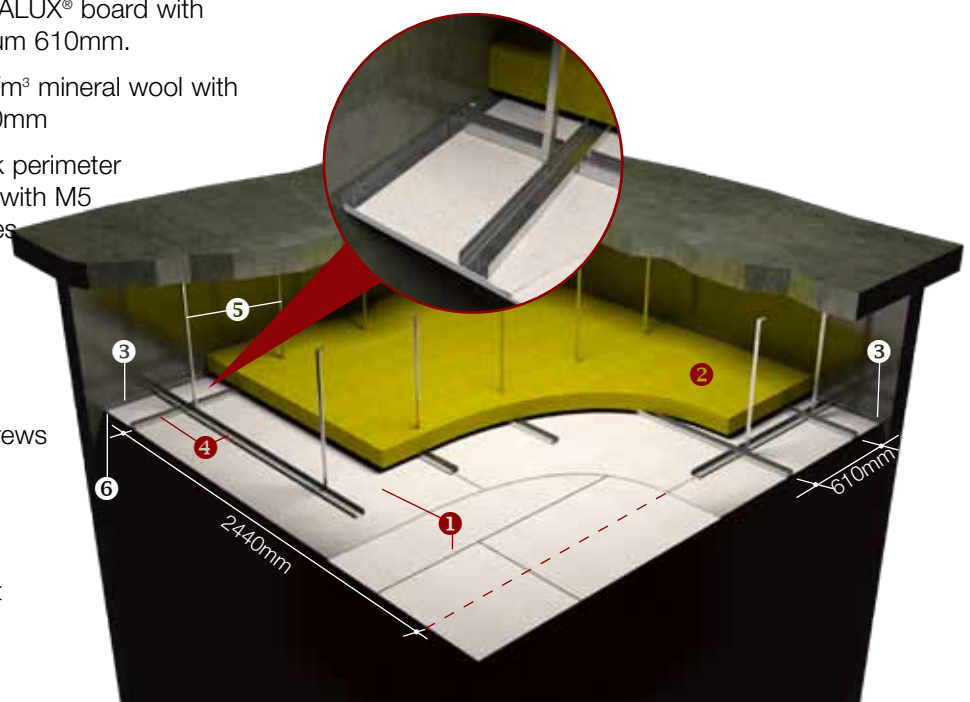


- 1 One layer of 9mm thick SUPALUX® board
- 2 100mm wide x 9mm thick SUPALUX® cover strips
- 3 One layer of 50mm x 60kg/m<sup>3</sup> mineral wool
- 4 19mm x 32mm x 0.5mm thick perimeter steel angles fixed to concrete with M5 anchor bolts at 500mm centres
- 5 50mm x 27mm x 0.6mm thick steel channels fixed at 1220mm centres and 610mm centres, SUPALUX® board fixed using using 35mm long x No.8 drywall screws at nominal 300mm centres.
- 6 25mm x 25mm x 0.8mm thick steel angles
- 7 Intumex® AN Acrylic Sealant at perimeter between the boards and the substrate

Overall thickness: 58mm

### 120 minute, fire resistant suspended ceiling – BS 476: Part 22 fire from below

- 1 Two layers of 9mm thick SUPALUX® board with board joints staggered minimum 610mm.
- 2 Two layers of 50mm x 100kg/m<sup>3</sup> mineral wool with joints staggered minimum 300mm
- 3 19mm x 32mm x 0.5mm thick perimeter steel angles fixed to concrete with M5 anchor bolts at 500mm centres
- 4 50mm x 27mm x 0.6mm thick steel channels fixed 1220mm centres and 610mm centres, SUPALUX® board fixed using using 35mm long x No.8 drywall screws at nominal 300mm centres.
- 5 25mm x 25mm x 0.8mm thick steel angles
- 6 Intumex® AN Acrylic Sealant at perimeter between the boards and the substrate



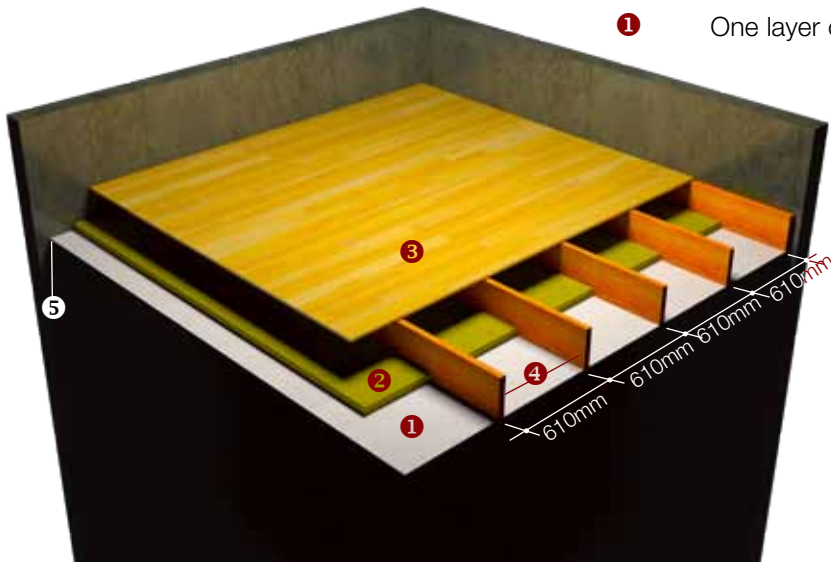
Overall thickness: 118mm



## SUPALUX® - Ceilings & Floors

### LOADBEARING TIMBER FLOORS

#### 60 minute, timber joist floor fire from below

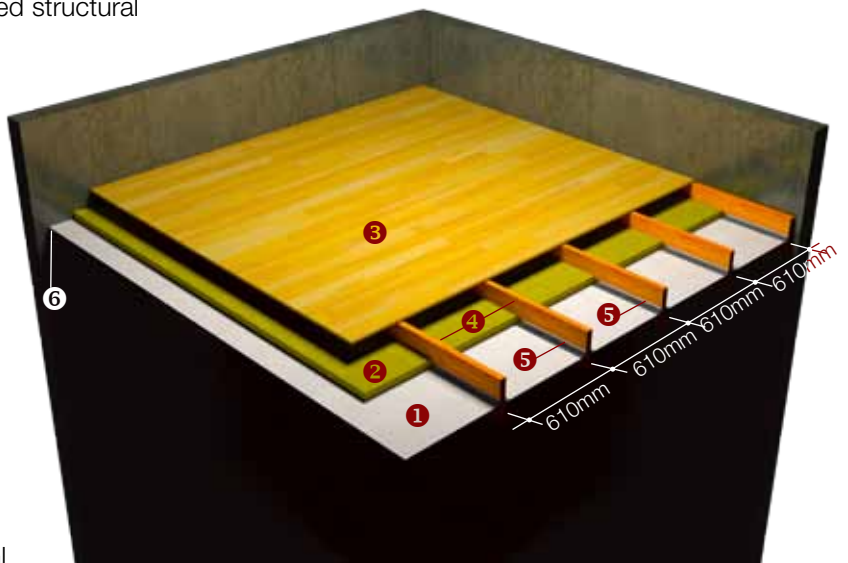


- ① One layer of 9mm thick SUPALUX® board
- ② One layer of 40mm x 60kg/m<sup>3</sup> mineral wool
- ③ Minimum 16mm thick tongue and grooved structural grade floor boards
- ④ minimum 225mm x 38mm timber joists fixed at maximum 610mm centres, SUPALUX® board fixed with minimum 75mm long steel wire nails at nominal 200mm centres
- ⑤ Intumex® AN Acrylic Sealant at perimeter between the boards and the substrate

Overall thickness: 274mm  
STC reading: 42dB

#### 60 minute, fire resistant exposed exposed timber joist floor fire from below

- ① One layer of 9mm thick SUPALUX® board fixed to angles ⑤ using 32mm x No8 screws at nominal 300mm centres.
- ② One layer of 40mm x 60kg/m<sup>3</sup> mineral wool
- ③ Minimum 16mm thick tongue and grooved structural grade floor boards
- ④ Minimum 225mm x 38mm timber joists at maximum 610mm centres\*.
- ⑤ 30mm x 30mm x 1mm thick perimeter steel angles\* fixed to either face of timber joists with 35mm long x No.8 drywall screws at 300mm centres
- ⑥ Intumex® AN Acrylic Sealant at perimeter between the boards and the substrate



Overall thickness: 274mm  
STC reading: 42dB

\* Span centres depend upon residual timber and load bearing requirements. Consult structural engineer for minimum dimensions based upon charring rates of species of exposed timber.

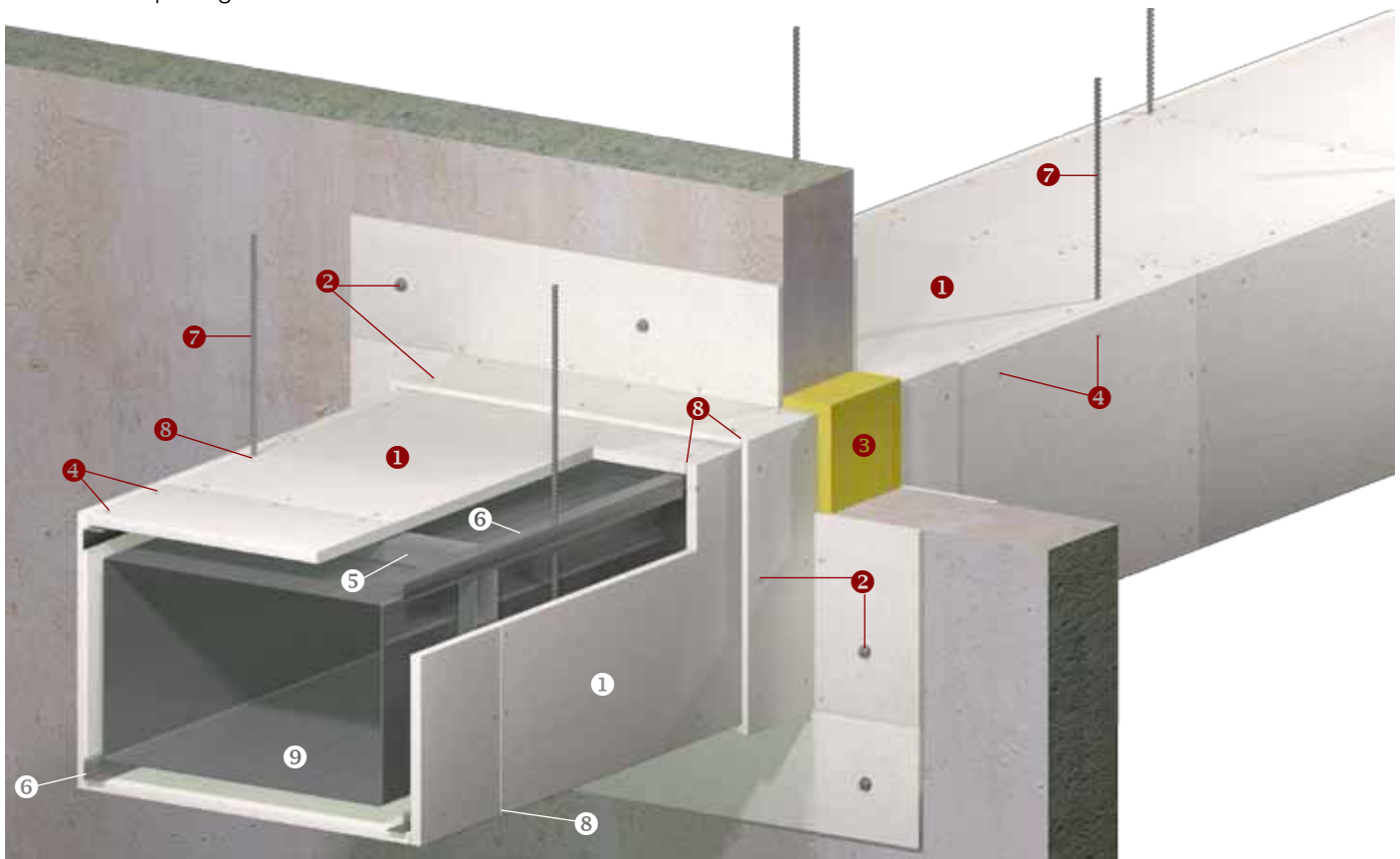


## SUPALUX® - Ductwork

### CLADDING TO STEEL DUCT – STABILITY & INTEGRITY ONLY

60-240 minute fire resistant of galvanised steel duct for external and internal fire exposure integrity only

- ① One layer of SUPALUX® board, thickness in accordance with the required fire resistance as follows:-  
60 minutes: 9mm thick  
120 minutes: 9mm thick  
240 minutes: 12mm thick
- ② SUPALUX® collar, One layer 150mm wide x same board thickness as main cladding. Fastened to the wall with M6 anchor bolts at 500mm centres and all gaps between board and substrate fully filled using Intumex® AN Acrylic Sealant. The section of collar to the duct should be fixed to the SUPALUX® cladding using 32mm long x No.8 drywall screws at nominal 200mm centres.
- ③ Minimum 100kg/m<sup>3</sup> of mineral wool tightly packed to fill gaps between duct and opening within substrate.
- ④ 35mm long x No.8 drywall screws at nominal 200mm centres
- ⑤ 50mm x 50mm x 0.6mm thick steel channel collar fixed at board joints to form grid 1220mm x 610mm maximum centres.
- ⑥ 50mm x 50mm x 0.6mm thick steel angles joining corners of collars ⑤
- ⑦ Galvanised steel hanger support system, stress level in accordance with the required fire resistance as follows:  
60 minutes: < 15N/mm<sup>2</sup>  
120 minutes: < 10N/mm<sup>2</sup>  
240 minutes: < 6N/mm<sup>2</sup>
- ⑧ Intumex® AN Acrylic Sealant at all board joints and hanger penetrations
- ⑨ Galvanised steel duct



Minimum size of steel duct sheet, stiffeners and angle are as specified in DW/144. Please consult Intumex Asia Pacific for details of the hanger support system (item ⑦).

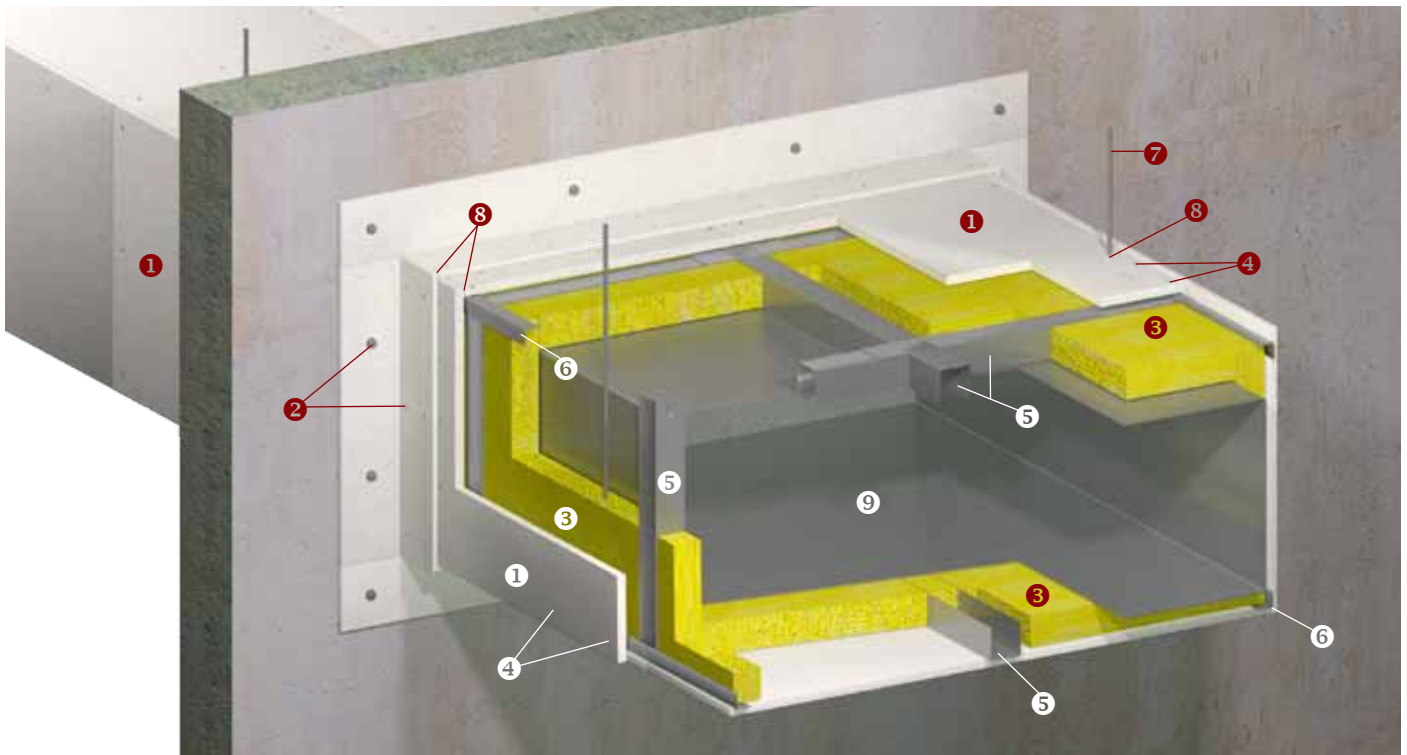


## SUPALUX® - Ductwork

### CLADDING TO STEEL DUCT – STABILITY, INTEGRITY & INSULATION

60-240 minute fire resistant galvanised steel duct for external and internal fire exposure integrity and insulation

- 1 One layer of SUPALUX® board, thickness in accordance with the required fire resistance as follows:-  
60 minutes: 12mm thick  
120 minutes: 15mm thick  
240 minutes: 25mm thick
- 2 SUPALUX® collar, One layer 150mm wide x same board thickness as main cladding. Fastened to the wall with M6 anchor bolts at 500mm centres and all gaps between board and substrate fully filled using Intumex® AN Acrylic Sealant. The section of collar to the duct should be fixed to the SUPALUX® cladding using 32mm long x No.8 drywall screws at nominal 200mm centres.
- 3 Mineral wool, thickness and density in accordance with the required fire resistance as follows:-  
60 minutes: Two layers of 25mm x 60kg/m<sup>3</sup>  
120 minutes: Two layers of 25mm x 100kg/m<sup>3</sup>  
240 minutes: Two layers of 50mm x 100kg/m<sup>3</sup>
- 4 35mm long x No.8 drywall screws at 200mm centres
- 5 50mm x 50mm x 0.6mm thick steel channel collar fixed at board joints to form grid 1220mm x 610mm maximum centres.
- 6 50mm x 50mm x 0.6mm thick steel angles joining corners of collars 5
- 7 Galvanised steel hanger support system, stress level in accordance with the required fire resistance as follows:  
60 minutes: < 15N/mm<sup>2</sup>  
120 minutes: < 10N/mm<sup>2</sup>  
240 minutes: < 6N/mm<sup>2</sup>
- 8 Intumex® AN Acrylic Sealant at all board joints and hanger penetrations
- 9 Galvanised steel duct



This cladding method is for a steel duct up to 6000mm x 1500mm. Minimum size of steel duct sheet, stiffeners and angle are as specified in DW/144. Please consult Intumex Asia Pacific for details of the hanger support system (item 7).

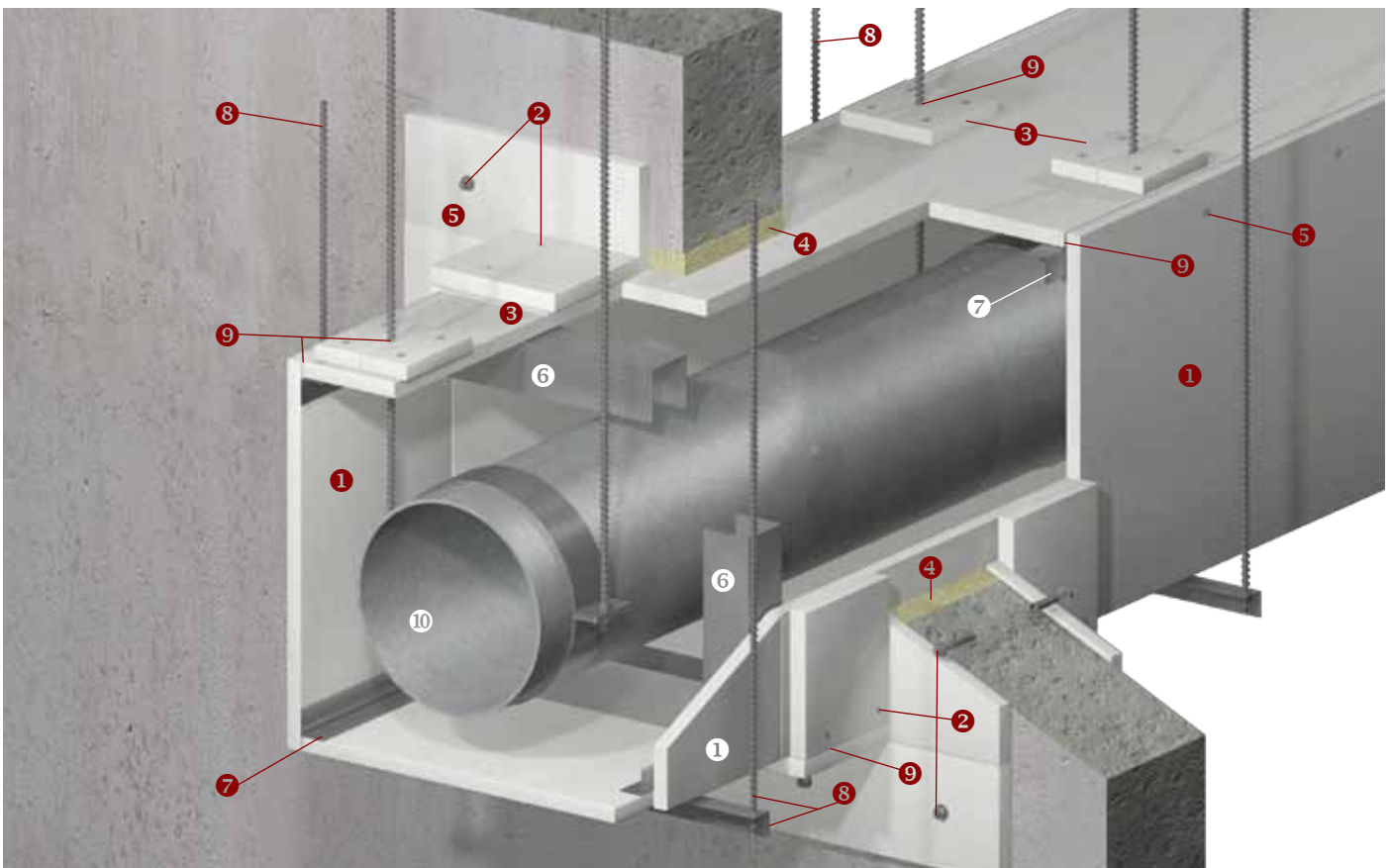


## SUPALUX® - Services Enclosure

### BUILDING SERVICES ENCLOSURE – INTEGRITY ONLY

120-240 minute fire resistant, general building services enclosure for external and internal fire exposure integrity only

- 1 One layer of SUPALUX® board, thickness in accordance with the required fire resistance as follows:-  
120 minutes: 9mm thick  
240 minutes: 12mm thick
- 2 SUPALUX® collar, One layer 150mm wide x same board thickness as main cladding. Fastened to the wall with M6 anchor bolts at 500mm centres and all gaps between board and substrate fully filled using Intumex® AN Acrylic Sealant. The section of collar to the duct should be fixed to the SUPALUX® cladding using 32mm long x No.8 drywall screws at nominal 200mm centres.
- 3 SUPALUX® cover strips minimum 75mm wide x main board thickness at all board to board joints.
- 4 Minimum 100kg/m<sup>3</sup> of mineral wool tightly packed to fill gaps between duct and opening within substrate.
- 5 35mm long x No.8 drywall screws at 200mm centres
- 6 50mm x 50mm x 0.9mm thick steel channel collar at board joints (maximum 1220mm centres).
- 7 50mm x 50mm x 0.9mm thick steel angles joining corners of collars 6
- 8 Galvanised steel hanger support system, stress level in accordance with the required fire resistance as follows:  
120 minutes: < 10N/mm<sup>2</sup>  
240 minutes: < 6N/mm<sup>2</sup>
- 9 Intumex® AN Acrylic Sealant at all board joints and hanger penetrations
- 10 General building services, e.g. pipes.



Please consult Intumex Asia Pacific for details of the hanger support system (item 8).

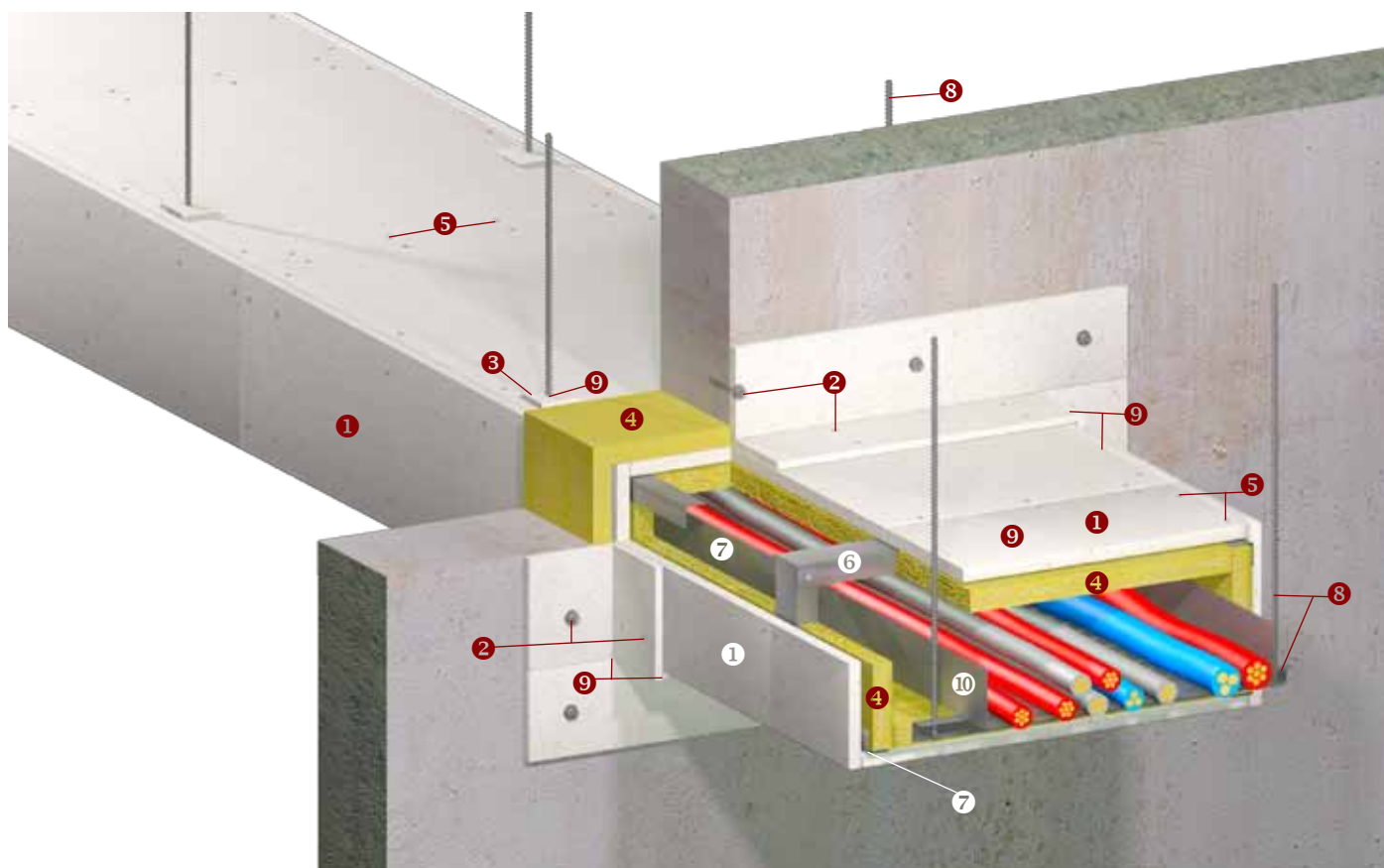


## SUPALUX® - Services Enclosure

### BUILDING SERVICES ENCLOSURE – INTEGRITY & INSULATION

240 minute fire resistant, general building services enclosure for external and internal fire exposure

- 1 One layer of 25mm thick SUPALUX® board
- 2 SUPALUX® collar, One layer 150mm wide x same board thickness as main cladding. Fastened to the wall with M6 anchor bolts at 500mm centres and all gaps between board and substrate fully filled using Intumex® AN Acrylic Sealant. The section of collar to the duct should be fixed to the SUPALUX® cladding using 32mm long x No.8 drywall screws at nominal 200mm centres.
- 3 SUPALUX® cover strips minimum 75mm wide x main board thickness at all board to board joints.
- 4 Two layers of 50mm x 100kg/m<sup>3</sup> mineral wool all joints staggered minimum 300mm.
- 5 45mm long x No.8 drywall screws at 200mm centres
- 6 50mm x 50mm x 0.9mm thick steel channel collar at board joints (maximum 1220mm centres). for ducts wider than 1220mm, collars should form grid 1220mm x 610mm maximum framing centres.
- 7 50mm x 50mm x 0.6mm thick steel angles joining corners of collars 6
- 8 Galvanised steel hanger support system with stress level < 6N/mm<sup>2</sup>
- 9 Intumex® AN Acrylic Sealant at all board joints and hanger penetrations
- 10 General building services, e.g. cable tray.



Applicable for services enclosure up to 3000mm x 1500mm. Please consult Intumex Asia Pacific for details of the hanger support system (item 8).

## THE COMMITMENT

Intumex Asia Pacific is committed to innovation and technical excellence, the synergistic forces that drive the company forward into the future.

Their unrivalled expertise in the manufacturing of matrix engineered mineral boards places Intumex at the forefront of building board technology. The company's reputation as an Asia Pacific market leader is now recognised in many countries worldwide.

Intumex Asia Pacific is equally concerned with quality in all of its operations: Quality of Materials, Quality of Production, Quality of Intumex People and just as significant, Quality of the Environment.

Intumex Asia Pacific has accumulated considerable experience in establishing and partnering universally recognised standards for the performance of building systems worldwide, working closely with British, Asia Pacific and other international bodies.

The result is a comprehensive range of fully tested, tried and proven products and systems that consistently demonstrate exceptional performance characteristics for fire protection, moisture resistance, hygiene, impact resistance and acoustics.

Intumex Asia Pacific professional products and systems are ideal for use in many applications and these include ceilings, partitioning, wall linings, roofing, flooring, structural steel protection, ducting and external wall claddings.

A wide choice of literature — printed on recycled paper made from sustainable forests — outlining the use of Intumex products and systems in various applications is available upon request from all Intumex Asia Pacific offices.

## Where

## Fire

## Stops



### Intumex Asia Pacific

#### MALAYSIA

Unit 19-02-01, Level 2  
PNB Damansara  
No.19 Lorong Dungun  
Damansara Heights,  
50490 Kuala Lumpur.  
Tel: +60 (3) 2095 5111  
Fax: +60 (3) 2095 6111

#### AUSTRALIA

1 Scotland Road  
Mile End South, SA 5031.  
Tel: +61 (8) 8352 6759.  
Fax: +61 (8) 8352 1014

#### HONG KONG

Room 1011, C.C. Wu Building  
302-308 Hennessy Road  
Wanchai.  
Tel: +852 2895 0265  
Fax: +852 2576 0216

#### SINGAPORE

10 Science Park Road,  
#03-14 The Alpha  
Singapore Science Park II  
Singapore 117684.  
Tel: +65 6292 7888  
Fax: +65 6294 2576

[www.intumex-ap.com](http://www.intumex-ap.com)

an **Etex** GROUP company

This document is produced on the basis of information and experience available at the time of preparation. Intumex Asia Pacific is constantly reviewing and updating all of its test data and reserves the right to change products and specifications without notice. Intumex Asia Pacific is not responsible if recipients of fire test reports, assessments or literature incorrectly interpret said contents and use products based on those interpretations.

© Intumex Asia Pacific. April 2011.

This publication is printed on paper made from sustainable forests.



You local supplier