

ORBIT FR

The Next Generation
in Fire Protection



High Impact Resistance

Fire Resistance

Moisture Resistance

Fire Containment has introduced the most versatile and affordable fire resistant board ever designed to the Australian building industry.

ORBIT FR has high impact resistance and is suitable for both internal and external use making it ideal for a range of applications including external walls, eave linings, internal wall linings suspended ceilings and more.

The superior fire performance of ORBIT FR means that it is also ideal for upgrades to existing walls and ceilings in addition to new build construction.

Fire Containment supports the sales of all of its products and systems with unrivalled technical support and expertise.

Please do not hesitate to contact our technical department on 02 9748 4384 to discuss your project needs.



ORBIT FR

Section 1:	General Information	4
	High impact resistance	4
	Fire performance	4
	Moisture resistance	4
	Early installation	4
	Strength to weight ratio	4
	Thermal insulation	4
	Versatility	4
	Handling and storage	5
	Repair and maintenance	5
	Joint details (internal & external)	5
	Decorative finishes	5
	Health & Safety	5
	Working with ORBIT FR	6
	ORBIT FR Properties	7
	Acoustic performance	8
Section 2:	System data	9
	Upgrade systems	
	Walls	
	Shafts & Vertical Risers	
	Ceilings	
	Other systems (coming soon)	

GENERAL

The Building Code of Australia requires fire resistant building elements to be fire tested in accordance with AS1530.4.

Each fire protection application requires a specific fire test or approval (assessment) from a testing Laboratory that shows that the system is suitable for the intended use.

Each of the technical data sheets in Section 2 of this manual are designed to provide a summary of the information needed for each specific system and references the relevant fire test report and assessment numbers. A full copy of the reports is available on request.

In addition to the data provided on the system technical data sheets the following information is provided regarding handling and storage, cutting, safety etc.



HIGH IMPACT RESISTANCE

ORBIT FR has superior impact resistance making it ideal for use in areas such as factories, hospitals and aged care facilities.

FIRE PERFORMANCE

ORBIT FR is non-combustible and will not spall when exposed to rapid temperature rises. Systems have been fire tested in accordance with AS1530.4, BS476.20 & 22 and other International Standards.

MOISTURE RESISTANCE

Moisture resistance is inherent in the material and not dependant on protective coatings. ORBIT FR boards retain its dimensional stability even in damp and humid conditions.

If the board is totally saturated it will regain full strength once dry. The boards are also resistant to attack by rodents, insects, mould growth and they will not rot.

EARLY INSTALLATION

Because of their excellent moisture resistance ORBIT FR boards can be installed at an early stage in the construction program, before wet trades have been completed and the building is weather tight.

This unique feature also means that the boards may be used for temporary fire protection on construction sites during construction work.

STRENGTH TO WEIGHT RATIO

ORBIT FR has an excellent strength to weight ratio compared to other fibre reinforced cement based boards. The combined strength of the systems mean that thickness as low as 6 mm can be used allowing improved weight and space savings.

THERMAL INSULATION

ORBIT FR can be used at continuous temperatures of 250 °C and may be used, for example, to line walls adjacent to internal combustion heaters and their chimneys and enclose boilers and heating pipes.

VERSITILITY

The boards are affordable for use in both fire protection and multipurpose applications. One board can be used for many applications simplifying ordering and stock management.



HANDLING AND STORAGE

Store ORBIT FR inside and keep dry when storing for a long period of time. Stack flat on a level platform or support timbers spaced at 600 mm centres and extending the full width of the sheet.

If stored outside stack as for internal storage off the ground and protect from the weather.

REPAIR AND MAINTENANCE

ORBIT FR does not require planned maintenance. Visual inspection is recommended and may be required under Essential Services Regulations on an annual basis as with all fire protection systems.

Damaged boards should be repaired rather than replaced to ensure fire performance is maintained.

JOINT DETAILS (INTERNAL)

ORBIT FR can achieve a seamless joint finish with the use of standard gypsum based dry wall joint fillers. It is recommended to use a glass fibre open weave tape with the filler, to eliminate air being trapped below the surface.

Intumescent acrylic mastic may also be used for joint filling (for internal use only).

JOINT DETAILS (EXTERNAL)

Treat joints as for internal use, but be sure to use a joint filler that is suitable for exterior environments. Always follow the manufacturers recommendations.



DECORATIVE FINISHES

One surface of ORBIT FR is smooth and primed ready for painting. It may be painted with proprietary water based paints.

ORBIT FR requires no special preparation or sealer coats. Observe good trade practice. Where solvent based or external coatings are required it is advisable to check with the paint manufacturer for compatibility with the slightly alkaline surface of the board. pH 9.5-10

If ORBIT FR is not going to be fixed back to a substrate mechanically, (screws or nails) then it is advisable to provide a balancing coat of paint to the reverse face of the board.

The board may also be tiled or receive wall coverings or fabrics. It is also an ideal substrate for decorative laminates or veneers. It is advisable to check with the manufacturers of tile cements and adhesives, for compatibility with boards like ORBIT FR

HEALTH AND SAFETY

Boards are non-load bearing. They will however, support their own weight. Horizontal ceiling boards are not designed to take additional loads between supports and must not be walked on. If there is a risk of this occurring warning notices shall be displayed by the trades installing the board. Trades must ensure they work from appropriate safe platforms where necessary.

WARNING: Refer to the ORBIT FR Material Safety Data Sheet prior to cutting. A copy is available by contacting Fire Containment on (02) 9748 4384 . **DO NOT BREATHE DUST AND CUT IN WELL VENTILATED AREA ONLY.**

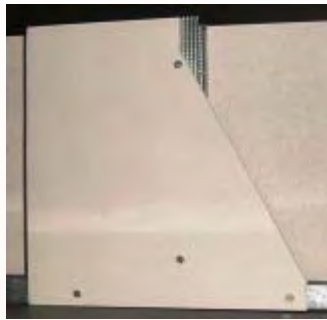


WORKING WITH ORBIT FR

Fixing to steel studs or steel ceiling framework

Screw Fixing: We recommend the use of standard galvanized, sheradised or stainless steel self drilling and self countersinking drywall screws. The length of screw should be 2.5 to 3 times the thickness of board being fixed.

Screw fixings should be started 12 to 15mm from the board edges. All board edges should coincide with support framework, and where applicable fillet strips. Screw fixings to be at nominal 200mm centre to centre.



Fixing to Timber or other Substrates

Nailing or Stapling: In non-fire rated applications ORBIT FR may be nailed manually or by the use of power nailing or stapling guns. If power nailing is to be adopted, then the equipment should be tested on a piece of scrap material to achieve the required penetration. We recommend the use of galvanized, sheradised or stainless steel nails for external use. Nail length should be 3 to 3.5 times the thickness of board and not less than 2.2mm in thickness.

General

Joints and joint treatment: ORBIT FR may be butt jointed, allowance should be made for a 5mm movement joint at ten linear metre intervals.

Where a seamless finish is required, boards should be gapped at joints by 4mm. These joints can then be taped and filled as per standard dry wall procedure.

Where a seamless finish is required in an external situation, or in an extremely wet area, advice should be sought regarding suitable joint fillers.

Multi-seal intumescent acrylic mastic may also be used for jointing, giving 4 hours fire resistance.

Cutting: WARNING: Refer to the ORBIT FR Material Safety Data Sheet prior to cutting. A copy is available by contacting Fire Containment on (02) 9748 4384. DO NOT BREATHE DUST AND CUT IN WELL VENTILATED AREA ONLY.



ORBIT FR can be rough cut in any direction due to its ostensibly monolithic structure. Cuts should be made on the face side of the board using a sharp craft knife or glasscutter. It is then an easy operation to snap the board over a straight edge. For more precise cutting it is recommended to use a tungsten carbide tipped circular saw.



Sawing: ORBIT FR can be sawn using a handsaw, jigsaw or portable circular saw. For the sawing of large quantities of board, it is recommended to use a circular saw bench.



Drilling: For the best results, it is recommended to use high speed twist drills. Do not use hammer action when drilling ORBIT FR.



Planing and Sanding: ORBIT FR can be planed in any direction, as there is no grain to consider. ORBIT FR may also be sanded using an orbital sander or conventional papers on a sanding block.

ORBIT FR PROPERTIES

Board sizes	1220 x 2440 mm
Board thickness	4.5mm, 6mm, 9mm, 12mm, 16mm, 20mm
Average dry density	950 kg/m ³
Flexural strength	10.1 N/mm ²
Tensile strength	2.64 MPa
Compressive strength	
Impact strength Hard body impact test, Impact energy 10Nm	No visible damage
Moisture absorption	28.8%
Moisture content	7-8%
Test for asbestos content	0%
Thermal conductivity	0.137 W/mK
Surface alkalinity	pH 9.5 –10
Fire performance	AS1530.4 plus numerous other local and International approvals.
Non-combustibility	BS476.4
Fire propagation	BS476.6 [Fire propagation index 0]
Surface spread of flame	BS476.7 [Class 1]

Dimensional Tolerance

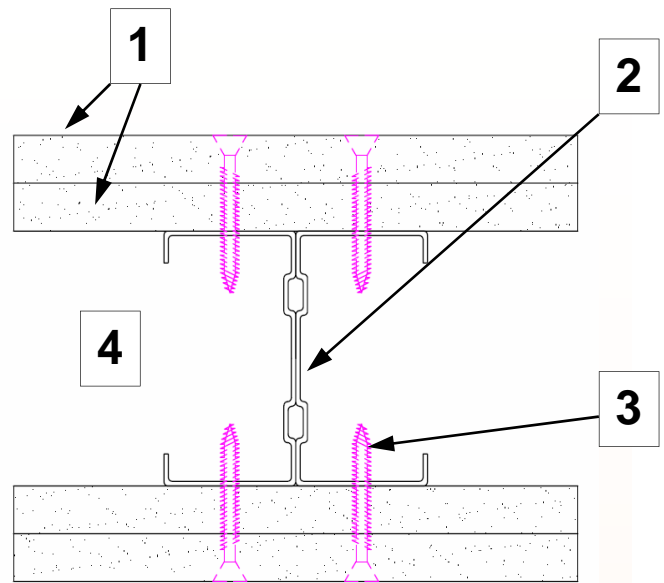
Thickness	-0.2 to +0.3 mm
Length	-2 to +3 mm
Width	-2 to +2 mm
Squareness	Less than 5 mm



ACOUSTIC PERFORMANCE

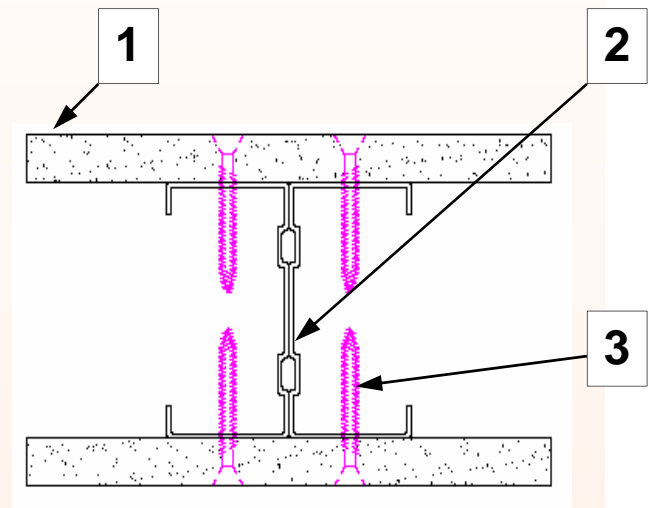
STC 56

Item	Description	Size
1	ORBIT FR	2 x 12 mm
2	Steel stud at 610 centres	2 no. 75 x 32 x 0.5 mm
3	M4 self tapping screws	200 mm centres
4	Mineral wool filler	75mm x 60 kg/m ³



STC 43

Item	Description	Size
1	ORBIT FR	1 x 12 mm
2	Steel stud at 610 centres	2 no. 75 x 32 x 0.5 mm
3	M4 self tapping screws	200 mm centres



Summary of Acoustic Performance of 12mm ORBIT FR in Steel Stud Partitions

No. of boards each side of stud	2	1	2	1	2	1	2	1
Width of steel stud (mm)	75	75	75	75	50	50	50	50
Mineral wool filler (kg)	60	60	nil	nil	60	60	nil	nil
STC	56	48	51	43	51	43	46	38

ORBIT FR SYSTEM DATA SHEETS

Upgrade systems

Walls

Existing adjoining walls (timber studs)	UW1
Existing adjoining walls (steel studs)	UW2

Shafts

Existing shaft walls (timber studs)	US1
Existing shaft walls (steel studs)	US2

Ceilings

Existing ceilings (timber studs)	UC1
Existing ceilings (steel studs)	UC2

Other systems (coming soon)

Masonry / Concrete walls
Timber floors
Concrete slabs
Roof space cavities

New build systems

Suspended ceiling systems

1 hour incipient ceilings (FRL -/60/60)	CS1
2 hours incipient ceilings (FRL -/120/90)	CS2
1 hour integrity only ceilings (FRL -/60/-)	CS3

Internal walls systems (coming soon)

Floor and ceiling systems (coming soon)

Roof and ceiling systems (coming soon)

Cavity Barriers (coming soon)

Roof space cavity barriers
FlameSeal flexible cavity barrier (-/120/-)
FlameSeal flexible cavity barrier (-/120/30)

External walls and linings (coming soon)

External walls close to boundaries

Non-combustible eave linings (coming soon)

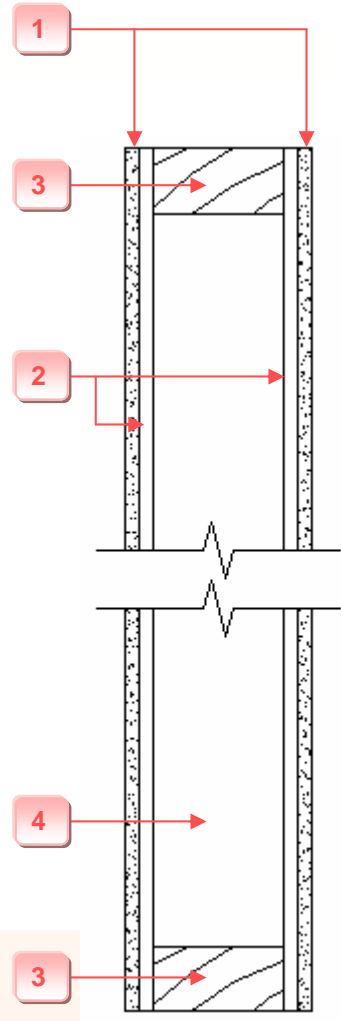
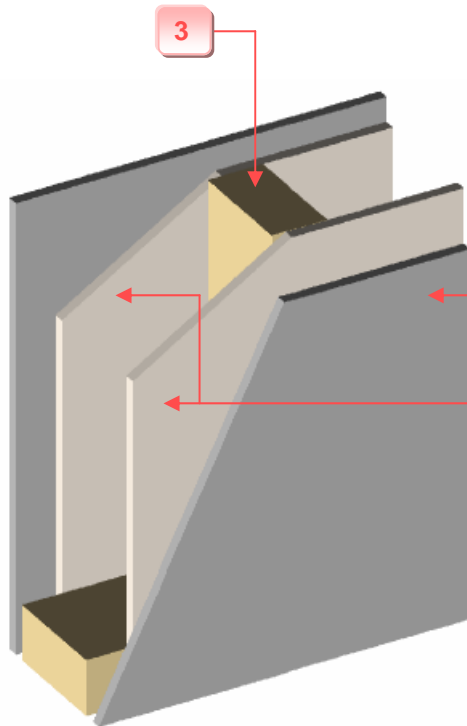
Thermal insulation systems (coming soon)

Existing Walls

Upgrading plaster on timber framing using 9mm Orbit FR (fixed to both sides)

FRL
90/90/90
Cavity Infill:
Rockwool

FRL
--/90/60
Cavity Infill:
Polyester
No Insulation



Key:

- 1 9mm Orbit FR board
- 2 Existing plaster based lining
- 3 Timber stud
- 4 Cavity insulation

Orbit FR	9mm thick to both sides
Stud work	90 x 45mm pine or any other timber species
Stud spacing	Nominal 600mm centers (minimum)
Substrate options	<ul style="list-style-type: none"> • 10mm non-rated plasterboard (minimum) • Lath & Plaster (10mm minimum thickness)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Insulation	Nil, Glasswool, Rockwool, Polyester (refer FRL's above)
Fire test references	I3G10, I3B04A, I3E10, BETC-NH-2003-408, FS3791/2869, FCO2482

Note:

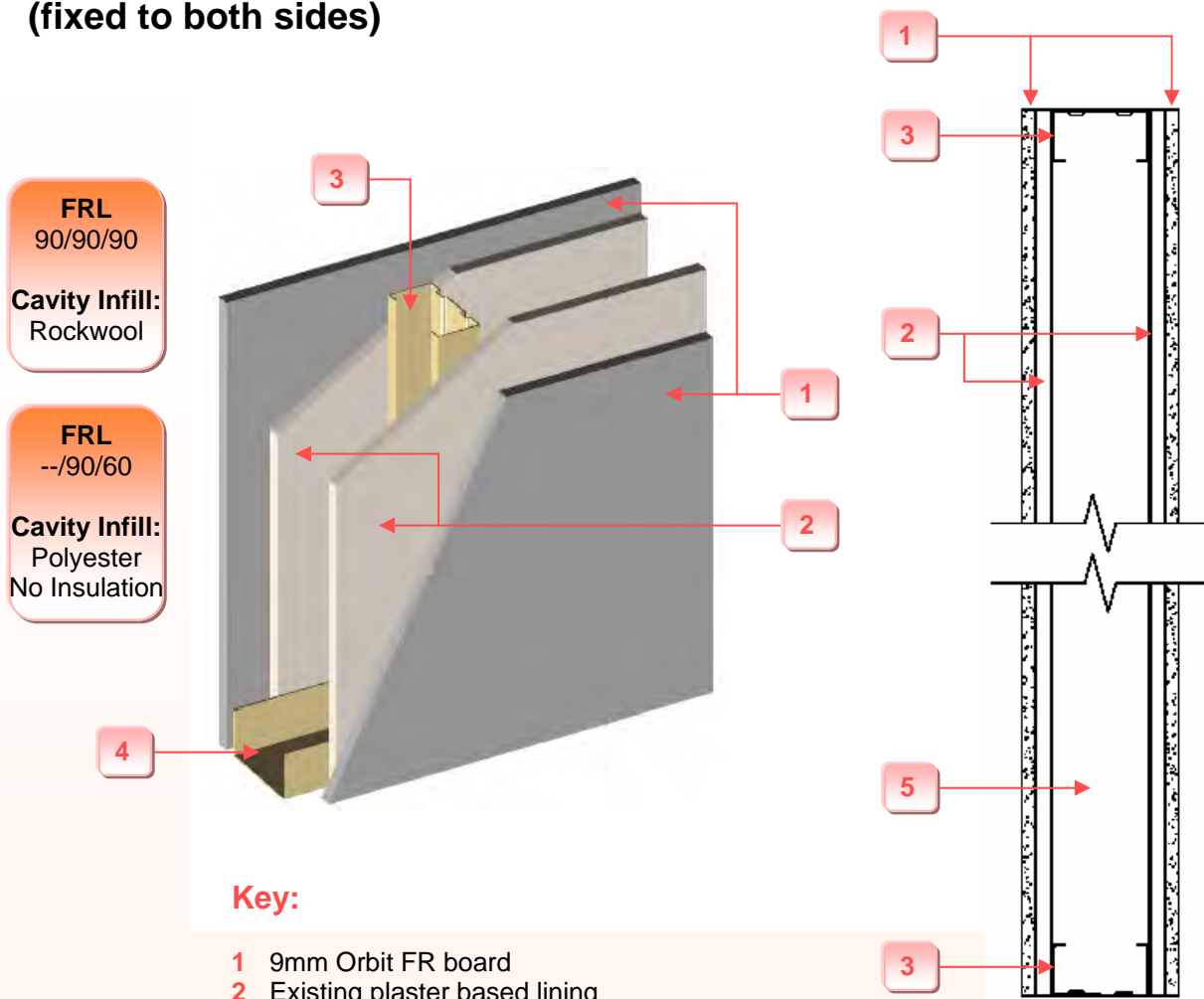
For other existing substrates such as timber based boards, AC board, or brickwork, please refer to the other Orbit FR system datasheets.

* For more detailed installation details, contact Fire Containment.

EXISTING WALLS

Existing Walls

Upgrading plaster on steel framing using 9mm Orbit FR (fixed to both sides)



- Key:**
- 1 9mm Orbit FR board
 - 2 Existing plaster based lining
 - 3 Steel stud
 - 4 Steel track
 - 5 Cavity insulation

Orbit FR	9mm thick to two side
Stud depth	92mm minimum steel stud
Stud spacing	Nominal 600mm centers (minimum)
Track depth	Steel track to suit stud depth
Substrate options	<ul style="list-style-type: none"> • 10mm non-rated plasterboard (minimum) • Lath & Plaster (10mm minimum thickness)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centers. Allow 10 to 16mm from edges of Orbit FR.
Insulation	Nil, Glasswool, Rockwool, Polyester (refer FRL's above)

Note:
For other existing substrates such as timber based boards, AC board, or brickwork, please refer to the other Orbit FR system datasheets.

* For more detailed installation details, contact Fire Containment.

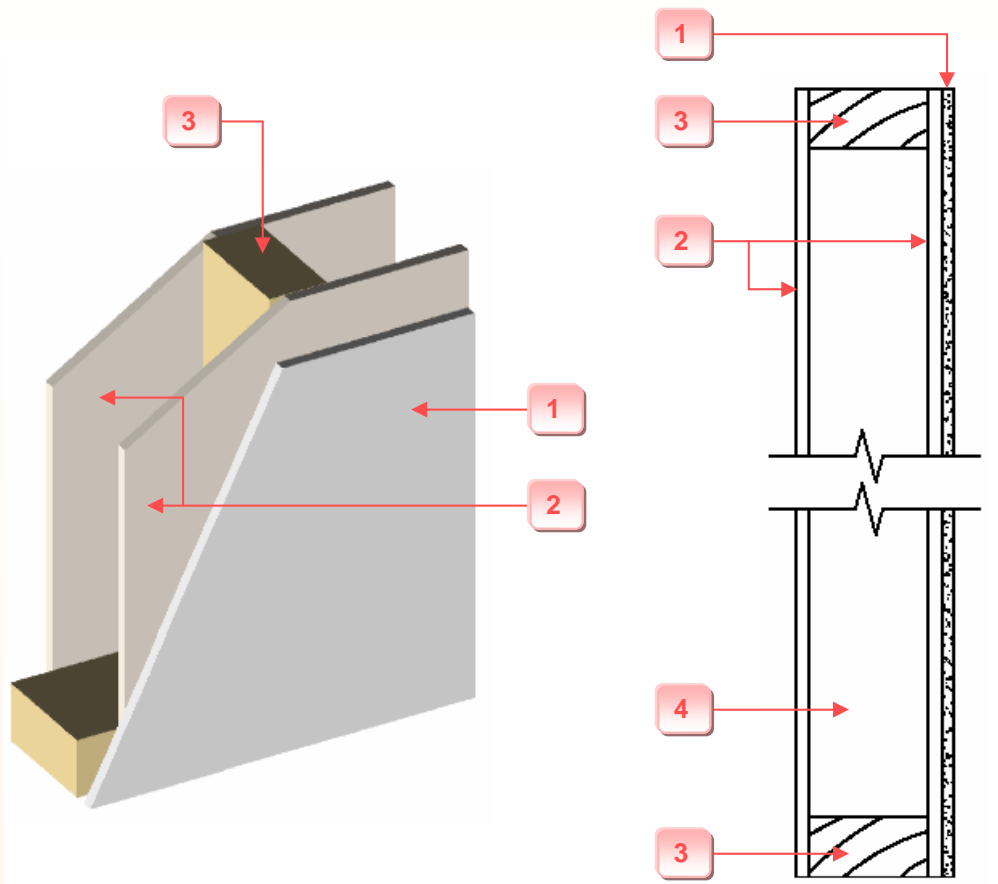
EXISTING WALLS

Existing Shafts & Risers

Upgrading plaster on timber framing using 9mm Orbit FR (fixed to one side only)

FRL
--/60/60
Cavity Infill:
Rockwool

FRL
--/60/30
Cavity Infill:
Polyester
No Insulation



Key:

- 1 9mm Orbit FR board
- 2 Existing plaster based lining
- 3 Timber stud
- 4 Cavity insulation

Orbit FR	9mm thick to one side only
Stud work	90 x 45mm pine or any other timber species
Stud spacing	Nominal 600mm centers (maximum)
Substrate options	<ul style="list-style-type: none"> • 10mm non-rated plasterboard (minimum) • Lath & Plaster (10mm minimum thickness)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Cavity insulation	Nil, Glasswool, Rockwool, Polyester (refer FRL's above)
Fire test references	I3G10, I3B04A, I3E10, BETC-NH-2003-408, FS3791/2869, FCO2482

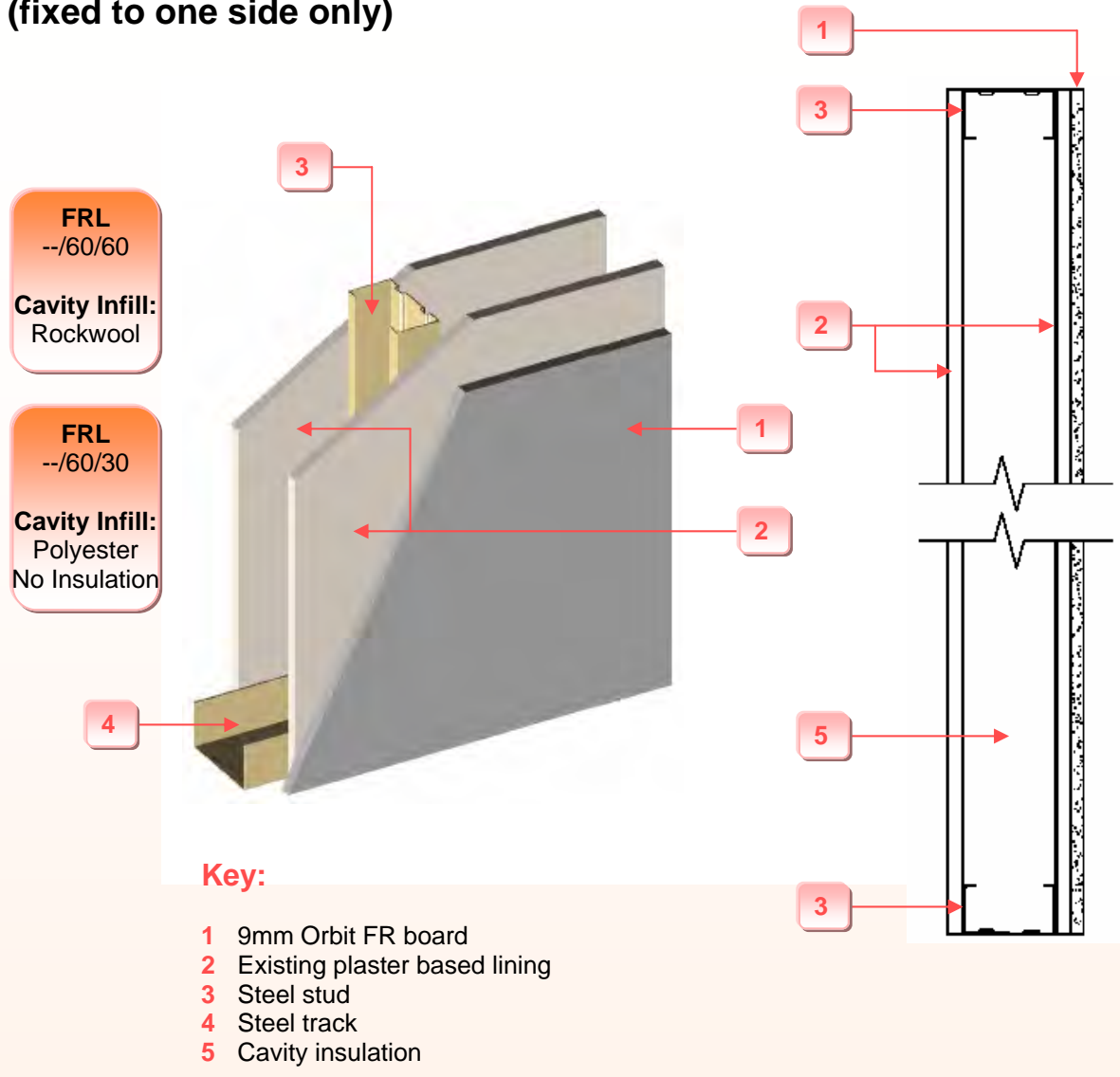
Note:

For other existing substrates such as timber based boards, AC board, or brickwork, please refer to the other Orbit FR system datasheets.

* For more detailed installation details, contact Fire Containment.

EXISTING SHAFTS & RISERS

Existing Shafts & Risers Upgrading plaster on steel framing using 9mm Orbit FR (fixed to one side only)



EXISTING SHAFTS AND RISERS

Orbit FR	9mm thick to one side only
Stud depth	92mm minimum steel stud
Stud spacing	Nominal 600mm centers (maximum)
Track depth	Steel track to suit stud depth
Substrate options	<ul style="list-style-type: none"> • 10mm non-rated plasterboard (minimum) • Lath & Plaster (10mm minimum thickness)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Insulation	Nil, Glasswool, Rockwool, Polyester (refer FRL's above)
Fire test references	I3G10, I3B04A, I3E10, BETC-NH-2003-408, FS3791/2869, FCO2482

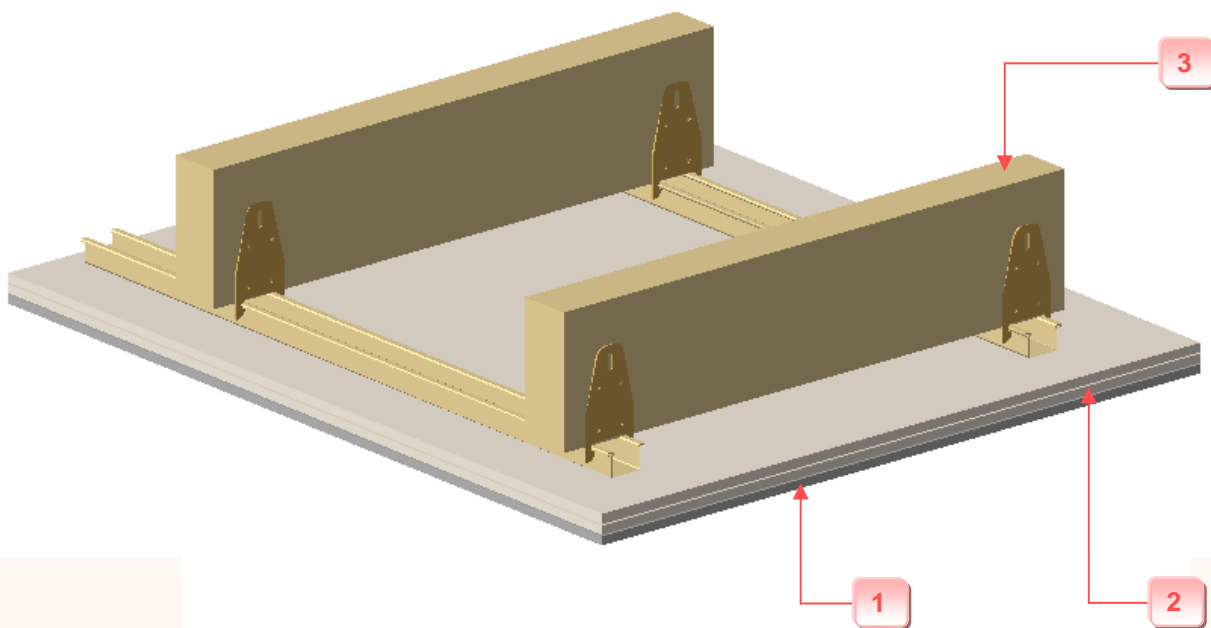
Note:
For other existing substrates such as timber based boards, AC board, or brickwork, please refer to the other Orbit FR system datasheets.

* For more detailed installation details, contact Fire Containment.

Existing Ceiling - 60 minute incipient fire rating Upgrade ceiling systems using 9mm Orbit FR

FRL
-/60/60

Incipient
rating



Key:

- 1 9mm Orbit FR board
- 2 Existing ceiling lining (2 x 10mm plasterboard min. thickness)
- 3 Ceiling support system

IMPORTANT TIP:

For existing systems with only one layer of 10mm plasterboard, add one more layer of 10mm plasterboard before applying Orbit FR.

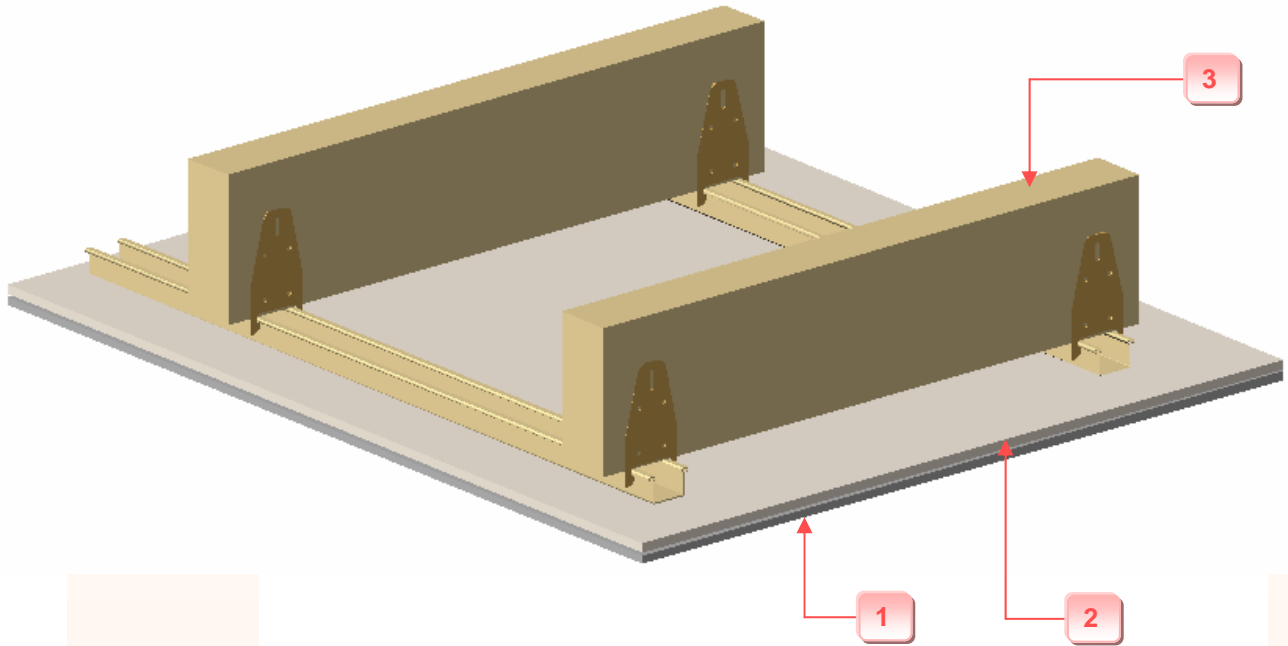
Orbit FR	9mm thick
Substrate	2 x 10mm non-rated plasterboard (minimum thickness)
Support system	Ceiling support system as per manufacturers guidelines
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 - 15mm from edges of Orbit FR.
Cavity Insulation	No Rockwool insulation required
Fire test references	BETC-NH-2003-407, BETC-NH-2003-30, FS3791/2869 , FCO2482

EXISTING CEILING SYSTEMS

Existing Ceiling - 30 minute incipient fire rating Upgrade ceiling systems using 9mm Orbit FR

FRL
-/30/30

Incipient
rating



Key:

- 1 9mm Orbit FR board
- 2 Existing plaster based lining
- 3 Ceiling system

Orbit FR	9mm thick
Substrate	10mm non-rated plasterboard (minimum thickness)
Support system	Ceiling support system as per manufacturers guidelines
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 15mm from edges of Orbit FR.
Cavity Insulation	No Rockwool required
Fire test references	BETC-NH-2003-407, BETC-NH-2003-30, FS3791/2869 , FCO2482

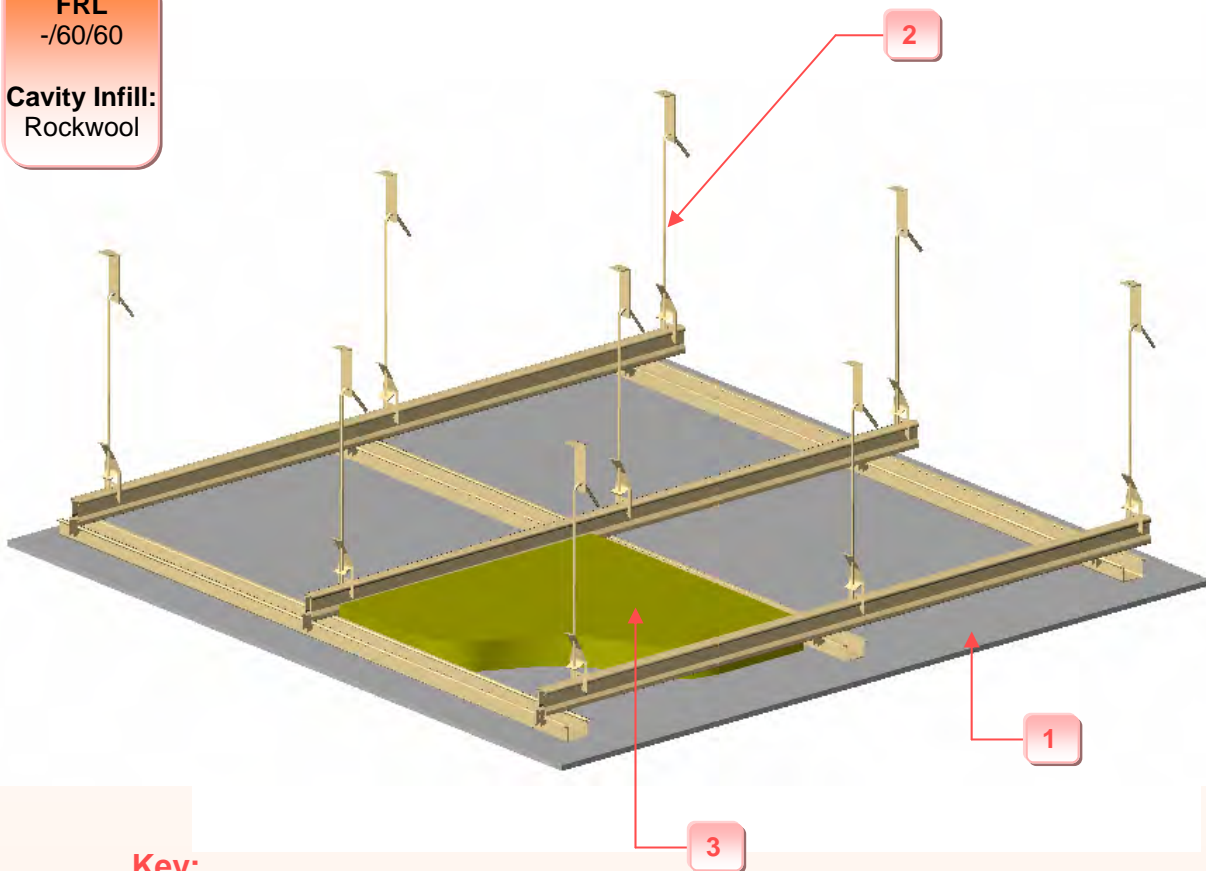
* For other systems or for more detailed installation details, contact Fire Containment.

EXISTING CEILING SYSTEMS

Suspended Ceiling

New build suspended ceiling systems using 9mm Orbit FR

FRL
-/60/60
Cavity Infill:
Rockwool



Key:

- 1 9mm Orbit FR board
- 2 Suspended ceiling systems
- 3 Insulation

Orbit FR	9mm thick
Stud work	Suspend ceiling system as per manufacturers guidelines
Stud spacing	Nominal 600mm centres (maximum)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Cavity Insulation	Rockwool (refer FRL's above)
Fire test references	BETC-NH-2003-407, BETC-NH-2003-30

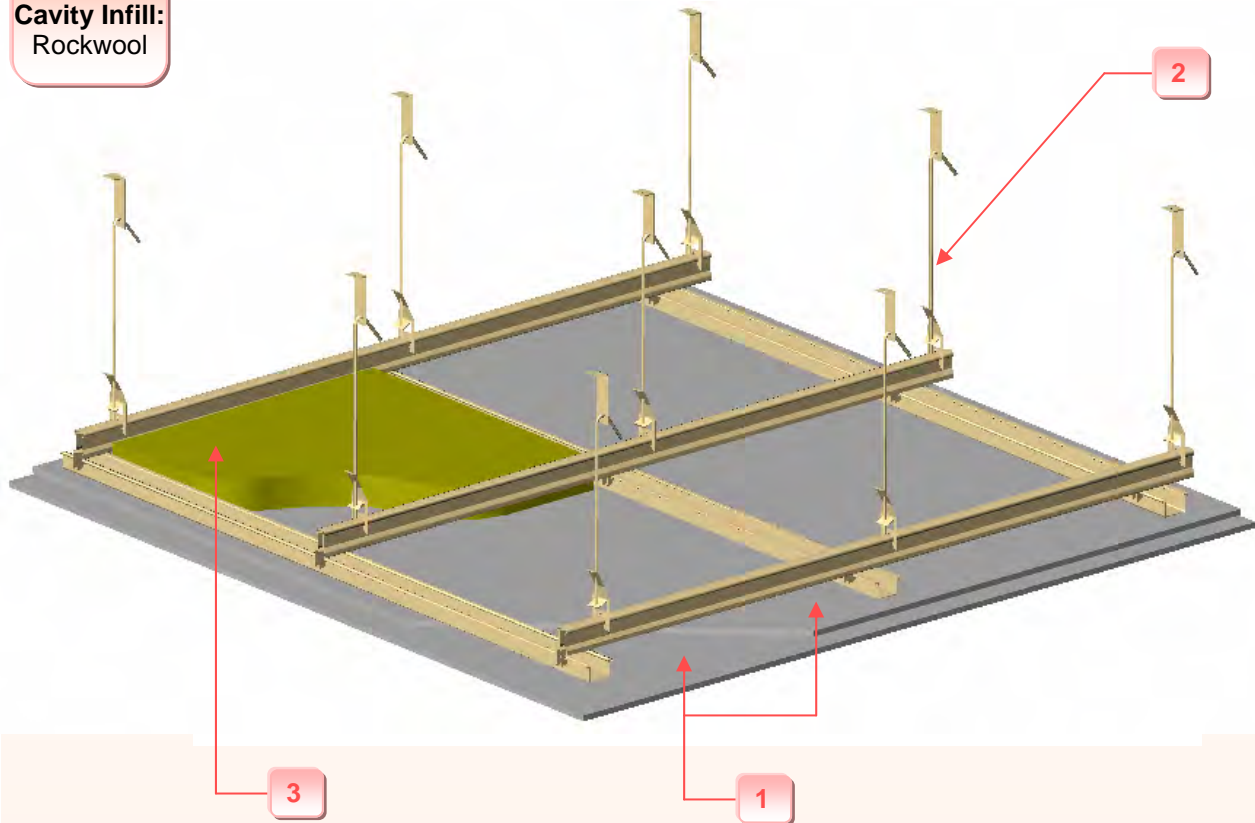
* For other systems or for more detailed installation details, contact Fire Containment.

SUSPENDED CEILING

Suspended Ceiling

New build suspended ceiling systems using 9mm Orbit FR (Double layers)

FRL
-/120/90
Cavity Infill:
Rockwool



Key:

- 1 9mm Orbit FR board
- 2 Suspended ceiling system
- 3 Insulation

Orbit FR	2 x 9mm thick
Stud work	Suspend ceiling system as per manufacturers guidelines
Stud spacing	Nominal 600mm centres (maximum)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Cavity Insulation	Rockwool (refer FRL's above)
Fire test references	BETC-NH-2003-407, BETC-NH-2003-30

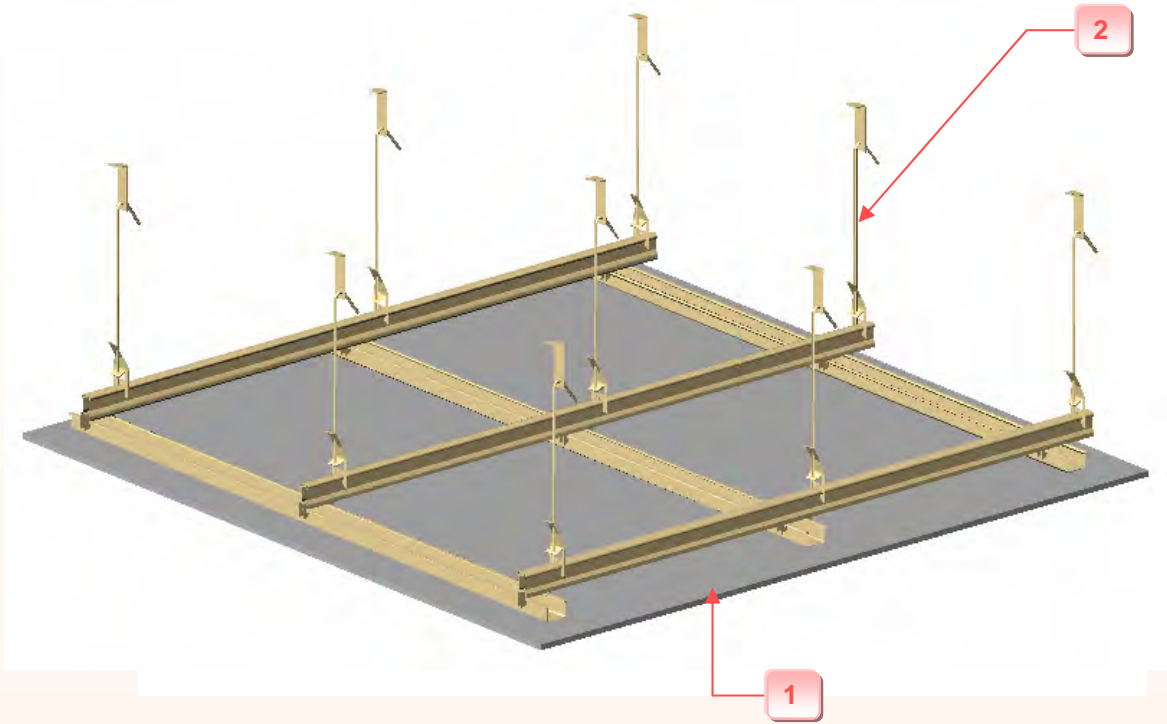
* For other systems or for more detailed installation details, contact Fire Containment.

SUSPENDED CEILING

Suspended Ceiling

New build suspended ceiling systems using 9mm Orbit FR

FRL
-/60/-



Key:

- 1 9mm Orbit FR board
- 2 Suspended ceiling system

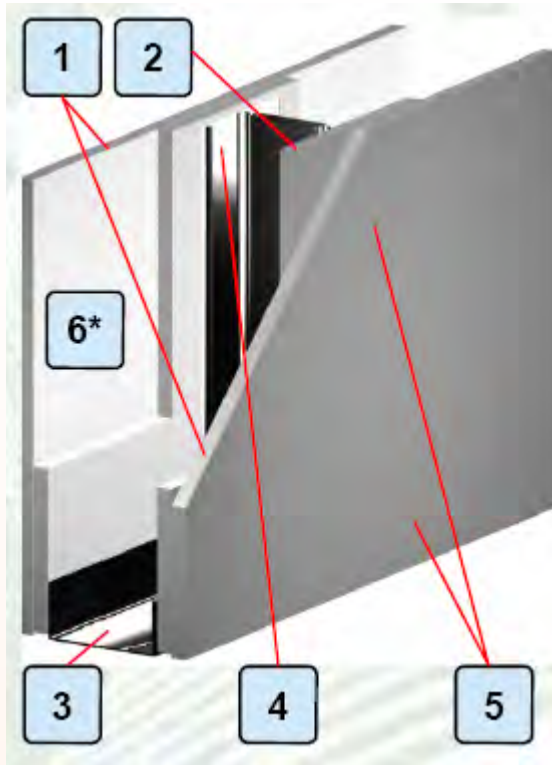
Orbit FR	9mm thick
Stud work	Suspend ceiling system as per manufacturers guidelines
Stud spacing	Nominal 600mm centres (maximum)
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Cavity Insulation	Nil
Fire test references	BETC-NH-2003-407, BETC-NH-2003-30

* For other systems or for more detailed installation details, contact Fire Containment.

SUSPENDED CEILING

Internal Fire Resistant Walls

FRL
240/240/240
Cavity Infill:
Rockwool



Key:

- 1 9mm Orbit FR board
- 2 9mm ORBIT FR fillets
- 3 Floor and head track
- 4 Steel studs
- 5 Self tapping screws
- 6 Rockwool insulation
70mm x 80kg/m³

INTERNAL WALLS

Orbit FR	9mm thick to both sides PLUS 9mm fillets over steel stud and track
Stud work	75 x 25mm track, 2x 75 x 35mm studs
Stud spacing	Nominal 600mm centres
Fixings	(7-16 x 50mm) self tapping screws @ 200mm centres. Allow 10 to 16mm from edges of Orbit FR.
Insulation	Rockwool,
Fire test references	

Note:
DRAFT ONLY

* For more detailed installation details, contact Fire Containment.