MARCH 2023

PASSIVE FIRE PROTECTION SYSTEMS ELECTRICAL

BRANZ Appraised
Appraisal No.1088 [2019]

ALLPROOF INDUSTRIES

www.allproof.com

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FIRE TESTING

Allproof industries has an extensive testing programme with independent IANZ accredited fire testing laboratories and is consistently working with Industry to provide exceptional products that can help overcome issues regularly faced on site.

The passive fire protection products offered from Allproof are designed to contain a fire in the compartment of origin, thus limiting the spread of fire and smoke for a limited period of time. The fire ratings and installation details are illustrated in this document.

All products are tested to AS1530.4 - 2014 and AS4072.1 - 2005.

The passive fire protection products designed to protect service penetrations are tested using an open/closed format. That is, the pipe is capped on the fire side during the test and is open on the non fire side. When fire testing electrical services, 2m of cable/pipe projects out of the supporting construction (wall or floor) and is deemed to be representative of general electrical systems and associated services.

ADVANCED INTUMESCENT

At the core of the Allproof passive fire protection product range is the advanced intumescent technology. This enables Allproof to offer products with performance and design advantages for engineers and installers of passive fire protection products. Allproof's intumescent material expands when exposed to heat and as its volume increases with significant expansion pressure, it produces a stable char. The intumescent char formed is a poor conductor of heat, retarding heat transfer and retaining the integrity and insulation of service penetrations through otherwise fire-resistance rated walls or floors.

ALLPROOF INTUMESCENT TECHNOLOGY:

> Flexible rubber-like composition allows easy handling
> Graphite based
> Moisture resistant
> Silver/grey in colour
> Excellent expansion pressure and volume
> Material stable after expansion

Activated Allproof Intumescent during fire testing in a plasterboard wall.

LOW PROFILE COLLARS

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Low profile collars are designed to be installed in concrete, masonry fire rated walls and floors, and fire rated plasterboard walls and ceilings. The Allproof fire collars consist of intumescent material encased in a steel surround with fixing tabs. The advanced intumescent technology allows Allproof to achieve a very low profile height of only 28mm for the 25-80mm fire collars.

When fire occurs the intumescent material expands against the steel surround as the flammable service running through the collar melts and burns away. The steel casing acts as an excellent heat sync ensuring fast activation of the intumescent, forming a stable fire resistant plug, maintaining both fire integrity and insulation.

Fire collars are designed to be exposed in a wall or floor application (i.e. face fixed). The collars should always be fixed to the underneath of the concrete floor. In wall situations one collar should be used on each exposed side of the fire rated wall.

SUITABLE FOR FITTING TO:

> Concrete Floor
> Rib & Timber Infill Floor
> Cross Laminated Timber Floor
> Plasterboard Ceilings
> Plasterboard Walls

FEATURES:

> Totally unaffected by water
> Unique low profile design (25-80mm)
> Stainless or galvanized steel case
> Retro fitting - easy install slide tab
> For use on various penetrations

INSTALLATION INSTRUCTIONS:

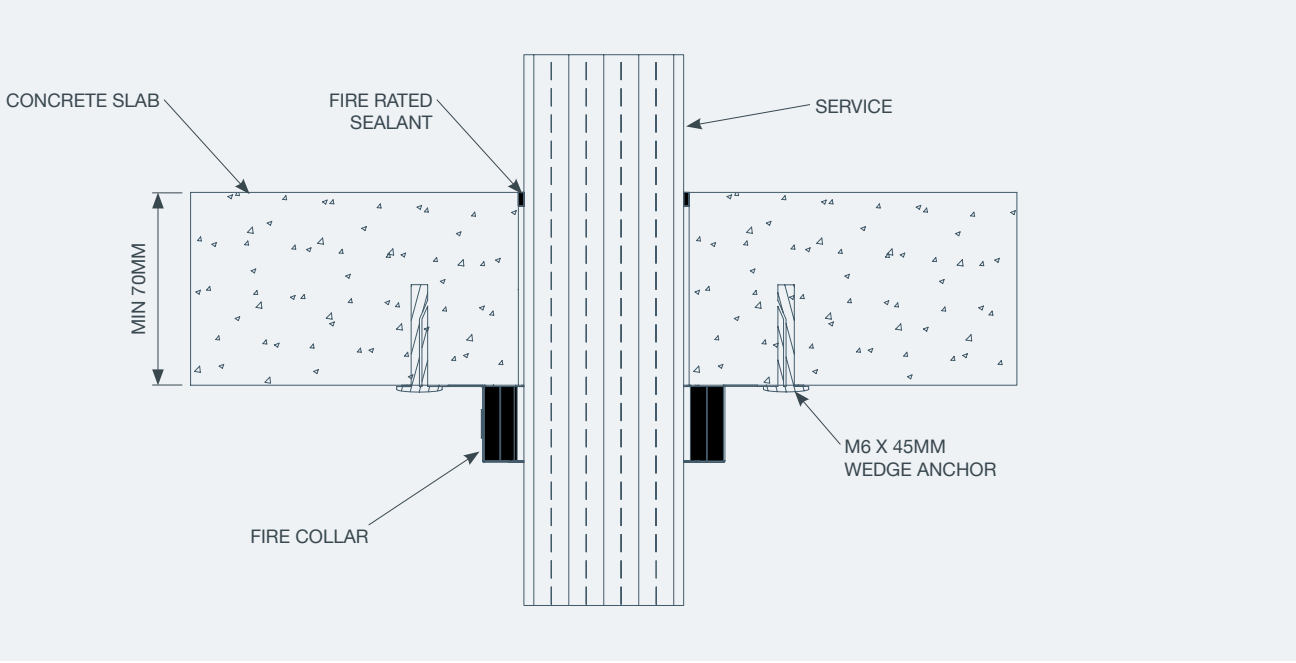
1. Ensure substrate around service is flat and free from obstructions.
2. Open fire collar and position around service.
3. Slide tab through slot in fire collar and fold back 180° to secure.
4. Secure fire collar by using suitable fixings as per testing. Do not use fixings which rely on plastic or nylon components for grip.
5. Install only from underside on floor penetrations. Install fire collar on both sides for wall penetrations.

CONCRETE SLAB TEST RESULTS:

DESCRIPTION	SLAB DEPTH (MM)	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	FLOOR FRL*	REPORT NUMBER
CABLES					
1x TPS Cable	70	ALLFC25	28	-/60/45	145431
7x TPS Cables	70	ALLFC25	28	-/60/45	145431
1x CAT6 Data Cable	70	ALLFC25	28	-/60/45	145431
10x CAT6 Data Cables	70	ALLFC25	28	-/60/60	145431
1x Fire Alarm & 1x Fibre Optic Cable	70	ALLFC50	62	-/60/60	145431
25x Fire Alarm & 25x Fibre Optic Cables	70	ALLFC50	62	-/60/60	145431
1x 25mm Mains Cable & 1x 10mm Earth Cable	70	ALLFC25	28	-/60/45	145431

Fixing: M6 x 45mm Wedge Anchors

CONCRETE FLOOR SLAB INSTALLATION DETAILS:

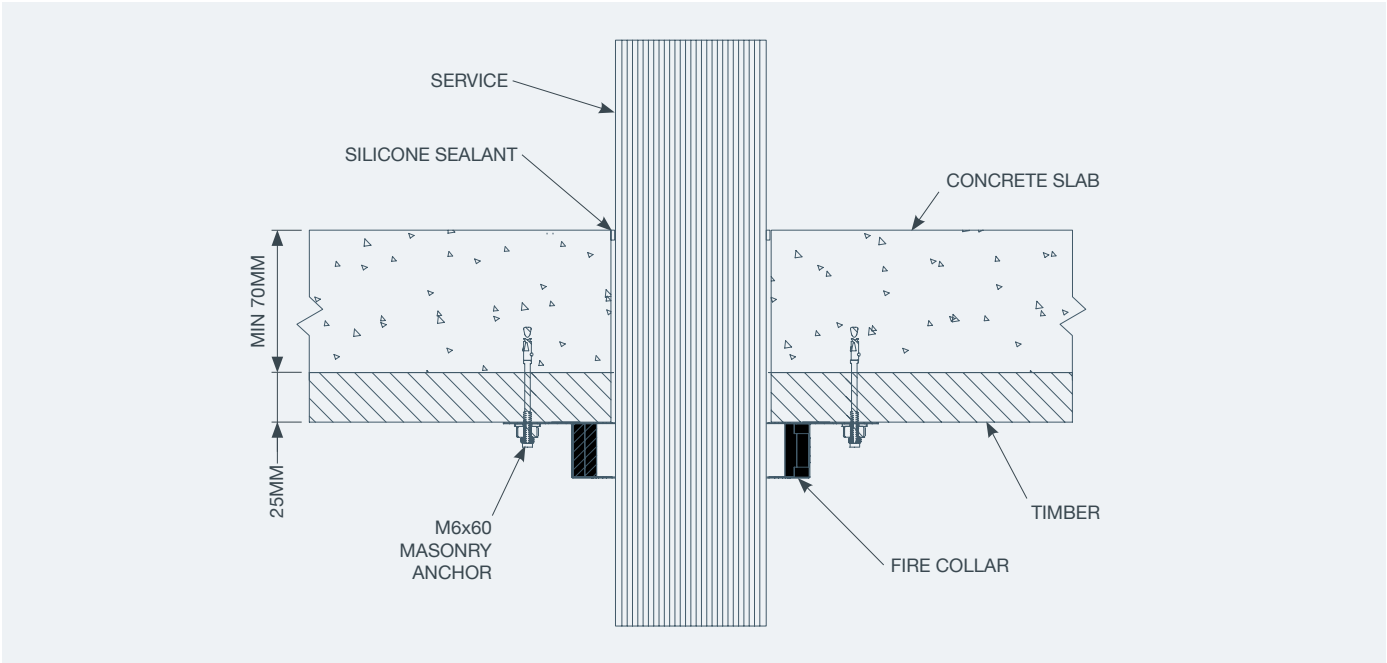


RIB & TIMBER INFILL TEST RESULTS:

DESCRIPTION	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	FLOOR FRL*	REPORT NUMBER
CABLES				
60x TPS Cables	ALLFC80	85	-/90/45	143281-003
100x CAT6 Data Cables	ALLFC80	80	-/90/60	143281-003
25x Fire Alarm & 25x Fibre Optic Cables	ALLFC50	62	-/90/60	143281-003
1x 25mm Mains Cable + 1x 10mm Earth Cable	ALLFC25	28	-/90/45	143281-003
A/C MIXED SERVICES				
1x Pair Coil, 1x TPS Cable & 1x 20mm PVC DWV	ALLFC50	62	-/90/90	143281-003
3x Pair Coil, 6x TPS Cables & 1x 25mm PVC DWV	ALLFC100	102	-/90/30	143281-003

Fixing: Collars tested using M6x60 masonry anchors
Tested 70mm concrete slab with timber infill boards 25mm thick.

RIB & TIMBER INFILL INSTALLATION DETAILS:



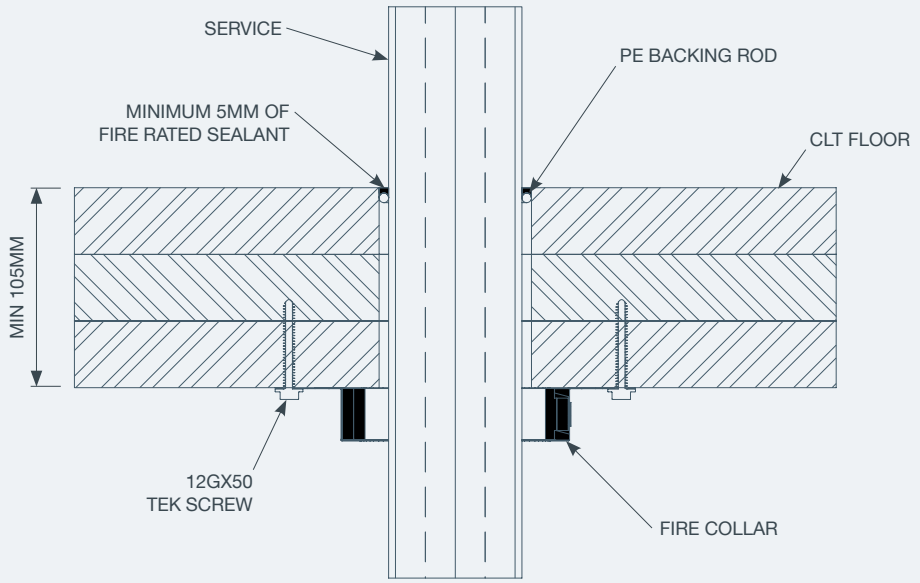
CROSS LAMINATED TIMBER (CLT) FLOOR TEST RESULTS:

DESCRIPTION	TIMBER DEPTH	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	FLOOR FRL*	REPORT NUMBER
CABLES					
* 7x TPS Cables	105	ALLFC25	32	-/60/30	145432
* 7x CAT6 Data Cables	105	ALLFC25	28	-/60/45	145432
* 1x 16mm Mains & 1x 10mm Earth Cable	105	ALLFC25	30	-/60/60	145432
A/C MIXED SERVICES					
* 1x Fire Rated Pair Coil, 1x TPS & 1x CAT6 Data Cables	105	ALLFC80	80	-/60/30	145432

Fixing: Collars tested using Tek Screw 12G x 50mm

* Tested with PE Backing Rod installed between floor substrate and pair coil before fire rated sealant applied

CROSS LAMINATED TIMBER INSTALLATION DETAILS:



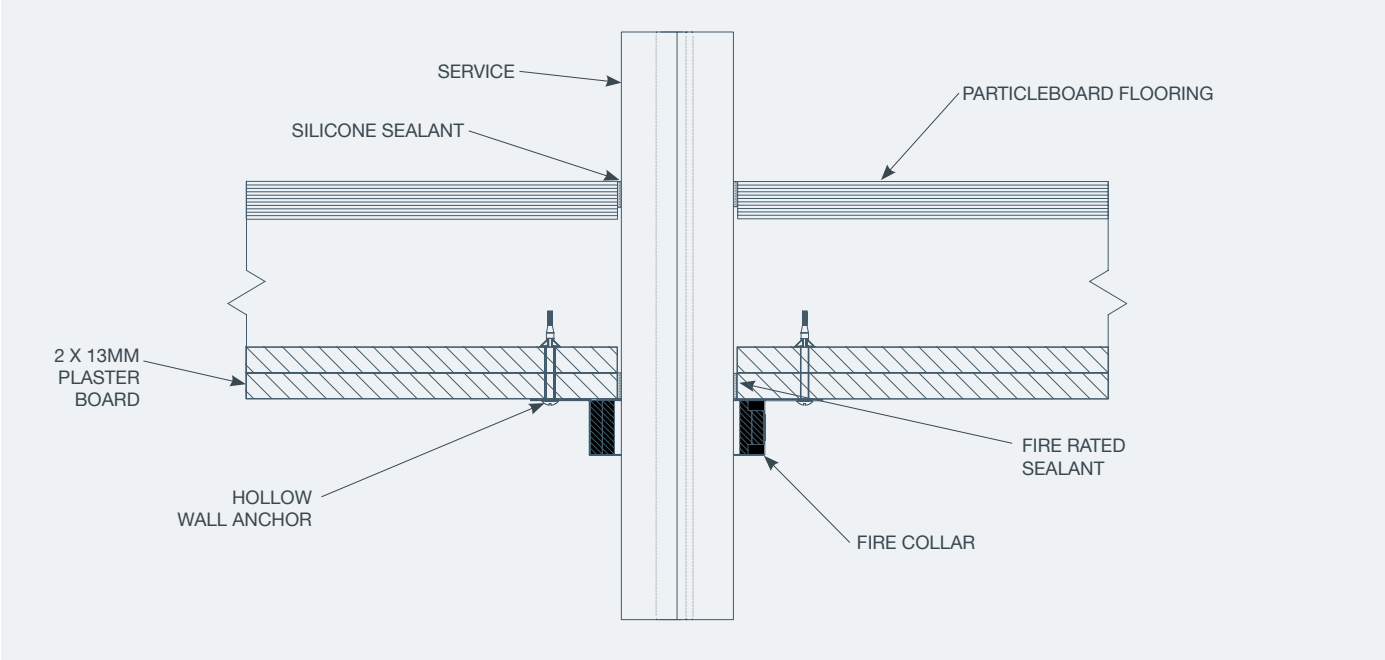
2 X 13MM PLASTERBOARD CEILING TEST RESULTS:

DESCRIPTION	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	PLASTERBOARD WALL FRL*	REPORT NUMBER
CABLES				
7x TPS Cables	ALLFC25	32	-/90/90	142100
10x CAT6 Data Cables	ALLFC25	28	-/90/90	142100
1x 25mm Mains Cable & 1x 10mm Earth Cable	ALLFC25	28	-/90/90	142100
A/C MIXED SERVICES				
Pair Coil, TPS Cable & 10mm PVC Pipe	ALLFC50	60	-/90/90	142100

Fixing: Collars tested using hollow wall anchors

Tested using a 190mm deep timber framing with two layers of 13mm fire rated plasterboard on the exposed side of the frame and 19mm particleboard flooring on the unexposed side of the frame. A total floor-ceiling thickness of 235mm. Pipe collars are fixed using hollow wall anchors directly into the plasterboard - not fixed into framing or studs. Intumescent sealant is applied in the space between the services and plasterboard on the exposed face and silicone sealant between the service and particleboard flooring on the unexposed face.

PLASTERBOARD CEILING INSTALLATION DETAILS:



13MM PLASTERBOARD WALL TEST RESULTS:

DESCRIPTION	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	PLASTERBOARD WALL FRL*	REPORT NUMBER
PVC CONDUIT				
25mm PVC Conduit Filled with 3x Power Cables	ALLFC25	28	-/60/45	5810
CABLES				
25x TPS Cables	ALLFC50	57	-/60/45	143281
60x CAT6 Data Cables	ALLFC50	57	-/60/45	143281
6x Fire Alarm & 6x Fibre Optic Cables	ALLFC25	32	-/60/60	143281
A/C MIXED SERVICES				
3x Pair Coil, 6x TPS Cables & 1x 32mm PVC DWV	ALLFC100	95	-/60/30	143281
A/C MIXED SERVICES - IN WALL				
*Pair Coil, TPS Cable & 20mm PVC DWV (Flexi Hose)	ALLFC50	95	-/60/60	13509

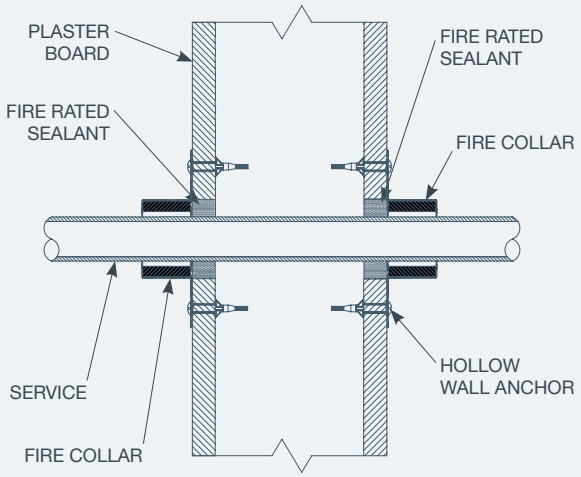
Fixing: Collars tested using hollow wall anchors

Tested using a 64mm wide steel stud with a single layer of 13mm fire rated plasterboard on each side of the frame. A total wall thickness of 90mm. Fire collars are fixed using hollow wall anchors directly into the plasterboard - not fixed into framing or studs in wall. Intumescent sealant is applied in the space between the service and plasterboard on both the exposed and unexposed face.

* In wall Pair Coil uses fire rated sealant as smoke seal, see notes on install detail below.

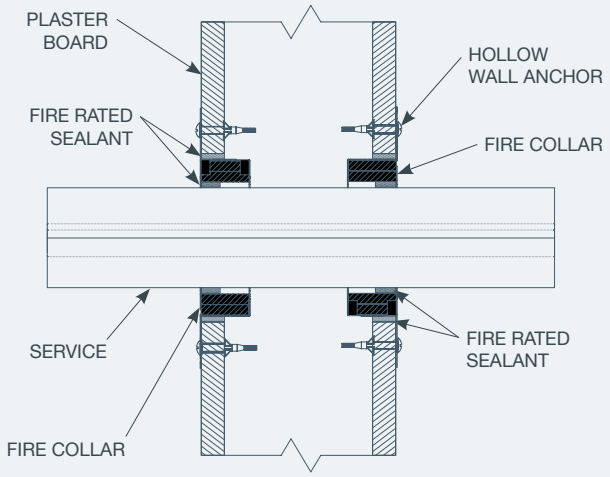
13MM PLASTERBOARD INSTALLATION DETAILS:

FACE FIXED (SEE RELEVANT TABLE)



DETAIL SHOWS CONDUIT PIPE, OTHER TESTED SERVICES TO BE BUNDLED TOGETHER THROUGH THE PENETRATION, FIRE COLLAR AND SEALANT INSTALL CONSISTENT WITH ALL SERVICES.

IN WALL (SEE RELEVANT TABLE)



DETAIL SHOWS PAIR COIL, OTHER TESTED SERVICES TO BE BUNDLED TOGETHER IN A SIMILAR FASHION, FIRE COLLAR AND SEALANT INSTALL CONSISTENT WITH ALL SERVICES.

Smoke seal on pair coil achieved with fire rated sealant between service and fire collar. Other services not to include fire rated sealant between service and collar unless otherwise stated.

PIPE COLLAR DIMENSIONS

CODE	NOM. PIPE DIAMETER	OUTSIDE DIAMETER (A)	INSIDE DIAMETER (B)	COLLAR HEIGHT (C)	COLLAR DIAMETER (D)	# OF FIXING TABS
ALLFC25GALV	25mm	100mm	31mm	28mm	44mm	2
ALLFC40SS ALLFC40GALV	40mm	121mm	50mm	28mm	63mm	2
ALLFC50SS ALLFC50GALV	50mm	122mm	63mm	28mm	88mm	3
ALLFC65SS ALLFC65GALV	65mm	136mm	77mm	28mm	102mm	3
ALLFC80SS ALLFC80GALV	80mm	154mm	95mm	28mm	120mm	3
ALLFC100SS ALLFC100GALV	100mm	213mm	120mm	38mm	145mm	4
ALLFC150SS ALLFC150GALV	150mm	258mm	165mm	54mm	190mm	6
ALLFC250SS	225mm	370mm	253mm	102mm	292mm	6

CAST-IN COLLARS

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MADE FROM **RECYCLED** PLASTIC

Allproof Cast-In Fire Collars (CIFC) are designed to reduce the labour content of passive fire rating service penetrations on concrete floors that are poured on site. Simply fix the base to the formwork on site and the service penetration is located complete with passive fire protection. This eliminates the need for core drilling of penetrations after the floor is poured and retro fitting a fire collar or wrap. Once the floor is poured and formwork stripped, simply cut off the top of the Cast-In Collar and install service.

INSTALLATION INSTRUCTIONS:

1. Fix to formwork in correct location.
2. Pour concrete floor.
3. Remove formwork ensuring galvanised steel ring is exposed.
4. Cut plastic collar to desired height.
5. Install service.
6. Seal gap between service and collar on top side of floor with intumescent sealant.

SUITABLE FOR FITTING WITHIN:

> Solid Masonry Floors

FEATURES:

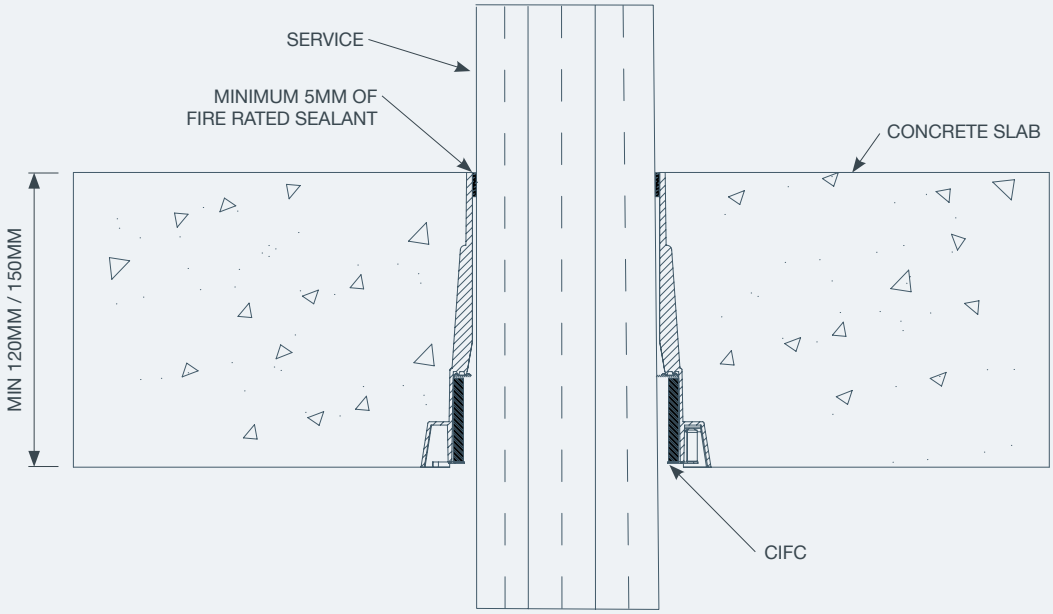
> 250mm overall height
> Sturdy construction for casting in
> Multiple fixing positions
> Made from recycled PP

CONCRETE SLAB TEST RESULTS:

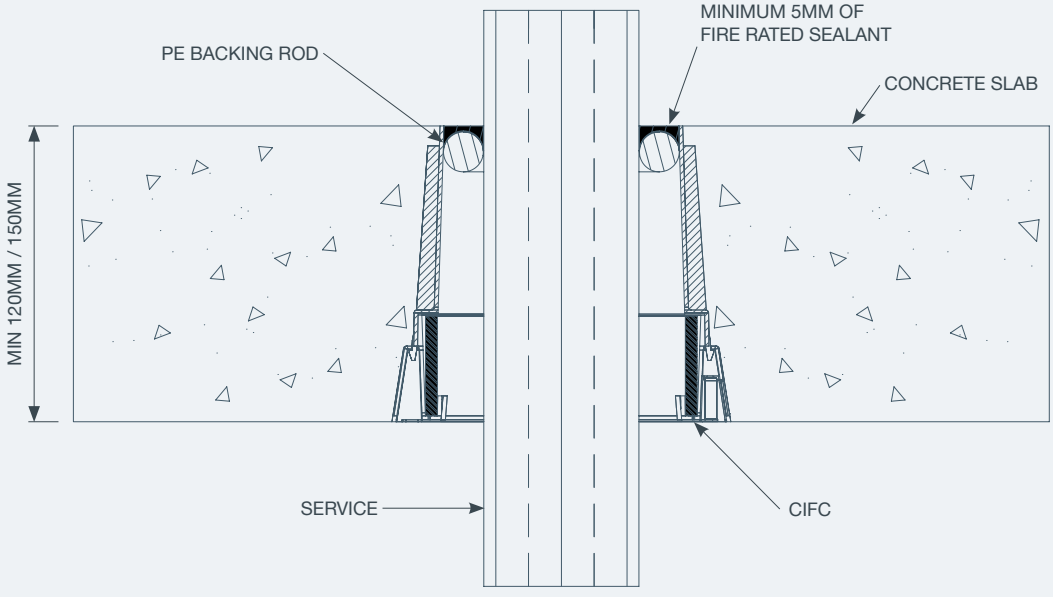
DESCRIPTION	SLAB DEPTH (MM)	PRODUCT CODE	FLOOR FRL*	REPORT NUMBER
CABLES				
25x TPS Cables	120	CIFC50S	-/180/45	145535
35x CAT6 Data Cables	120	CIFC50S	-/180/120	145535
A/C MIXED SERVICES				
3x Fire Retardant Pair Coil	150	CIFC100S	-/180/180	143281-004
* 1x Fire Retardant Pair Coil + 1x TPS & 1x CAT6 Data Cables	150	CIFC100S	-/180/-	145430
3x Fire Retardant Pair Coil + 3x TPS & 3x CAT6 Data Cables	150	CIFC100S	-/180/60	145430

* Tested with PE Backing Rod installed between Cast-In Collar and pair coil before fire rated sealant applied

CONCRETE SLAB INSTALLATION DETAILS:



WITH PE BACKING ROD (SEE RELEVANT RESULTS)



DROP IN FIRE COLLARS

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Allproof Drop In Fire Collars (DIFC) provide a simple and effective passive fire rating option for thin concrete floors or trapezoidal steel tray concrete floors. These composite floors feature profile changes on the underside of the slab and make it difficult to fire rate with a conventional fire collar fixed to the underside of a floor slab.

INSTALLATION INSTRUCTIONS:

1. Core drill hole to specified diameter to suit service size.
2. Install Drop-In Fire Collar fixing with two metal pin anchors. (Floor waste installs require the tabs to be recessed into the slab).
3. Ensure collar on underside of slab is exposed no greater than 80mm and recessed in slab no more than 5mm.
4. Insert service through collar.
5. Seal gaps between concrete/collar and collar/service with a minimum 5mm depth of silicone sealant.

SUITABLE FOR FITTING WITHIN:

> Trapezoidal steel tray concrete floors (composite floors)

FEATURES:

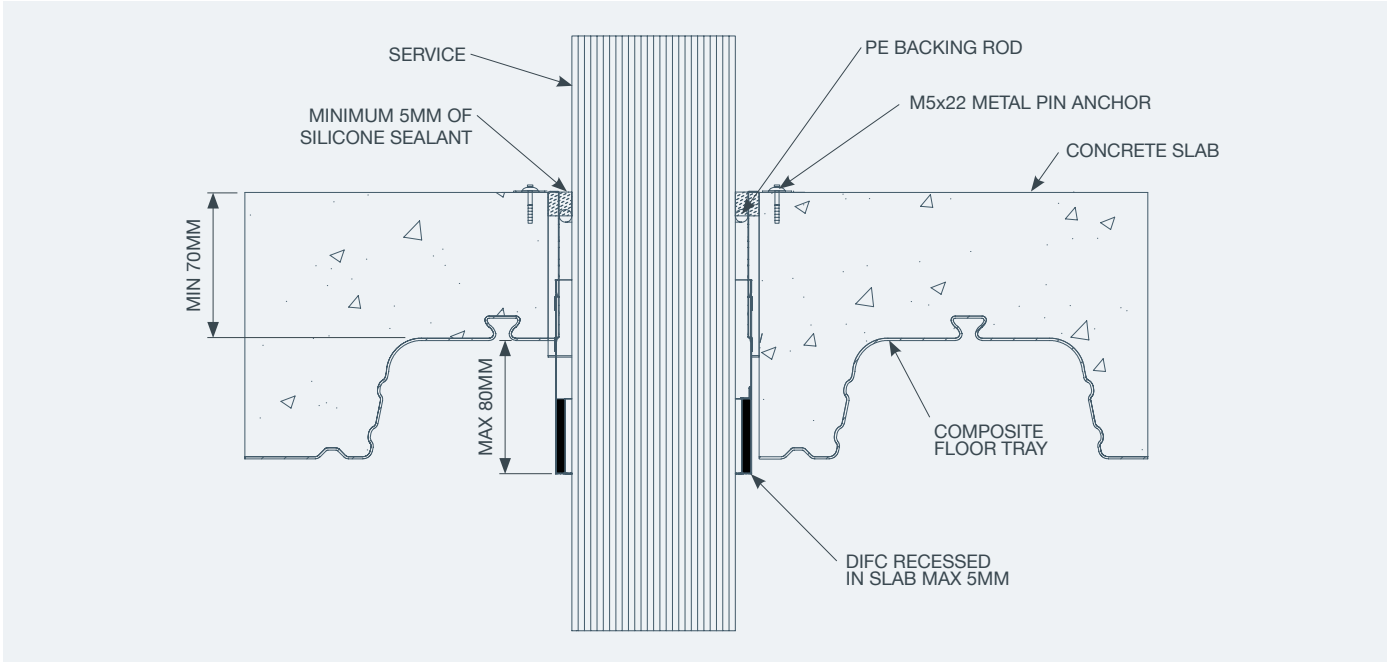
> Installed and fixed from top side of slab
> Can be retrofit around pipe
> Made from Galvanised steel

COMPOSITE FLOOR TEST RESULTS:

DESCRIPTION	SLAB DEPTH (MM)	PRODUCT CODE	PENETRATION HOLE SIZE (MM)	FLOOR FRL*	REPORT NUMBER
CABLES					
60x TPS Cables	70/130	DIFC80	112	-/120/60	143281-002
100x CAT6 Data Cables	70/130	DIFC80	112	-/120/60	143281-002
25x Fire Alarm & 25x Fibre Optic Cables	70/130	DIFC50	86	-/120/90	143281-002
1x 25mm Mains Cable & 1x 10mm Earth Cable	70/130	DIFC32	57	-/120/30	143281-002
A/C MIXED SERVICES					
1x Pair Coil, 1x TPS Cable & 1x 20mm PVC DWV	70/130	DIFC50	82	-/120/90	143281-002
3x Pair Coil, 6x TPS Cables & 1x 25mm PVC DWV	70/130	DIFC100	142	-/60/45	143281-002

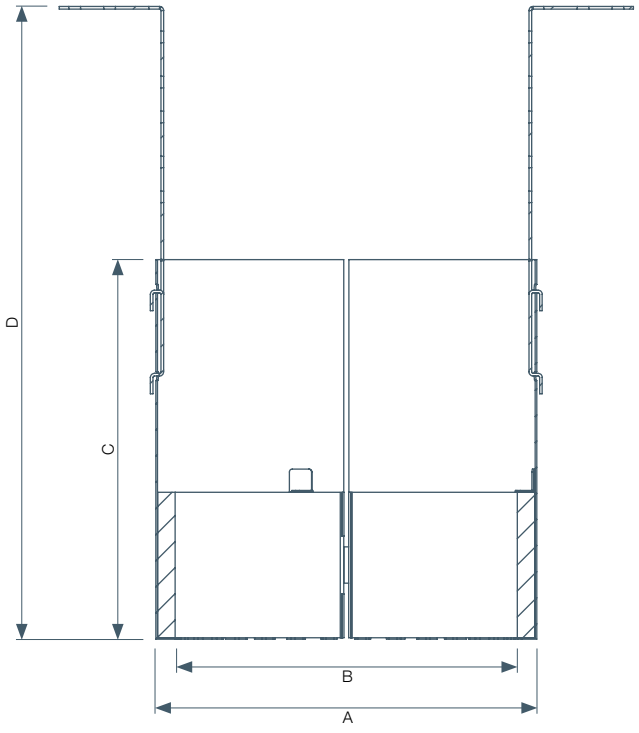
70/130 - Tested on a composite concrete floor with 70mm minimum thickness and 130mm maximum thickness. Profile change of 60mm.

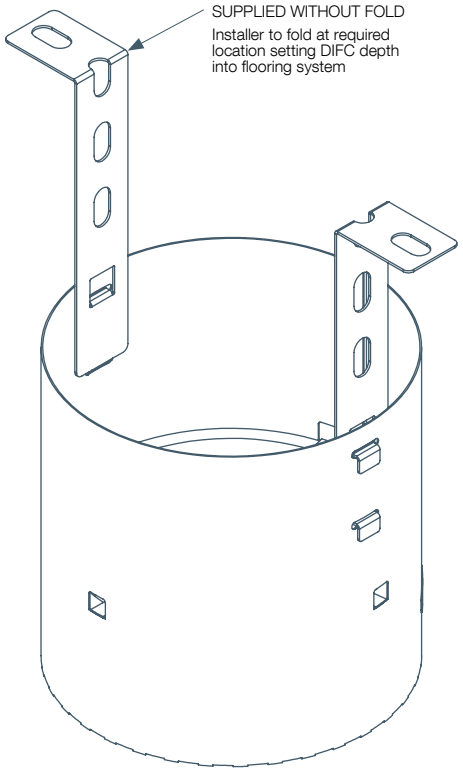
COMPOSITE FLOOR INSTALLATION DETAILS:

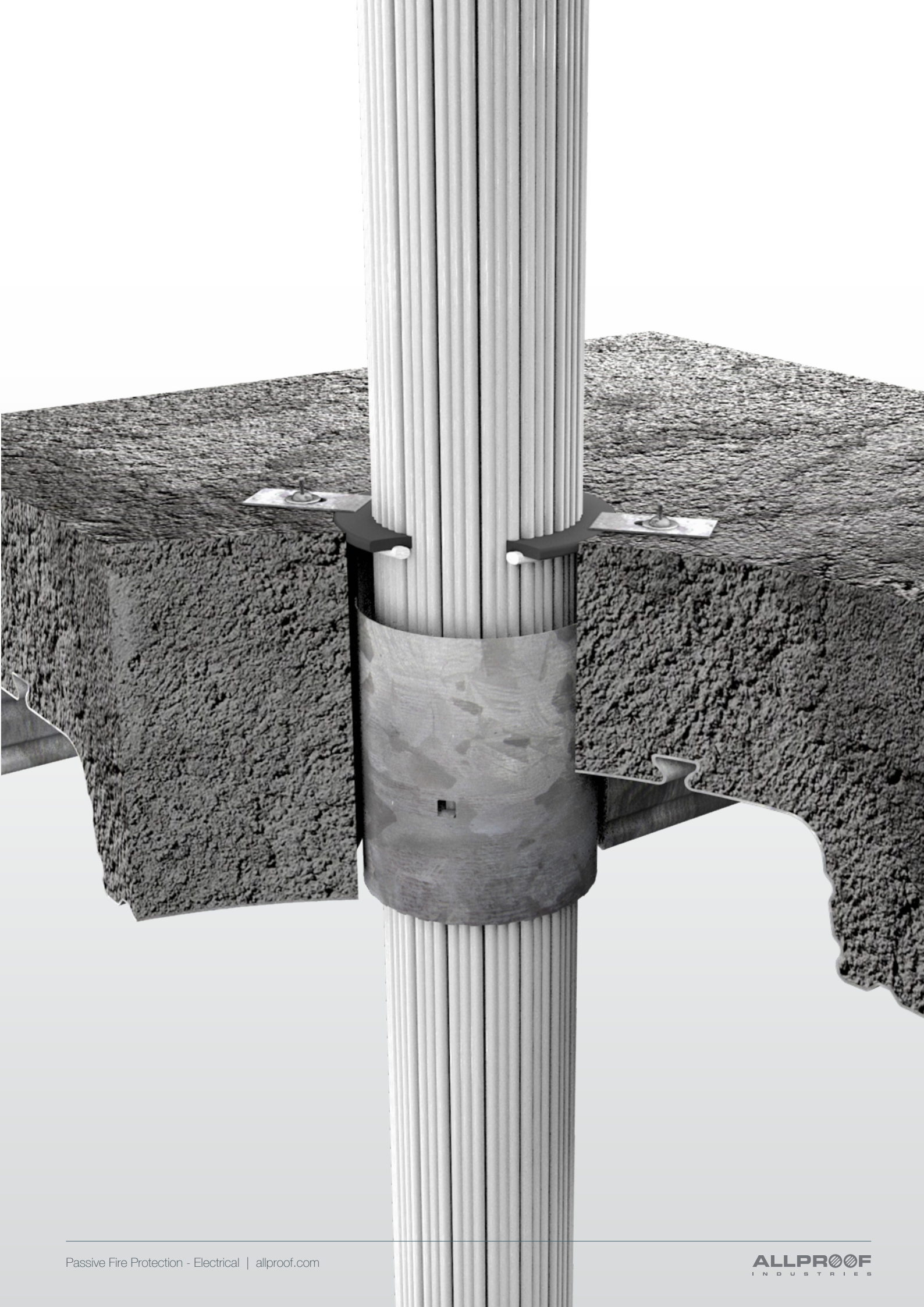


DIFC COLLAR DIMENSIONS:

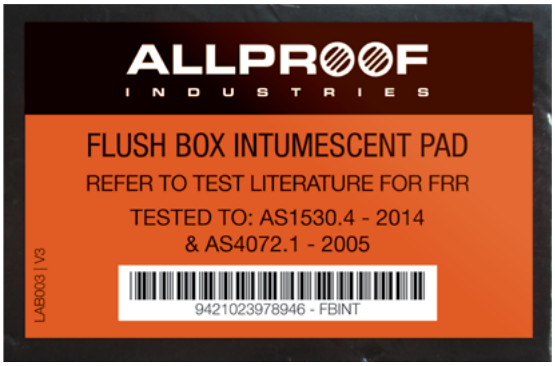
CODE	OUTER DIAMETER (A)	INNER DIAMETER (B)	CYLINDER LENGTH (C)	MIN - MAX DEPTH (D)
FLOOR DEPTHS UPTO 210MM				
DIFC32 X210	48	35	130	130 - 210
DIFC40 X210	66	53	130	130 - 210
DIFC50 X210	79	66	130	130 - 210
DIFC65 X210	92	78	130	130 - 210
DIFC80 X210	106	92	130	130 - 210
DIFC100 X210	131	118	130	130 - 210
DIFC125 X210	154	133	130	130 - 210
DIFC150 X210	187	161	130	130 - 210







FBINT



*Flush box not included.

Flush Box Intumescent Pads are designed to be installed into metal flush boxes installed in hollow fire rated walls.

SUITABLE FOR FITTING TO:

> Plasterboard walls

FEATURES:

> Totally unaffected by water
> Low profile pad with minimal impact on space
> Easy to install

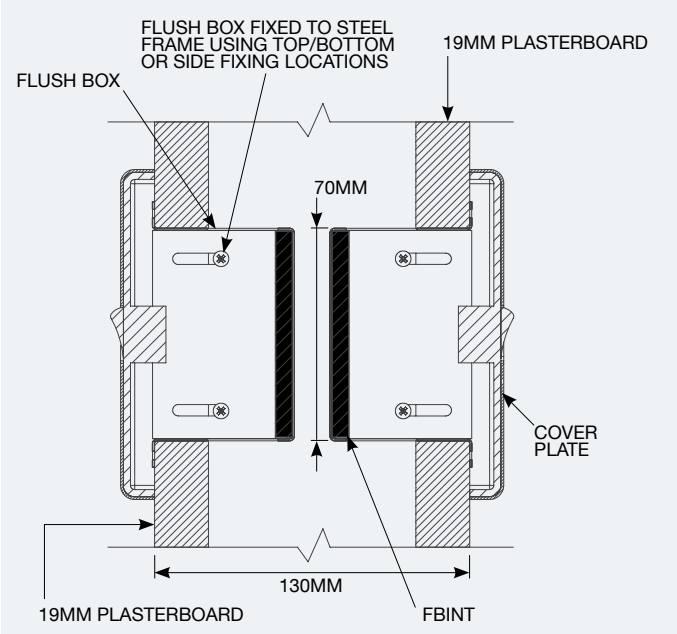
INSTALLATION INSTRUCTIONS:

1. Fix flush box to framing and to relevant detail (opposite).
2. Firmly insert FBINT with adhesive against back of flush box.
3. Finish installation of wiring and fix face plate.

PLASTERBOARD WALL TEST RESULTS:

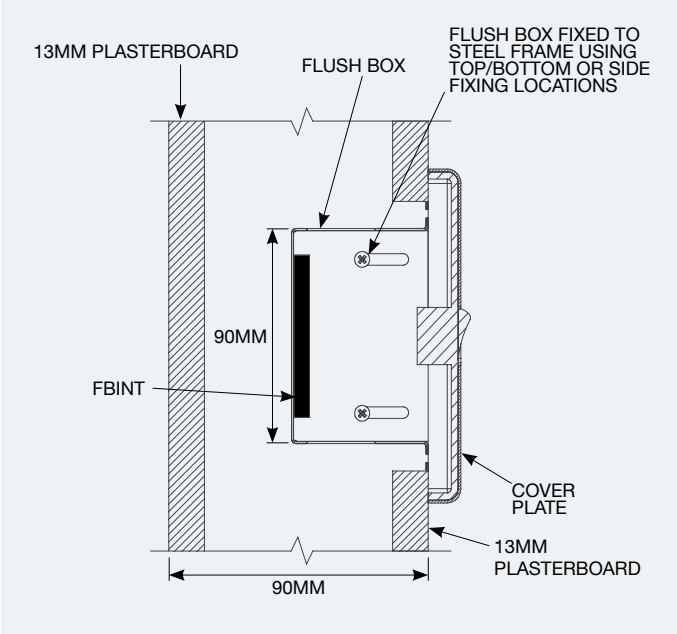
FLUSH BOX	PRODUCT CODE	INSTALL	PLASTERBOARD WALL FRL*	REPORT NUMBER
13MM PLASTERBOARD WALL				
Double Flush Box - 100x75x48mm	FBINT	Detail 2	-/60/60	13509-001
Single Flush Box - 95x50x48mm	FBINT	Detail 2	-/60/45	180434
13MM STANDARD NON-FIRE RATED PLASTERBOARD WALL				
Double Flush Box - 100x75x48mm	FBINT	Detail 2	-/30/30	13088-001
19MM PLASTERBOARD WALL				
Single Flush Box - 75x50x52mm	FBINT	Detail 1	-/120/90	4101

DETAIL 1:



Detail 1: Tested as a back to back installation on a hollow wall system comprised of a 92mm steel frame and 1 x layer of 19mm fire rated plasterboard on each side of the frame (total wall thickness of 130mm). Flush box fixed to the frame using top/bottom or side fixing locations with an Allproof FBINT pad installed on internal rear surface.

DETAIL 2:



Detail 2: Tested using a 64mm wide steel stud with a single layer of 13mm plasterboard on each side of the frame. A total wall thickness of 90mm. Flush box fixed to the frame using top/bottom or side fixing locations with an Allproof FBINT pad installed on internal rear surface.

ALLPROOF
INDUSTRIES

PASSIVE FIRE PRODUCTS DESIGNED AND TESTED FOR THE REAL WORLD

PASSIVE FIRE PROTECTION SYSTEMS ELECTRICAL

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