

# FireCase

## Identification

Protect structural steel columns and beams with our frameless encasement systems.

FireCase is a frameless structural steel encasement system that provides fire protection to a wide range of universal steel column, joists and beam sizes - both solid and castellated. Installation is quick and easy, owing to the ability to fix Glasroc® F FireCase together without the need for additional framing. The Glasroc F FireCase lining provides a smooth surface which does not rely on finishes to achieve the specified performance.

Passive fire protection is a vital component of any fire safety strategy. It safeguards people's lives and limits the financial impact of damage to buildings and their contents. The protection of the superstructure from fire is especially important, as the whole building's stability depends on its integrity being maintained.

Our steel protection systems provide fire protection to structural steel columns, joists and beam sizes - both solid and castellated - and are able to accept standard methods of finishing; tape and joint or Thistle skim plaster, to match surrounding elements. An aesthetic finish is not necessary with the FireCase system to maintain its fire performance.

This system can be skim finished with ThistlePro® PureFinish which contains ACTIVair®. ACTIVair makes indoor air healthier by eliminating up to 70% of formaldehyde present in indoor air.



### Why specify FireCase?

Frameless encasement system that minimises the space needed to provide fire protection to structural steel

FireCase systems give your building the protection of our **SpecSure®** lifetime warranty

Fire protection performance from 30 - 120 mins to a wide range of universal steel beam, column and joist sizes

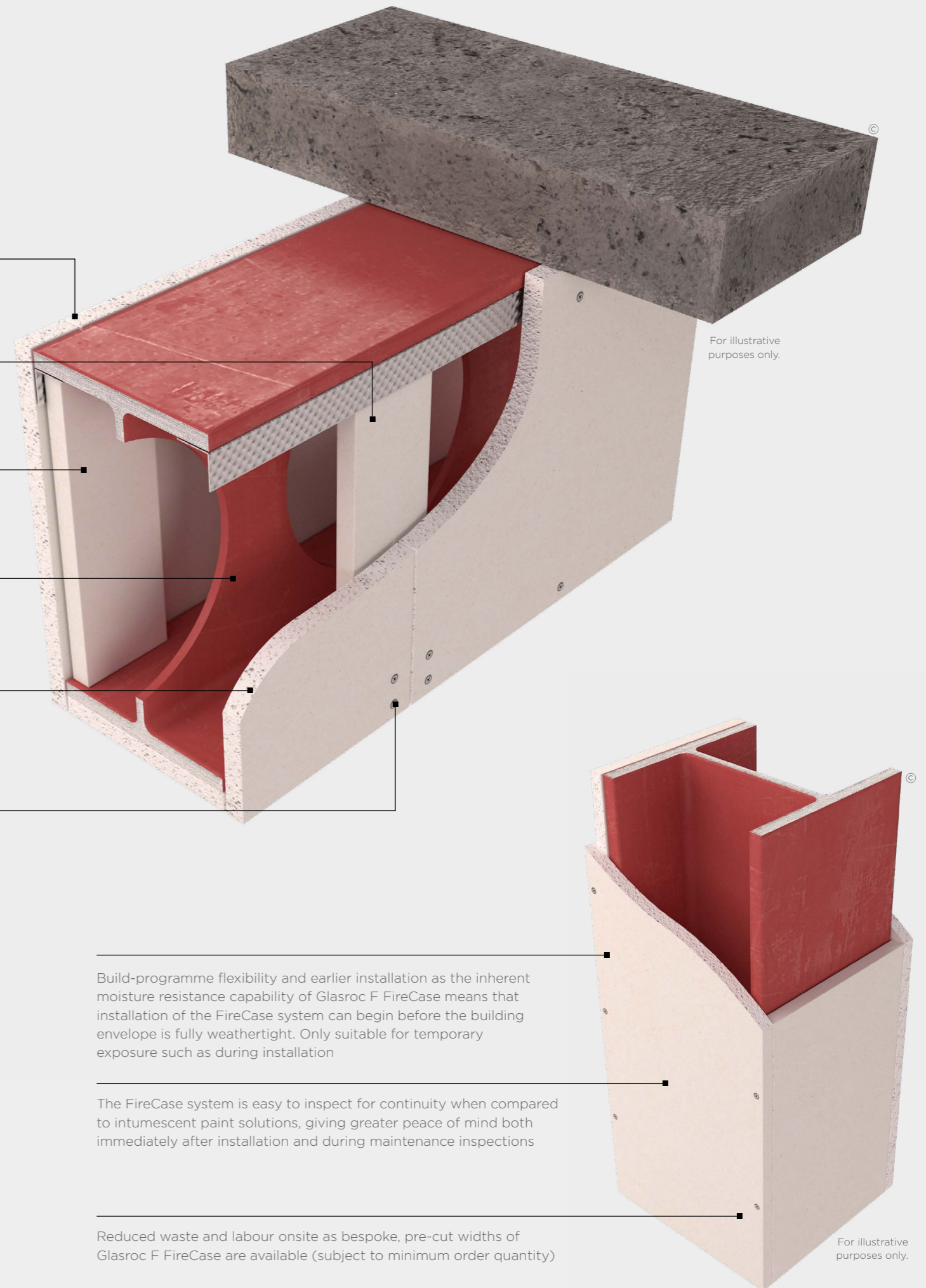
Tested fire protection performance on both solid and castellated steel beams

Acoustic and thermal insulation can be maintained with detailing of abutments between GypWall partition systems and FireCase encasements

Reduced installation time as Glasroc F FireCase boards can be screw-fixed together without the need for additional framing



There are specifications within this system that qualify for our **SpecSure®** warranty. For more information see [british-gypsum.com/specsure](http://british-gypsum.com/specsure)



For illustrative purposes only.

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Build-programme flexibility and earlier installation as the inherent moisture resistance capability of Glasroc F FireCase means that installation of the FireCase system can begin before the building envelope is fully weathertight. Only suitable for temporary exposure such as during installation

The FireCase system is easy to inspect for continuity when compared to intumescent paint solutions, giving greater peace of mind both immediately after installation and during maintenance inspections

Reduced waste and labour onsite as bespoke, pre-cut widths of Glasroc F FireCase are available (subject to minimum order quantity)

# FireCase

## Design considerations

FireCase encasement systems are suitable for protecting structural steel sections with a section factor  $A/V$  ( $H_p/A$ ) up to  $260 \text{ m}^{-1}$ . Calculations are based on box protection to three or four sides, as required.

They will also protect universal column and beam sections described in BS EN 10365:2017, as well as many types of joist section.

### Lining selection

Follow the procedure below to determine the required board thickness:

1. Ascertain whether protection is needed on three or four sides of the section.
2. Find out what period of fire protection is required.
3. Refer to the White Book Specification Selector on [british-gypsum.com](http://british-gypsum.com) to determine the required board thickness. Obtain the section factor of the steel using table 2 below, or refer to the ASFP Yellow Book.
4. For castellated sections follow the above procedure, but add 20% to the lining thickness, and scale this up to the next board thickness. Claims compliant with Yellow Book 5th Edition 20% rule (YB4.2) assessment method.

### Partition to structural steelwork junctions

When designing room layouts, separated by sound insulating walls abutting structural steelwork, consider the potential loss of acoustic performance through the steelwork. Refer to Building acoustics, in system design principles on [british-gypsum.com](http://british-gypsum.com)

Figures 9 to 12 show typical details for partitions specified with a requirement of  $R_w$  50dB. Although these details refer to structural steel column abutments, similar principles apply when abutting structural steel beams. We recommend all design details are checked by an Acoustic Consultant, particularly the performance via the flanking structure.

### Finishing

Treat Glasroc F FireCase joints using Gyproc Joint Tape embedded in Gyproc QuickSand. Reinforce external angles or corners with Gyproc Drywall Metal Angle Bead, embedded in Gyproc QuickSand. Reinforce joints and apply Thistle BoardFinish, ThistlePro DuraFinish or Thistle MultiFinish if a plaster finish is needed. Other jointing materials or systems may not be compatible with Glasroc F FireCase board.

### Looking for performance selection tables?

We're committed to providing technical information that is transparent, clear, accurate, and always up-to-date. So you can rely on it when making decisions at any stage of the design, specification, installation, use, maintenance and disposal process.

All performance data is now available to view and download on our website.

[british-gypsum.com/firecase](http://british-gypsum.com/firecase)

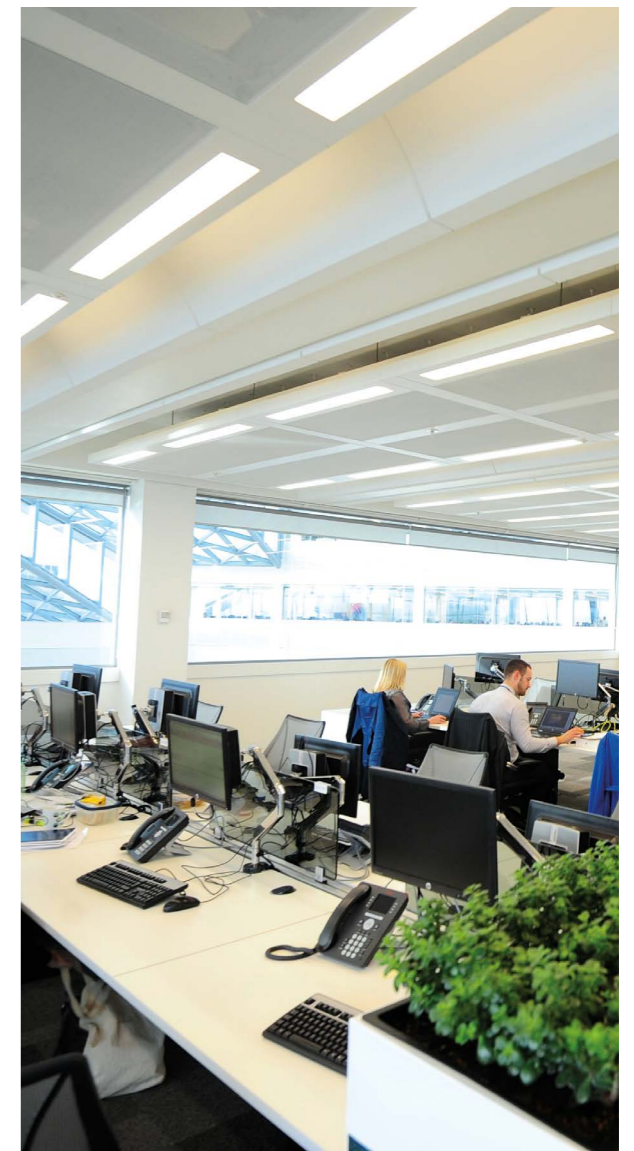


Table 1: Glasroc F FireCase fixings

Board thickness (mm)	Min. fixing length	
	Board-to-board fixing	Board-to-metal fixing
15	Glasroc F FireCase Screws 40 mm	Glasroc F FireCase Screws 40 mm
20	Glasroc F FireCase Screws 50 mm	Glasroc F FireCase Screws 40mm
25	Glasroc F FireCase Screws 58 mm	Glasroc F FireCase Screws 40 mm
30	Glasroc F FireCase Screws 70 mm	Glasroc F FireCase Screws 40 mm
15 + 20	Glasroc F FireCase Screws 40 mm and 50 mm	Glasroc F FireCase Screws 40 mm and 50 mm
25 + 25	Glasroc F FireCase Screws 58 mm	Glasroc F FireCase Screws 40 mm and 70 mm

### Important notes

- Jointing and finishing is not a requirement of meeting the specified fire protection.
- Ensure that fascia board-to-soffit board edge fixings are secured into the centre of the Glasroc F FireCase soffit board to meet the specified fire protection.
- Board joints/abutments must be a flush fit.
- All joints should be staggered by a minimum 600 mm.
- Where steel section web dimensions exceed 600mm, additional support framework will be needed. Please refer to Technical Support on [british-gypsum.com](http://british-gypsum.com) for guidance.
- Where partitions abut a FireCase column or beam encasement and maintaining acoustic performance is important, use either:
  - Isover insulation within the web space. Refer to construction details 12 and 13 on pages 3.15 and 3.16, or
  - Additional framing, Isover insulation and Gyproc plasterboard lining. Refer to construction detail 14 on page 3.16.
- Structural steel beam format such as solid or castellated, needs to be taken into account when specifying to required performance requirements.
- For the 25 mm + 25 mm Glasroc F FireCase beam specification, fix continuous lengths of Gypframe FEA1 Steel Angle to the underside of the upper beam flange each side or background using fire resistant fixings at 300 mm centres.
- For further information please refer to Technical Support on [british-gypsum.com](http://british-gypsum.com)



# FireCase

## Design considerations (continued)

Table 2: Section factor A/V (Hp/A) of universal beams

Beam/column/ joist dimension orientation			A / V values		Beam/column/ joist dimension orientation			A / V values		
			3 sided encasement	4 sided encasement				3 sided encasement	4 sided encasement	
D	B	Mass/m	m <sup>-1</sup>	m <sup>-1</sup>	D	B	Mass/m	m <sup>-1</sup>	m <sup>-1</sup>	
610*	305	238	50	60	406	178	85	95	110	
	305	179	70	80		178	74	105	125	
	305	149	80	95		178	67	115	140	
	229	140	80	95		178	60	130	155	
	229	125	90	105		178	54	145	170	
	229	113	100	115		140	53	140	160	
	229	101	110	130		140	46	160	185	
	178	100	110	125		140	39	190	215	
	178	92	120	135		356	171	67	105	125
	178	82	130	150			171	57	120	145
533	312	273	40	50		171	51	135	160	
	312	219	50	65		171	45	150	180	
	312	182	60	75		127	39	165	195	
	312	151	75	90		127	33	195	225	
	210	138	75	85	305	165	54	115	140	
	210	122	85	95		165	46	135	160	
	210	109	95	110		165	40	150	185	
	210	101	100	115		127	48	120	145	
	210	92	110	125		127	42	140	160	
	210	82	120	140		127	37	155	180	
165	85	115	130	102		33	175	200		
165	75	130	145	102		28	200	230		
165	66	145	165	102		25	225	255		
457	191	161	60	65		254	146	43	120	150
	191	133	70	80	146		37	140	170	
	191	106	85	100	146		31	165	200	
	191	98	90	105	102		28	175	200	
	191	89	100	115	102		25	190	225	
	191	82	105	125	102		22	220	255	
	191	74	115	135	203	133	30	145	180	
	191	67	130	150		133	25	170	210	
	152	82	105	120		102	23	175	205	
	152	74	115	130	178	102	19	190	230	
	152	67	125	145		152	89	16	195	235
	152	60	140	160			127	76	13	200
	152	52	160	180						

\* Where steel section web dimensions exceed 600mm, additional support framework will be needed. Please refer to Technical Support on british-gypsum.com for guidance.

Table 3: Section factor A/V (Hp/A) of universal columns

Beam/column/ joist dimension orientation			A / V values		
			3 sided encasement	4 sided encasement	
D	B	Mass/m	m <sup>-1</sup>	m <sup>-1</sup>	
356	406	634	15	20	
	406	551	20	25	
	406	467	20	30	
	406	393	25	35	
	406	340	30	35	
	406	287	30	45	
	406	235	40	50	
	368	202	45	60	
	368	177	50	65	
	368	153	55	75	
305	368	129	65	90	
	305	283	30	40	
	305	240	35	45	
	305	198	40	50	
	305	158	50	65	
	305	137	55	70	
	305	118	60	85	
	305	97	75	100	
	254	254	167	40	50
		254	132	50	65
254		107	60	75	
254		89	70	90	
254		73	80	110	
203	203	127	45	55	
	203	113	45	60	
	203	100	55	70	
	203	86	60	80	
	203	71	70	95	
	203	60	80	110	
	203	52	95	125	
	203	46	105	140	
152	152	51	75	100	
	152	44	85	115	
	152	37	100	135	
	152	30	120	160	
	152	23	155	210	

# FireCase

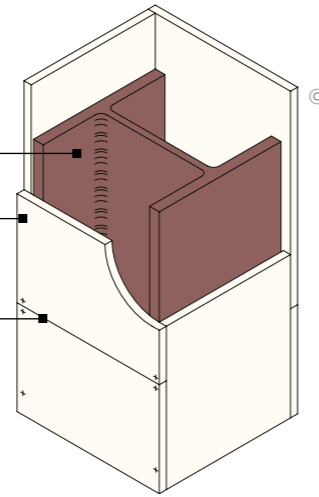
## Construction details

### 1. Four-sided column encasement Single layer

Structural steel

Glasroc F FireCase fixed together with  
Glasroc F FireCase Screws

Board joints staggered by min. 600 mm  
between adjacent sides



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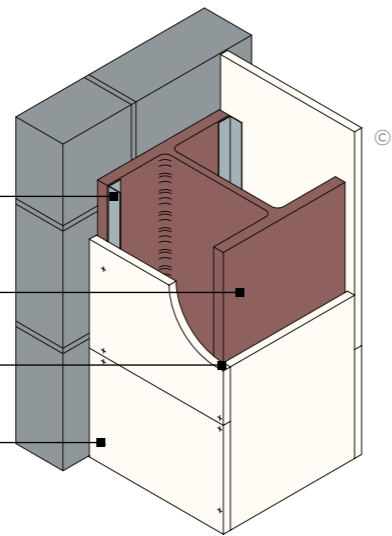
### 2. Three-sided column encasement Incorporating steel angles - single layer

Gypframe FEA1 Steel Angle suitably fixed  
to column flange at 600 mm centres

Structural steel

Board joints staggered by min. 600 mm  
between adjacent sides

Glasroc F FireCase fixed together with  
Glasroc F FireCase Screws

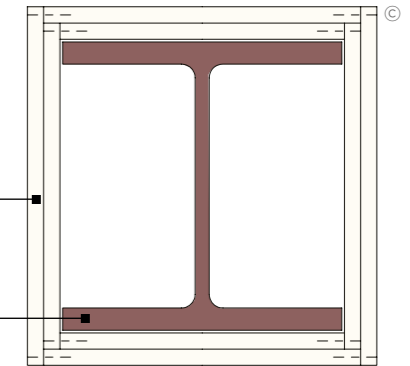


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### 3. Four-sided column encasement Double layer

Glasroc F FireCase fixed together with  
Glasroc F FireCase Screws

Structural steel



For illustrative purposes only.

### 4. Three-sided beam encasement for solid and castellated beams Incorporating steel angles - single layer

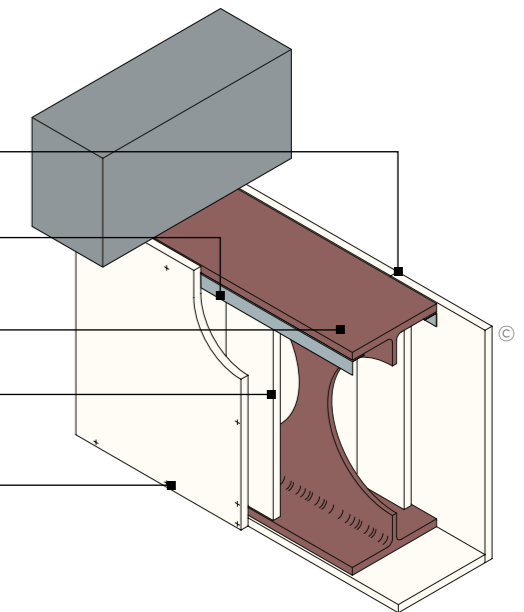
Board joints staggered by min. 600 mm  
between adjacent sides

Gypframe FEA1 Steel Angle suitably fixed  
to beam flange at 600 mm centres

Structural steel

60mm wide Glasroc F FireCase backing strip  
(for single layer systems only)

Glasroc F FireCase fixed together  
with Glasroc F FireCase Screws.  
Ensure edge fixings are secured into the  
centre of the Glasroc F FireCase soffit board



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# FireCase

## Construction details

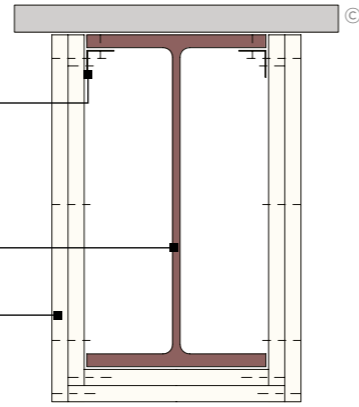
### 5. Three-sided beam encasement

Incorporating steel angles - double layer

Gypframe FEA1 Steel Angle suitably fixed to beam flange at 600 mm centres. For 25 mm + 25 mm Glasroc F FireCase linings, fix the Gypframe FEA1 Steel Angle to the beam at 300 mm centres

Structural steel

Glasroc F FireCase fixed together with Glasroc F FireCase Screws. Ensure edge fixings are secured into the centre of the Glasroc F FireCase soffit board



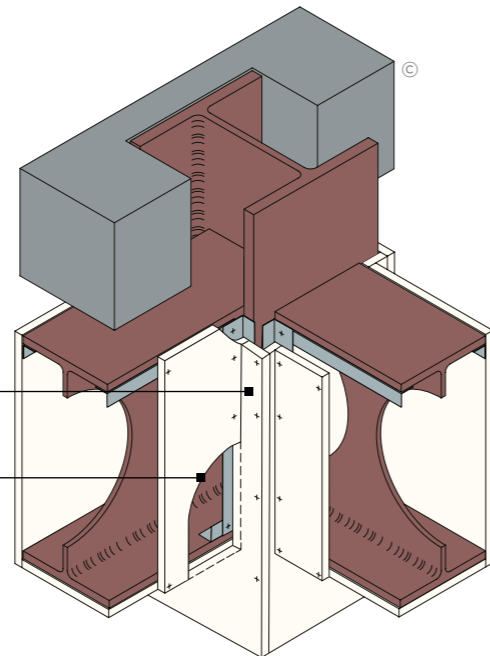
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### 6. Column and beam junction for solid and castellated beams

Incorporating steel angles - single layer

Beam encasement boards butted tight to column encasement

Column encasement boards cut around penetrations



For illustrative purposes only.

### 7. Column encasement and partition junction

BS 5234 Heavy and Severe Duty

FireCase encasement

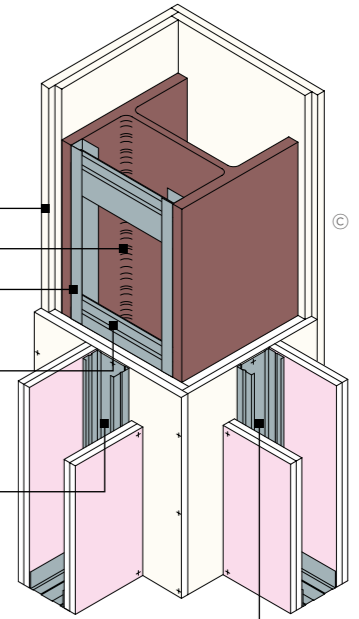
Structural steel

Gypframe MF6 suitably fixed to column flanges at 600 mm centres

Gypframe MF5's at 600 mm (or 300 mm centres for 92 mm and 146 mm studs) fixed both ends into Gypframe MF6 with British Gypsum Wafer Head Drywall Screws

Gypframe 'C' stud suitably fixed through Glasroc F FireCase to Gypframe MF5 sections at 600 mm centres (in two lines staggered by 300 mm for 92 mm and 146 mm studs)

Gypframe 'C' Stud/Channel suitably fixed through Glasroc F FireCase to structural steel at 600 mm centres (in two lines staggered by 300 mm for 92 mm or 146 mm studs)



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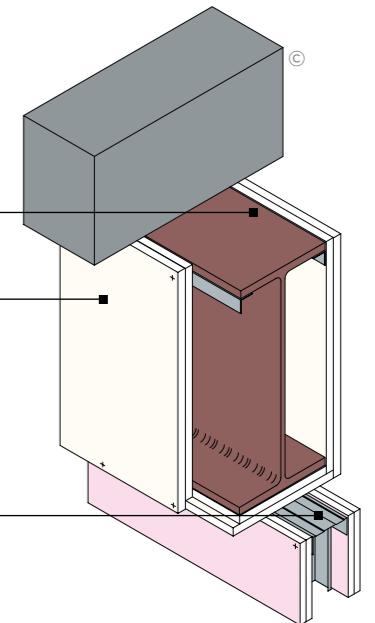
### 8. Beam encasement and partition junction

BS 5234 Heavy and Severe Duty

Structural steel

FireCase encasement

Gypframe head channel fixed through Glasroc F FireCase to beam at 600 mm centres (in two lines staggered by 300 mm for 92 mm or 146 mm studs)

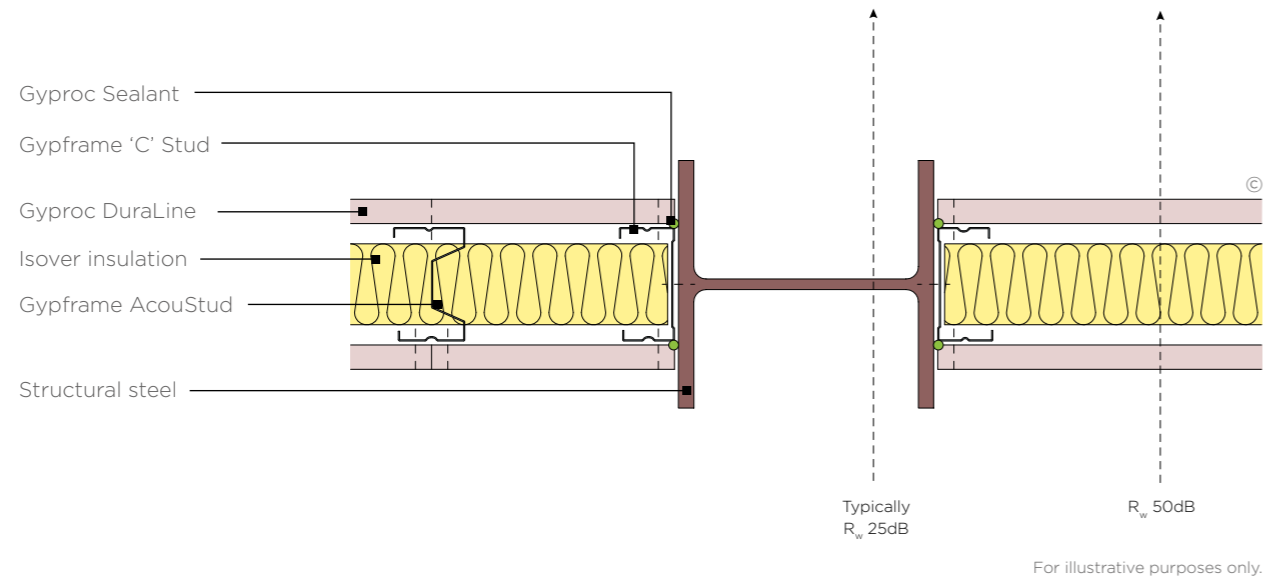


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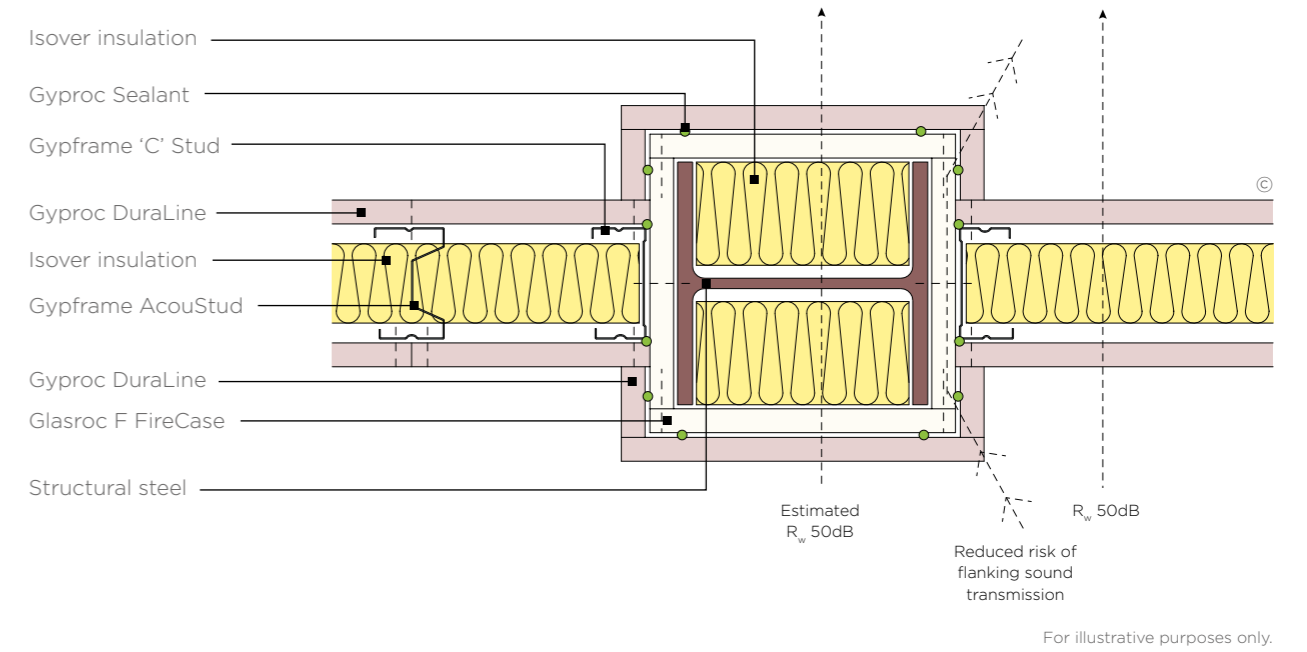
# FireCase

## Construction details

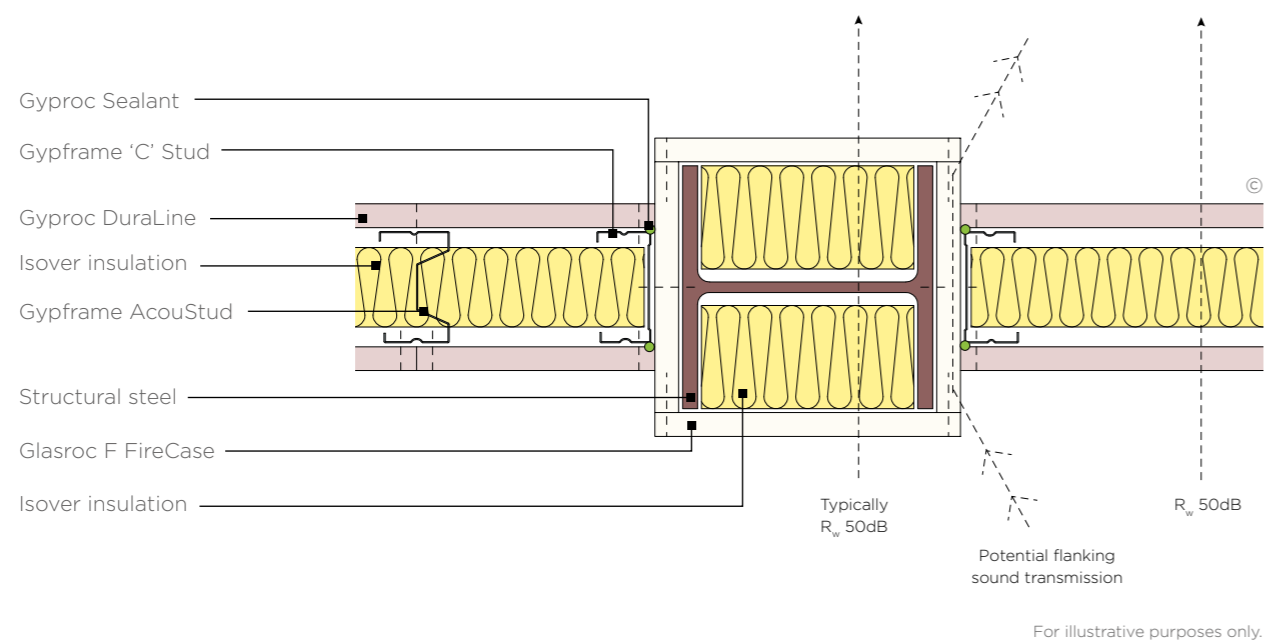
### 9. Exposed/painted steel column



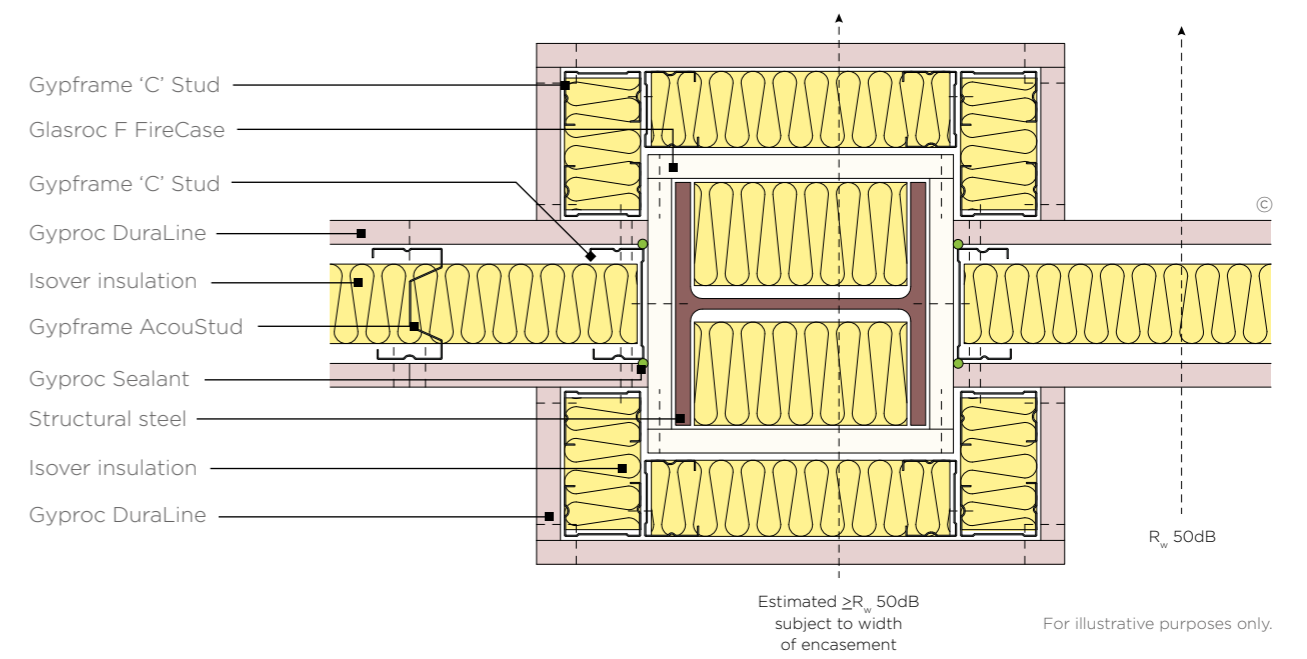
### 11. Encased steel column with additional plasterboard lining



### 10. Encased steel column



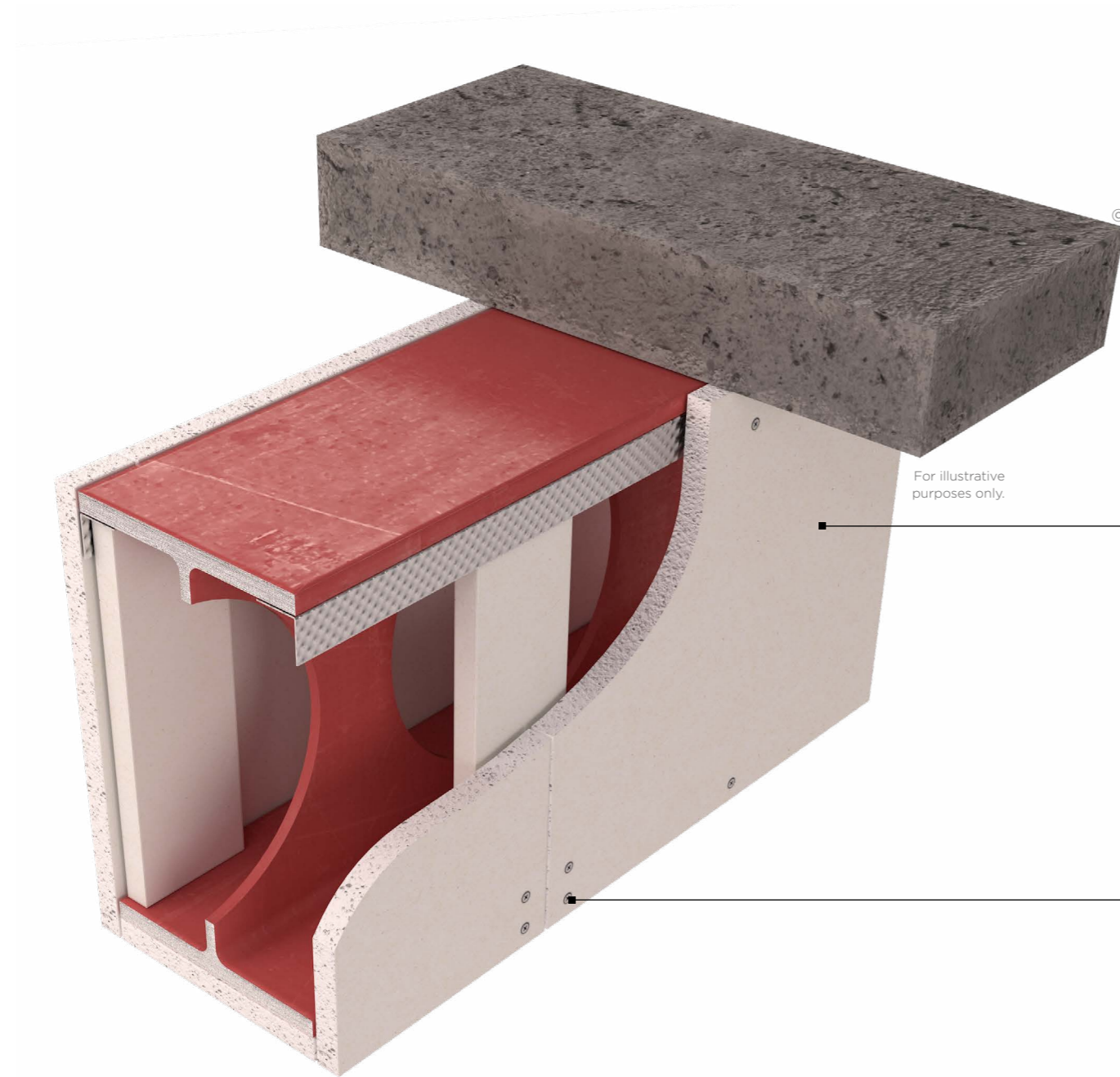
### 12. Encased steel column with additional framing, insulation and plasterboard lining



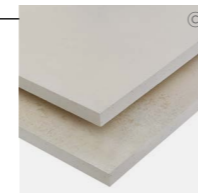
# FireCase

## System components

Protect structural steel columns and beams with our frameless encasement systems.

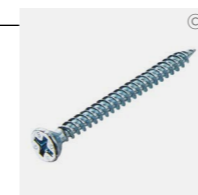


For illustrative purposes only.



### Glasroc F FireCase

Glasroc F FireCase is a high performance, Class A1, non-combustible glass reinforced gypsum board. Use it as part of the FireCase frameless structural steel encasement system. This product is also suitable for installation in semi-exposed areas before the building envelope is complete.



### Glasroc F FireCase Screws

Corrosion resistant self-tapping steel screws with a unique countersunk cross head design. Specifically designed for board-to-board fixing of Glasroc F FireCase board in the FireCase system. The unique head design countersinks into the board allowing easy finishing.



There are specifications within this system that qualify for our **SpecSure**® warranty. For more information see [british-gypsum.com/specsure](https://british-gypsum.com/specsure)

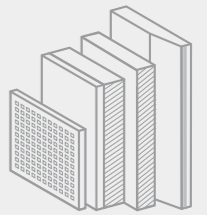
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© British Gypsum, 2025.

Careful product choice is central to maintaining system integrity, performance requirements as well as eligibility for our **SpecSure**® warranty. **Ensure an optimum standard of build by considering...**

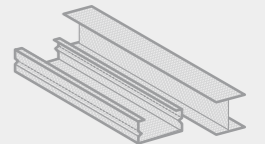
### What are you fixing?

Our specialist, high-performance gypsum boards provide excellent protection for structural steel columns and beams. See [british-gypsum.com](https://british-gypsum.com) for more details.



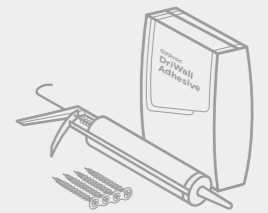
### What are you fixing to?

Our Gyframe metal profiles provide a strong and versatile structure for protective encasement systems. See [british-gypsum.com](https://british-gypsum.com) for more details.



### What are you fixing with?

Our fixings offer guaranteed compatibility with our systems, and are rigorously tested to meet the highest quality standards. See [british-gypsum.com](https://british-gypsum.com) for more details.



**Where defined performance requirements are required see our White Book Specification Selector on [british-gypsum.com](https://british-gypsum.com)**

# FireCase Installation

The information below is intended to be a basic description of how the system is built.



**1** For two or three-sided protection to steel beams or columns, secure Gypframe FEA1 Steel Angles to both sides of the wall / soffit flange using appropriate fixings.



**2** Cut Glasroc F FireCase boards to width and use Glasroc F FireCase Screws to fix to the Gypframe FEA1 Steel Angles.



**3** Where Glasroc F FireCase boards abut fix together with Glasroc F FireCase Screws. For four-sided protection to steel columns, Glasroc F FireCase boards are positioned and fixed board to board using Glasroc F FireCase Screws. Ensure that board-to-board edge fixings are secured into the centre of the Glasroc F FireCase soffit board.



**4** To seal the joints of single layer steel beam encasements, install additional strips of Glasroc F FireCase behind the ends of the fascia board.