

# GypLyner Encase

## Identification

Protect structural steel columns and beams from fire for up to 120 minutes with our metal framed encasement system.

GypLyner Encase provides fire protection to all universal column and beam sections with flange thicknesses between 6mm and 28mm. It also protects many joist sections and portal frames. The system can be used in any type of building that requires structural steel encasement.

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. Protecting the superstructure from fire is especially important, as the whole building's stability depends on its integrity.

GypLyner Encase is quick and easy to install due to the simple clip fixings that secure the framing sections. To achieve the specified performances, the system should be finished using either one of our Thistle or ThistlePro plasters, or Gyproc jointing products.

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 GypLyner Encase?

Protects structural steel beams, columns and joists from fire for up to 120 minutes

Comes with our **SpecSure®** lifetime warranty

Offers excellent acoustic and thermal insulation with the detailing of abutments between GypWall partition systems and GypLyner Encase encasements

Reduces sound transmission as boards are fixed into a framework rather than directly into the steel beam or column

Quick and easy to install due to a simple, clip-on framing system

Accommodates structural steelwork misalignment by ensuring the lining is straight and true

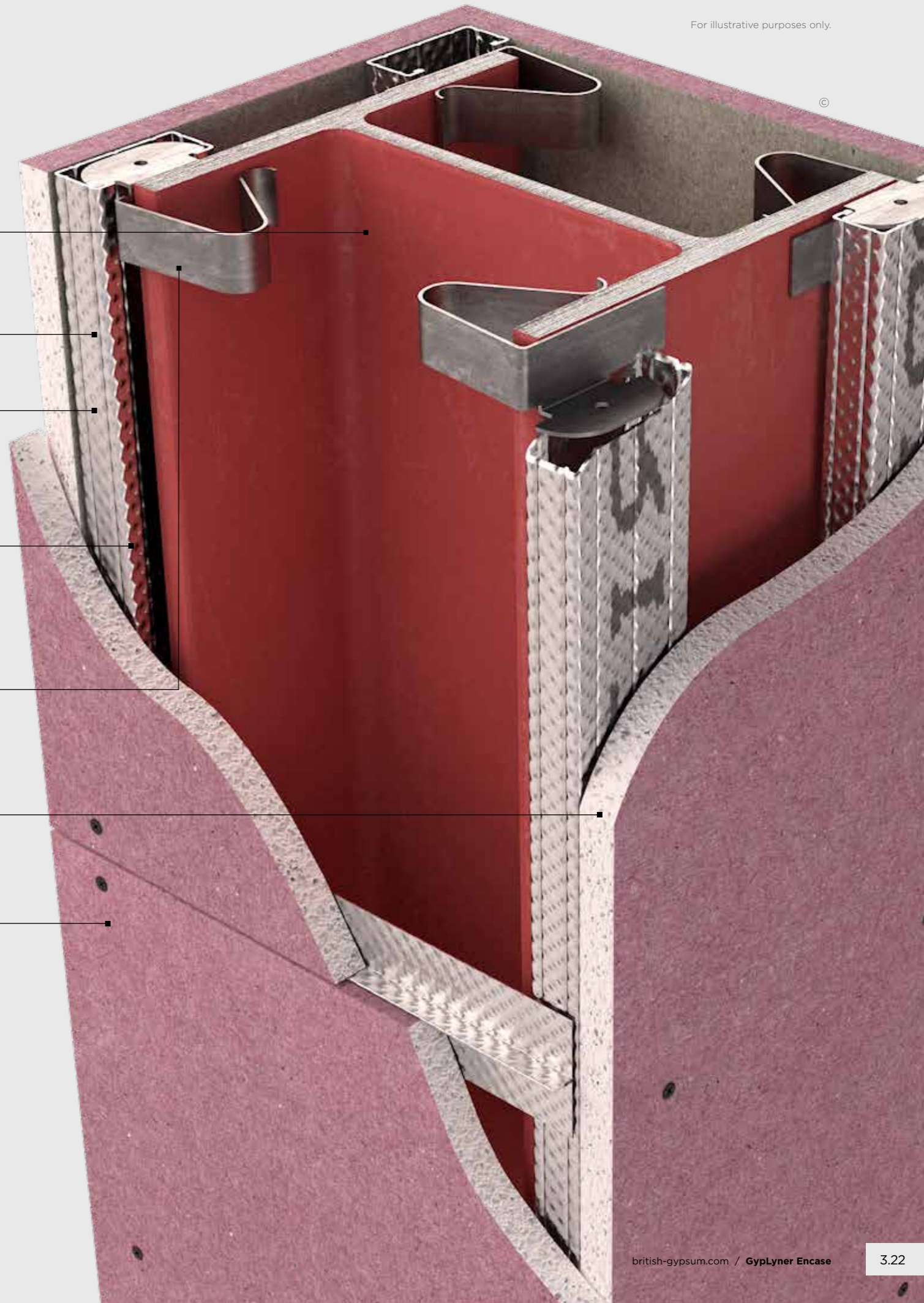
Makes damage to the system easily identifiable when compared with other fire protection systems such as intumescent paint



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

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# GypLyner Encase

## Design considerations

GypLyner Encase 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 needed.

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

### Building design

GypLyner Encase comprises Gypframe GL10 GypLyner Steel Framing Clips, located on steel sections at 800mm centres, to support Gypframe GL1 Lining Channels.

### 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.

### Size of encasement

Determine the minimum dimension of encasement required for three or four-sided protection from Table 1 opposite.

### Partition fixing

Partitions and wall linings can be fixed through to the metal framework.

### Water vapour resistance

Provide vapour control to encasements which form part of an external wall lining by using Gyproc FireLine Duplex. Vapour resistance can be further improved by treating the lining surface with two coats of Gyproc Drywall Sealer.

### 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/gyplyner-encase](http://british-gypsum.com/gyplyner-encase)



### Important notes

Where the steel section web or flange dimension exceeds 600mm, additional support will be required for the cladding. Install noggings of Gypframe GL1 Lining Channel at 600mm centres between adjacent Gypframe GL1 Lining Channels to form supplementary framing. Stagger joints by a minimum of 600mm.

Table 1: Min. dimension of encasements required for three- or four-sided protection

Depth	Calculation
Three-sided encasements	Overall steel section depth + 25mm + the thickness of lining board
Four-sided encasements	Overall steel section depth + 50mm + twice the thickness of lining board
Width	Calculation
Three- and four-sided encasements	Overall steel section width + 20mm + twice the thickness of lining board



# GypLyner Encase

## Design considerations (continued)

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

Universal beams					Universal beams				
serial size of steel (mm x mm x kg/m)			A / V values		serial size of steel (mm x mm x kg/m)			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>
1016	305	487	40	45	457	191	161	60	65
	305	438	40	50		191	133	70	80
	305	393	45	55		191	106	85	100
	305	349	50	60		191	98	90	105
	305	314	55	65		191	89	100	115
	305	272	65	75		191	82	105	125
	305	249	70	80		191	74	115	135
	305	222	80	90		191	67	130	150
914	419	388	45	55	406	152	82	105	120
	419	343	50	60		152	74	115	130
	305	289	60	65		152	67	125	145
	305	253	65	75		152	60	140	160
	305	224	75	85		152	52	160	180
	305	201	80	95		178	85	95	110
838	292	226	70	80	178	74	105	125	
	292	194	80	90	178	67	115	140	
	292	176	90	100	178	60	130	155	
	267	197	70	85	178	54	145	170	
762	267	173	80	95	140	53	140	160	
	267	147	95	110	140	46	160	185	
	267	134	105	120	140	39	190	215	
	254	170	75	90	356	171	67	105	125
254	152	85	95	171		57	120	145	
254	140	90	105	171		51	135	160	
254	125	100	115	171		45	150	180	
610	305	238	50	60	127	39	165	195	
	305	179	70	80	127	33	195	225	
	305	149	80	95	305	165	54	115	140
	229	140	80	95		165	46	135	160
	229	125	90	105		165	40	150	185
	229	113	100	115		127	48	120	145
	229	101	110	130		127	42	140	160
	178	100	110	125		127	37	155	180
	178	92	120	135		102	33	175	200
	178	82	130	150		102	28	200	230
533	312	273	40	50		102	25	225	255
	312	219	50	65		254	146	43	120
	312	182	60	75	146		37	140	170
	312	151	75	90	146		31	165	200
	210	138	75	85	102		28	175	200
	210	122	85	95	102		25	190	225
	210	109	95	110	102		22	220	255
	210	101	100	115	203	133	30	145	180
	210	92	110	125		133	25	170	210
	210	82	120	140		102	23	175	205
	165	85	115	130		178	102	19	190
	165	75	130	145	152	89	16	195	235
	165	66	145	165	127	76	13	200	245

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

Universal beams				
serial size of steel (mm x mm x kg/m)			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	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	167	40	50
	254	132	50	65
	254	107	60	75
203	254	89	70	90
	254	73	80	110
	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

### Important note

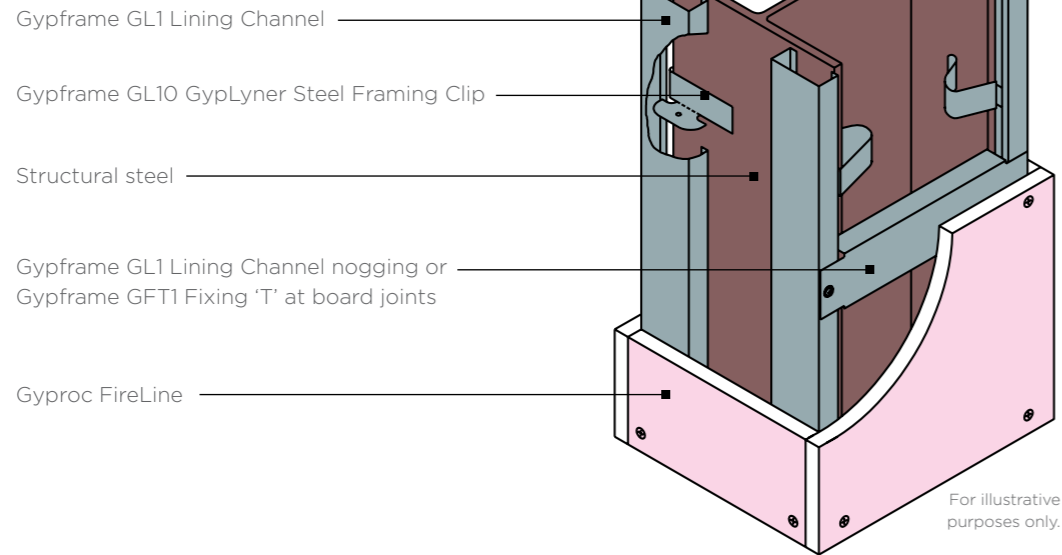
GypLyner Encase provides fire protection to all universal column and beam sections with flange thicknesses between 6mm and 28mm.

# GypLyner Encase

## Construction details

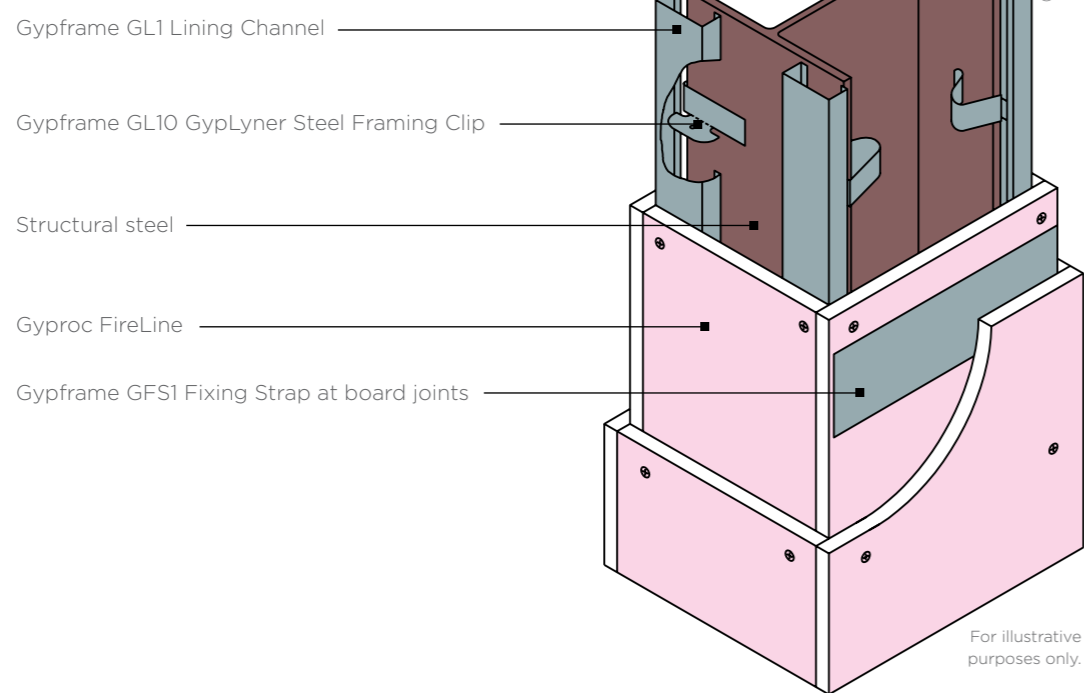
### 1. Four-sided column encasement

Single layer



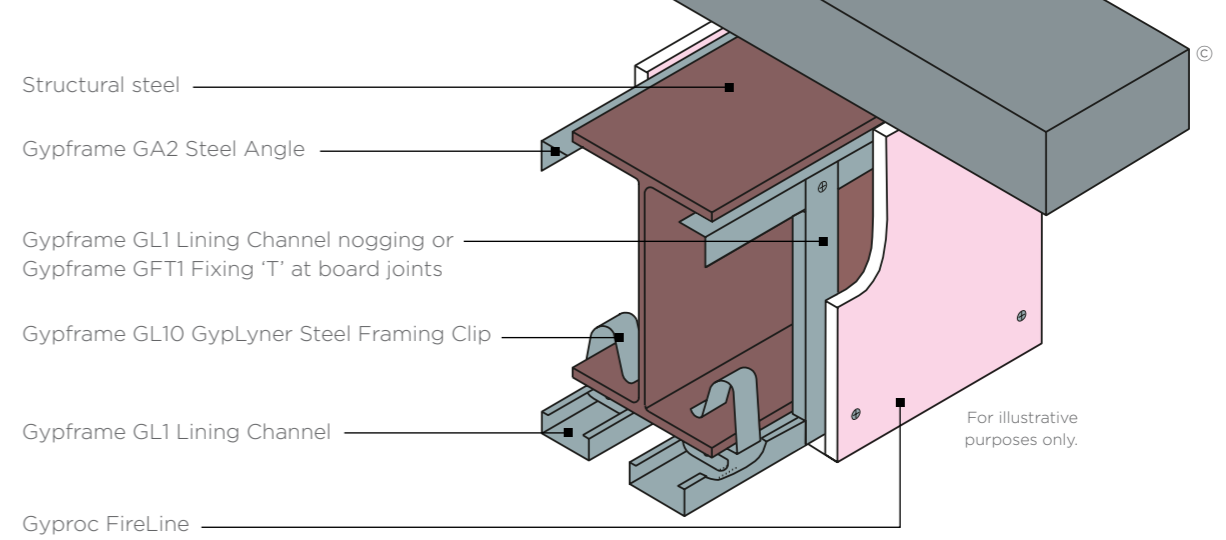
### 2. Four-sided column encasement

Double layer



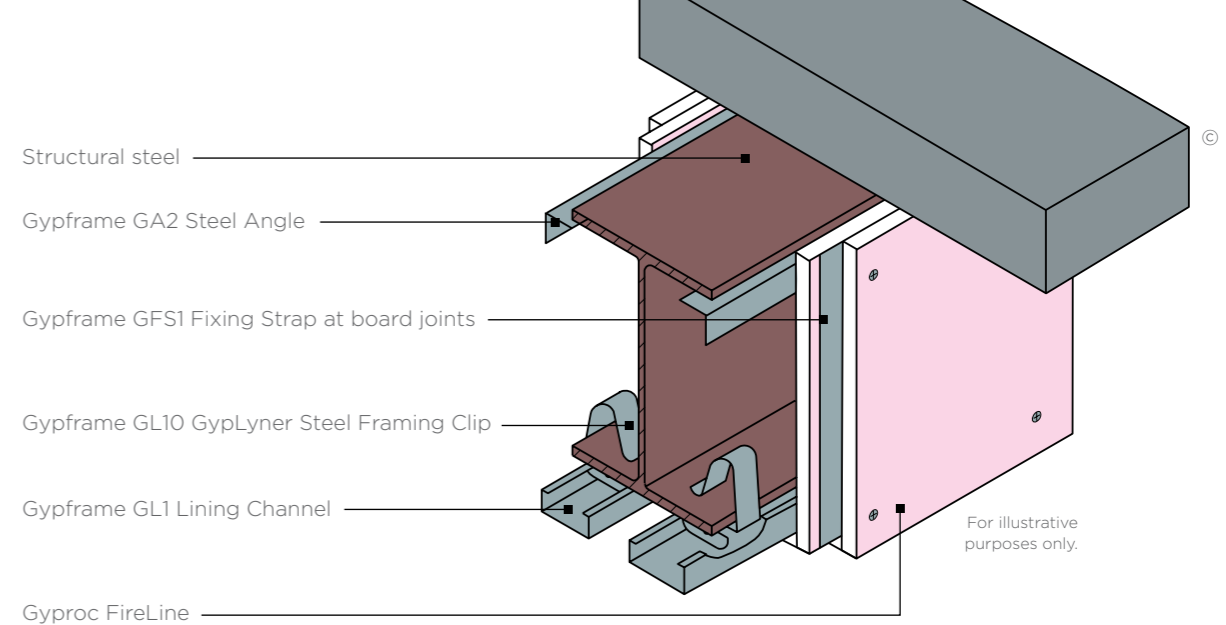
### 3. Three sided beam encasement

Single layer



### 4. Three sided beam encasement

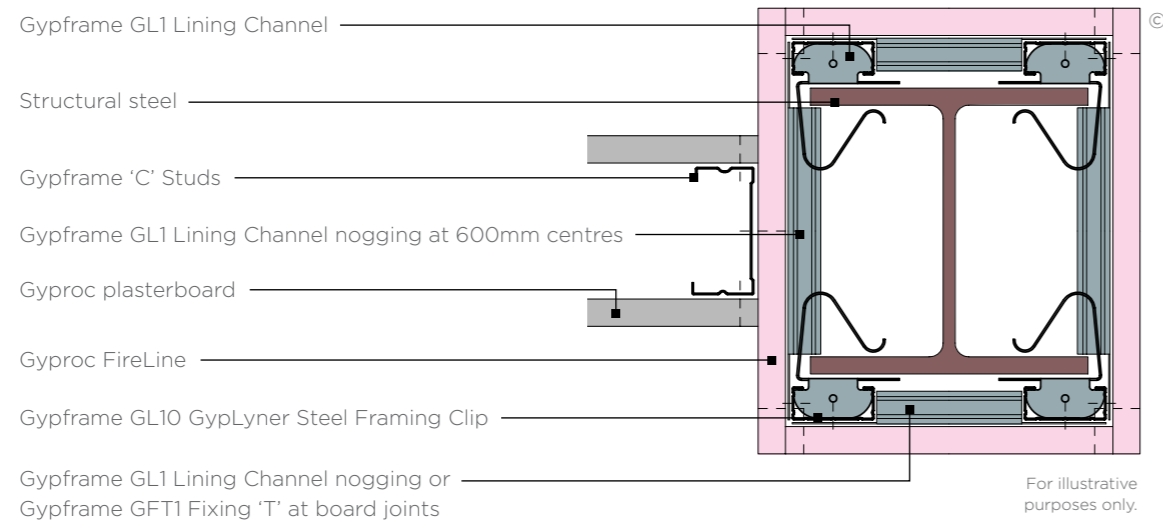
Double layer



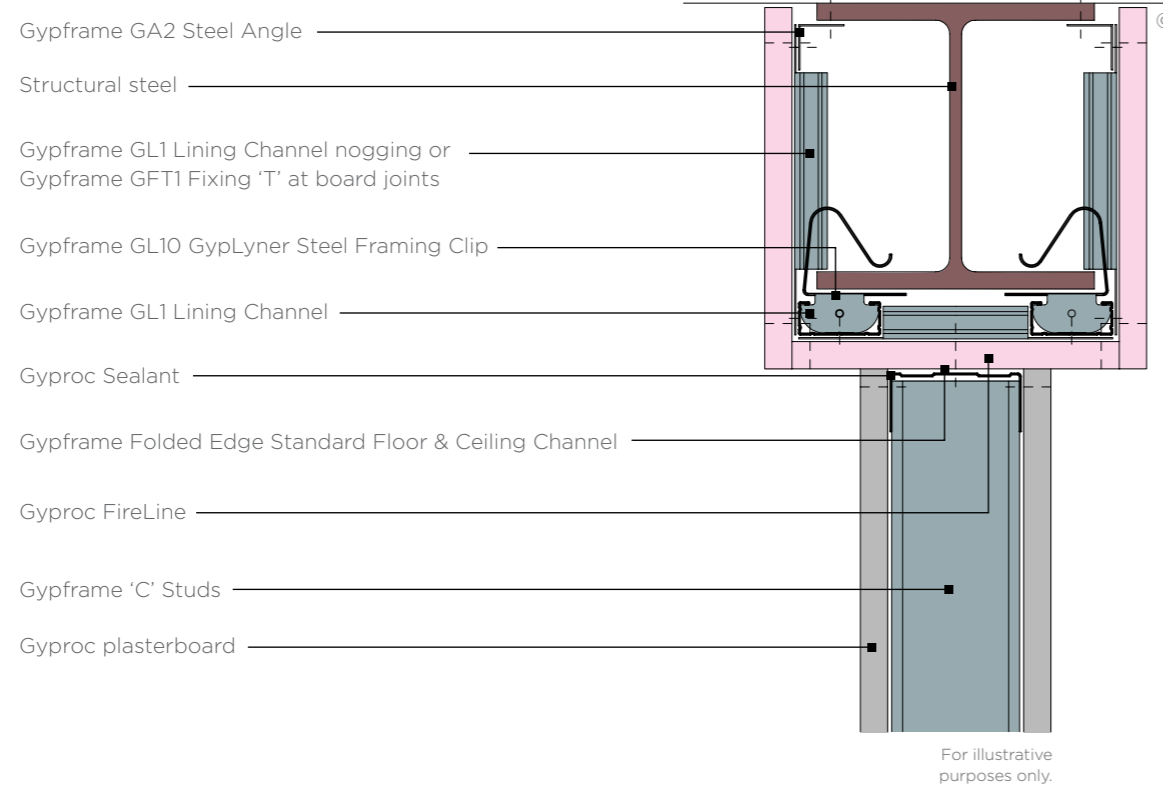
# GypLyner Encase

## Construction details

### 5. Column encasement and partition junction

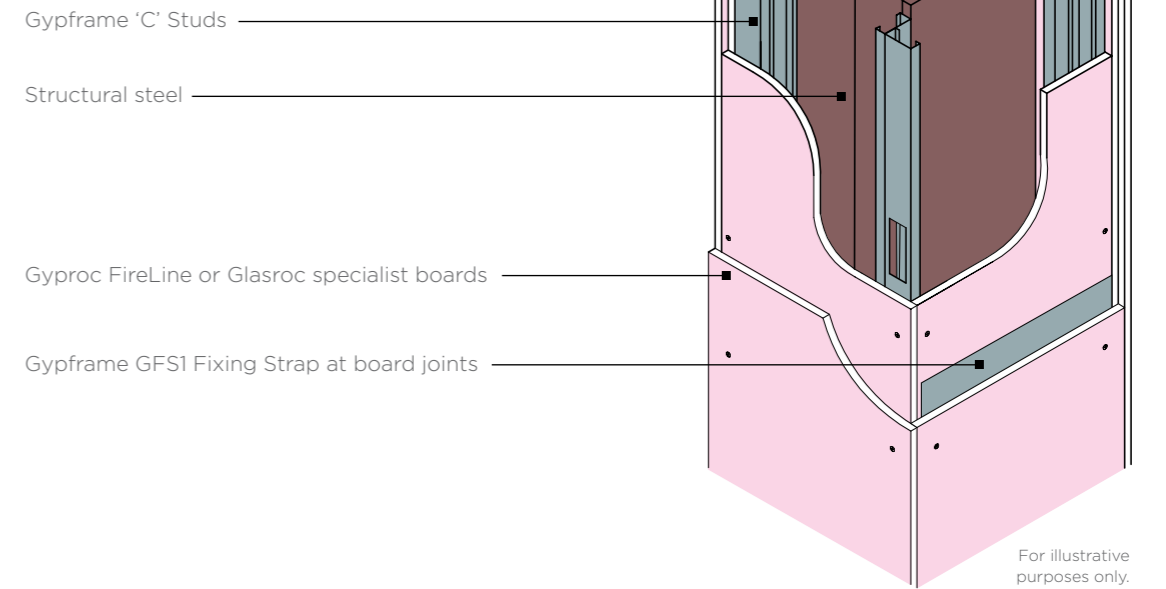


### 6. Beam encasement and partition junction



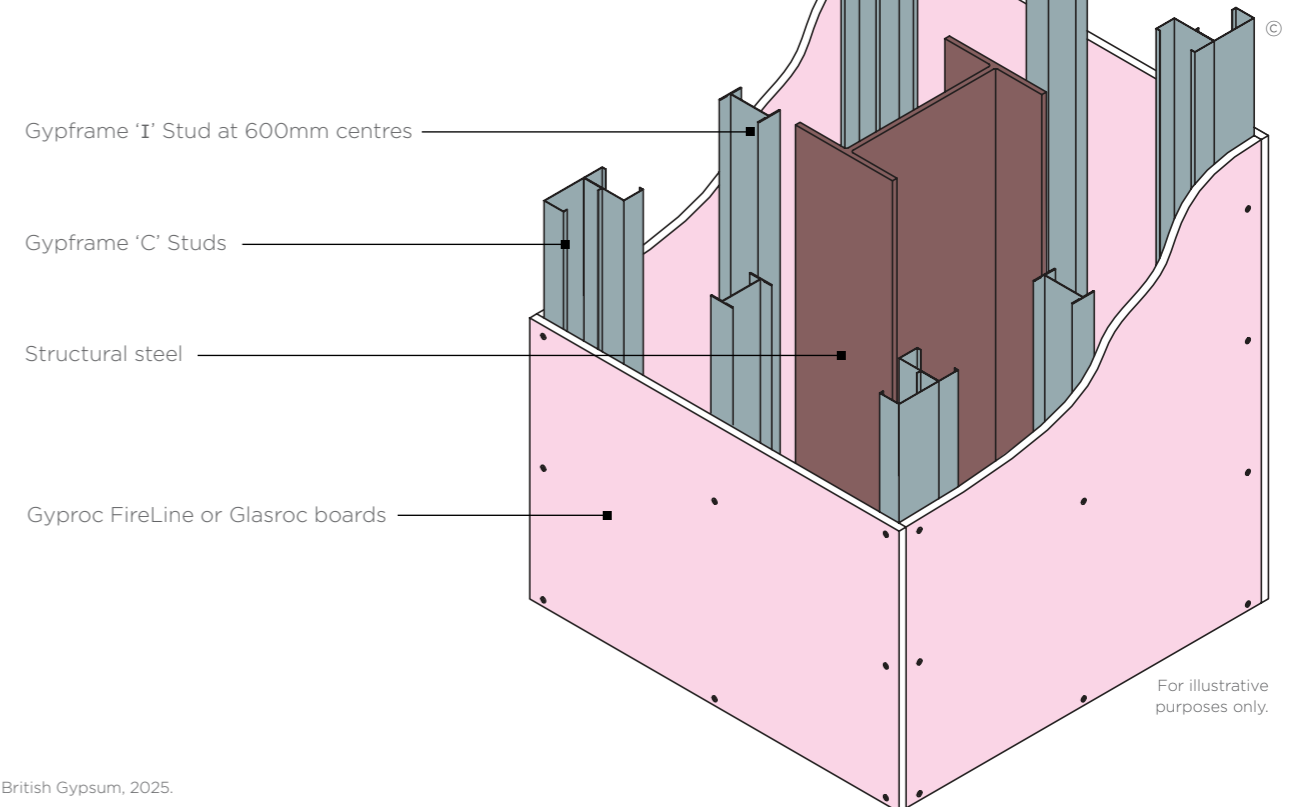
### 7. Boxing out for columns up to 600mm wide

Using GypLyner Independent



### 8. Boxing out for columns over 600mm wide

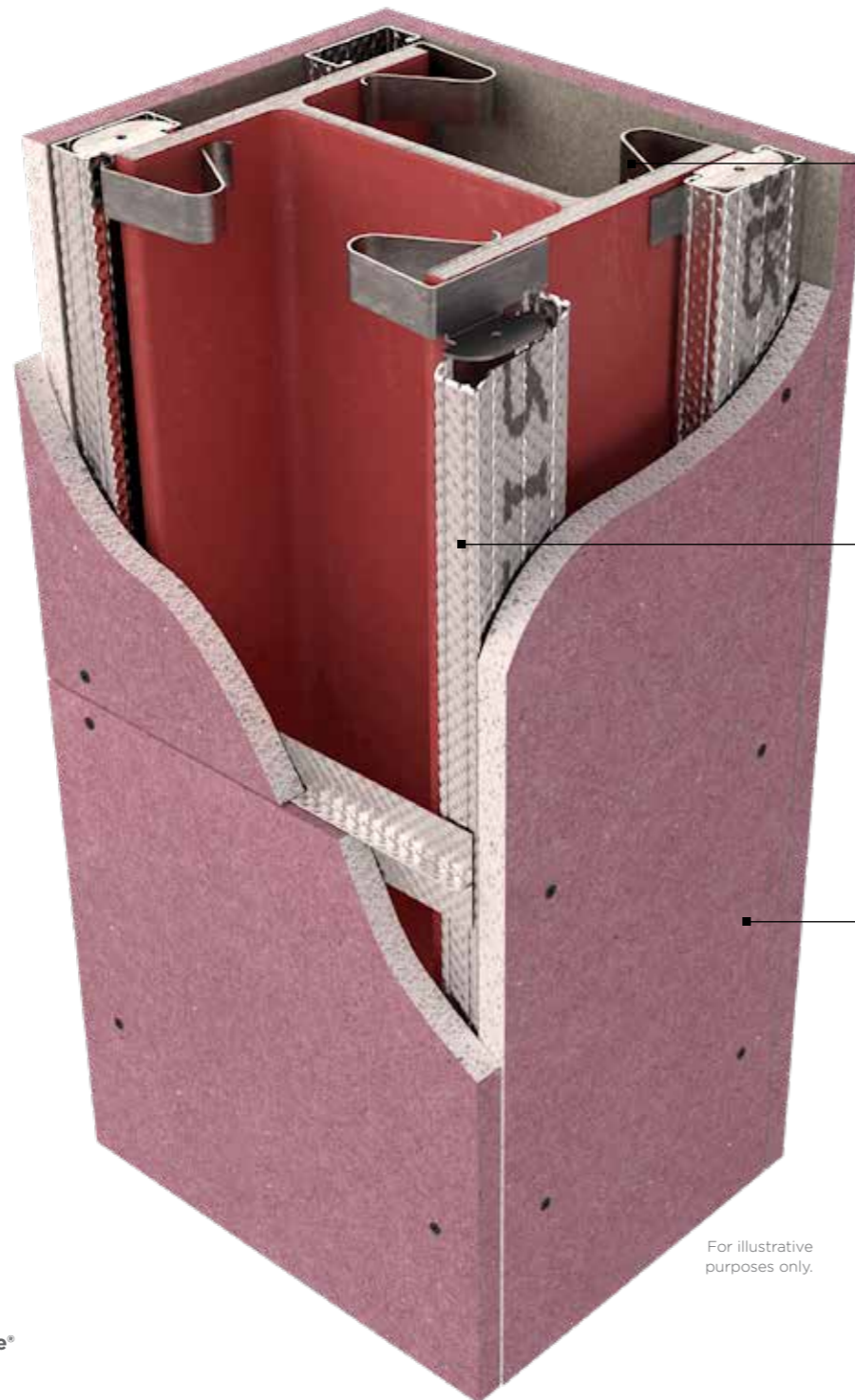
Using GypLyner Independent



# GypLyner Encase

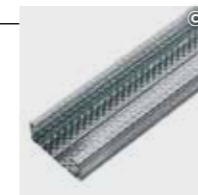
## System components

Metal framed encasement systems to provide fire protection to structural steel.



### Gypframe GL10 GypLyner Steel Framing Clip

Steel framing clips for connecting lining channels to steel columns and beams. Steel framing clips are used in the GypLyner Encase system. They quickly clip on the steel flange, allowing the Gypframe GL1 Lining Channel to clip over. Encasement board can then be screw fixed.



### Gypframe GL1 Lining Channels

A steel framed lining component forming main support channel for plasterboard. Lining Channels can be installed vertically or horizontally and secured to backgrounds using brackets or timber connector components.



### Gyproc FireLine

Gyproc FireLine is a plasterboard that contains glass fibre and other additives for extra fire protection.

For illustrative purposes only.



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)

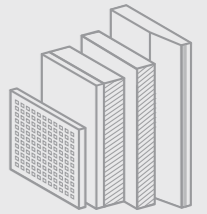
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Careful product choice is central to maintaining system integrity, performance requirements as well as eligibility for our **SpecSure** warranty. **Ensure an optimum standard of build by considering...**

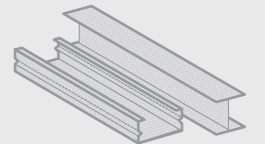
### What are you fixing?

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



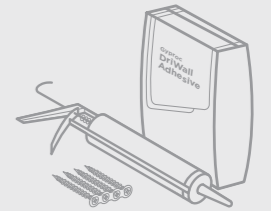
### What are you fixing to?

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



### What are you finishing with?

#### Plaster

Our wide range of Thistle plasters and Thistle accessories give you everything you need to finish a job to the highest possible standard. See [british-gypsum.com](http://british-gypsum.com) for more details.



#### Finishing products

Our Gyproc jointing range gives you everything you need to complete a system, whatever the size and complexity of the project. See [british-gypsum.com](http://british-gypsum.com) for more details.

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

# GypLyner Encase Installation

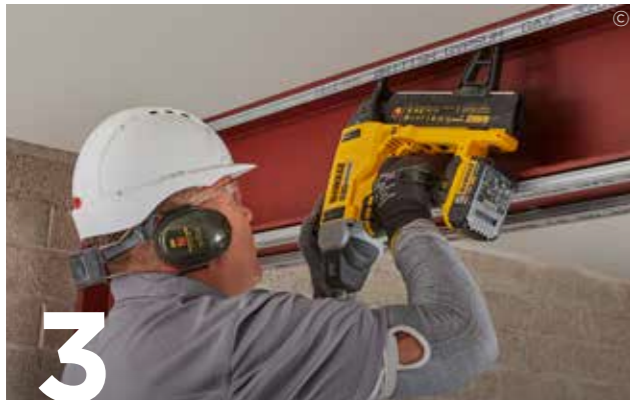
The information below is intended to be a basic description of how the system is built.



For three-sided protection to steel columns or beams, friction-fit Gypframe GL10 GypLyner Steel Framing Clips onto the column / beam flanges at 800mm centres.



Locate Gypframe GL1 Lining Channels over the clips to form the steel framework.



For two or three-sided beams or columns, use appropriate fixings to secure Gypframe GA2 Steel Angles to both sides of the wall / soffit flange.



Use British Gypsum Drywall Screws to fix cut boards to all framing members.



For single layer beam encasements board-end joints are backed using vertical noggings formed from an appropriate Gypframe component: Gypframe GL1 Lining Channel, Gypframe GFS1 Fixing Strap or Gypframe GFT1 Fixing 'T'.

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