

# GypLyner iWL

Internal wall insulation (IWI)  
installation guide



# GypLyner iWL

## Internal wall insulation

### Pre-Installation survey requirements

It is important to note that the survey should be carried out by a competent person as defined within the relevant annex within PAS 2030.

Guidance checks as a minimum should include:

- Making notes of any pre-existing damage to the areas that will be accessed by the installation operatives
  - Assessing the extent of the area and elements to be insulated
  - Whether relevant checks have been undertaken to determine if asbestos-containing materials are present
  - Check to see if relevant arrangements have been made for the isolation and, where necessary, the temporary removal of existing services (gas, electric, water, telephone, etc.)
  - Carry out checks to ensure there is no dampness or condensation / mould growth issues which would affect a lining system being installed
  - Check to make sure all existing ventilation outlets can be maintained through to the new lining system that is installed
  - Ensure assessments are made regarding the work carried out
    - Will not compromise Building Regulations in relation to workmanship, materials, fire safety and ventilation
    - Will not compromise the functionality and / or safety of existing services
- Check the condition of the floor structure and sub-floor void is suitable for the works to commence in relation to:
    - Existence of appropriate floor void ventilation arrangements
    - The under floor area being free from rodents / pests
    - Timbers free from rot and / or infestation
    - Metal structural floor support members being free from visible signs of corrosion
    - Electrical wiring is free from visible defects, e.g. damaged cables, trailing cables, exposed conductors
    - No visible signs of water penetration or water accumulation in the under floor area
    - No visible signs of leakage from water system components e.g. pipework

It is important to carry out a detailed close inspection to the internal wall surface to identify any dampness issues and to ascertain whether the property has a damp-proof course (DPC), this will be dependent on the age of the property. It is worth asking the homeowner if the property has had a DPC injection treatment while they have been in the property, or if it was identified through the property survey when it was purchased. Where a DPC is identified, the condition should be checked as well as the distance of the floor level to the position of the DPC.

Carrying out a close inspection of the external of the property should be carried out to check for leaking gutters, downspouts, missing flashings, deteriorating brickwork and / or mortar joints, as these are common problems which can result in penetrating dampness.

## Introduction

The purpose of this guide is to define and show the installation process for **GypLyner iwl**; this is one of the British Gypsum BBA-certified internal wall insulation systems which can be used to improve the energy efficiency measures within buildings and is used in relation to PAS 2030 for quality management purposes.

While the construction methods for each wall lining system will vary, there is generic information which is deemed best practice irrespective of which system is installed; this covers minimising air leakage, reducing thermal bridging, accommodating fixtures of cupboards, radiators, curtain track, etc.

Under Building Regulations, Part L 1B there is a requirement for upgrading existing properties to an improved U value of 0.3 where the footprint of each room allows. Depending on which lining system is installed, it is important to have a U-value and dew point calculation carried out to ensure the wall construction and new lining system do not create risks of harmful condensation within the wall fabric and that the new level of insulation is met.

### Internal wall lining specification

It is important to check the condition of the wall lining during a site survey to enable you to identify which lining system best suits the needs of the property. Recommendations can then be made to the homeowner that meet their requirements and the specification for improved thermal insulation at the most cost effective solution available.

### Socket outlets

When socket outlets on the existing walls need to be repositioned on the new stud lining, it is likely that cables will need to be brought forward. Moving cables in this manner is not classified as 'notified work' according to Approved Document P, 2013 Design and installation of electrical installations, and can be carried out by a suitably competent person.

All electrical work should be carried out in accordance with Approved Document P, the relevant part of the current IEE Regulations and associated guidance.

Note: As with all electrical work, if at all in doubt consult a suitably competent person such as a qualified electrician.

### Maintaining existing ventilation to a property

All ventilation outlets within the external wall should be maintained through the new lining system being installed so as to ensure the ventilation is maintained into the property. It is important to note that where the external walls are improved in terms of thermal insulation, consideration is given to Part F of the Building Regulations - ventilation.



# Specific BBA Approved IWI System

The following details should be read in conjunction with the **British Gypsum Site Book** and **White Book**. These documents can be found at [british-gypsum.com/literature](http://british-gypsum.com/literature).

## System overview

### Independent wall lining system GypLyner iwl

Independent wall lining is a lightweight, non-loadbearing drylining which is erected independently of the external wall construction.

The system is used in all types of building, but is particularly suitable for those with reinforced concrete or steel frames.

The lining provides fire resistance to structural steel sections within the lining cavity and can be used to increase sound insulation and meet thermal performance requirements of new or existing masonry walls.





## Gyproc boards

### Gyproc ThermaLine PLUS

Gyproc WallBoard bonded to a CFC and HCFC-free (zero ODP - Ozone Depletion Potential) extruded polystyrene insulant, with integral vapour control provided by the closed cell structure of the foam.

A cost-effective thermal laminate for new buildings and for upgrading existing buildings requiring mid to high thermal performance levels. The 27mm thick Gyproc ThermaLine PLUS with 9.5mm Gyproc WallBoard and can be used at window reveals where the width of the frame dictates.

 Faced with ivory coloured Gyproc WallBoard


 Backed with orange coloured extruded polystyrene




### Gyproc ThermaLine PIR

Gyproc 12.5mm WallBoard bonded to CFC and HCFC-free / Zero ODP - Ozone Depletion Potential, high performance polyisocyanurate foam insulant. Moisture resistant variants in 1200 x 2400mm and small pallet quantities are available on extended lead times.

Used where a substantial, cost effective, upgrade in thermal resistance is required.


 Faced with ivory coloured Gyproc WallBoard


 Backed with yellow polyisocyanurate foam with ivory paper coating and vapour control layer



### Gyproc ThermaLine SUPER

Gyproc WallBoard bonded to a CFC and HCFC-free (zero ODP - Ozone Depletion Potential), high performance phenolic foam insulant, with a Class 0 fire performance rating for both faces, low toxicity and less than 5% smoke obscuration. Includes a vapour control layer as standard to reduce the risk of condensation. Used where substantial upgrade in thermal resistance is required.

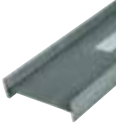



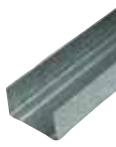



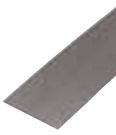




 Faced with ivory coloured Gyproc WallBoard

 Backed with brown coloured phenolic foam



# Gypframe metal components

## Gypframe metal products

<b>Gypframe 'I' Studs</b> Width 48mm Length 2700, 3000mm Codes 48 I 50		<b>British Gypsum Drywall Screws</b> For fixing boards to stud framing less than 0.8mm thick ('I' Studs less than 0.6mm thickness)	
<b>Gypframe 'C' Studs</b> Width 48mm Length 2400, 3600mm Codes 48 S 50		<b>British Gypsum Jack-Point Screws</b> For fixing boards to stud framing 0.8mm thick or greater ('I' studs 0.6mm thick and greater)	
<b>Gypframe Standard Floor &amp; Ceiling Channel</b> Width 50mm Length 3600mm Codes 50 C 50		<b>British Gypsum Wafer Head Drywall Screws</b> For metal-to-metal fixing less than 0.8mm thick ('I' Studs less than 0.6mm thick)	
<b>Gypframe 99 FC 50 Fixing Channel</b> Length 2400mm		<b>British Gypsum Wafer Head Jack-Point Screws</b> For metal-to-metal fixing 0.8mm thick or greater ('I' Studs 0.6mm thick or greater)	
<b>Gypframe GFS1 Fixing strap</b> Length 2400mm		<b>Gyproc Sealant</b> Sealing air paths for optimum sound insulation and reduced air leakage	
<b>Gypframe GFT1 Fixing 'T'</b> Length 2400mm		<b>Gyproc edge beads</b> Protecting and enhancing board edges	
<b>Gypframe GA6 Splayed Angle</b> Length 2400, 3600mm			

# Installation guidance

## Step 1

Mark line to indicate the position of the lining framework from the highest point on the background.

On uneven floors a timber sole plate, 38mm x width of stud, may be required. On new concrete screeding consider installing a damp proof membrane to the full partition width before locating the sole plate or floor channel.

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## Step 2

Locate Gypframe Floor & Ceiling Channel up to the floor and ceiling lines. Use DC (Deep Flange) channel at head and base if lining height is between 4200mm and 8000mm.

Fix Gypframe 'C' Studs to abutments, junctions and openings only.

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## Step 3

Position the Gypframe 'I' Studs vertically between channel sections and twist to locate.

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## Step 4

Fix boards to all framing members at 300mm centres using the appropriate length British Gypsum screws.

Reduce centres to 200mm at external angles.

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## Installation guidance (continued)

### Step 5

Lightly butt boards, inserting screws not closer than 10mm from bound edges and 13mm from cut edges.

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### Step 6

As work progresses, ensure that any junctions between internal corners and around service penetrations are adequately sealed with Gyproc Sealant to prevent airflow within the cavity of the lining system and air leakage from the room side.

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### Step 7

Use 48mm Gypframe metal studs fixed into position at either side of any openings with British Gypsum Wafer Head Screws or by using a crimping tool.

50mm Gypframe channel is used to form the head and cill of the opening.

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### Step 8

The Gypframe channel is cut to allow 150mm cloaking over the vertical studs at either side of the opening.

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## Installation guidance (continued)

### Step 9

#### Minimising thermal bridging around openings

Where the depth of the window frame allows, ensure 27mm Gyproc ThermaLine plus, as a minimum, is returned into the window reveals. Fix this into place with Gyproc Sealant in addition to mechanical fixing to the 48mm Gypframe metal stud either side of the opening and to the 50mm channel at the head and cill of the opening.

Where timber or MDF window cills are installed, ensure they are adequately sealed prior to completing the boarding around the window reveals. Where it is practicable and the depth at the cill allows, fix a Gyproc ThermaLine board before installing the window cill on top of this.

Where the depth of window frames do not allow for the depth of a Gyproc ThermaLine board to be used, the plaster work will need to be removed to accommodate the thermal board.

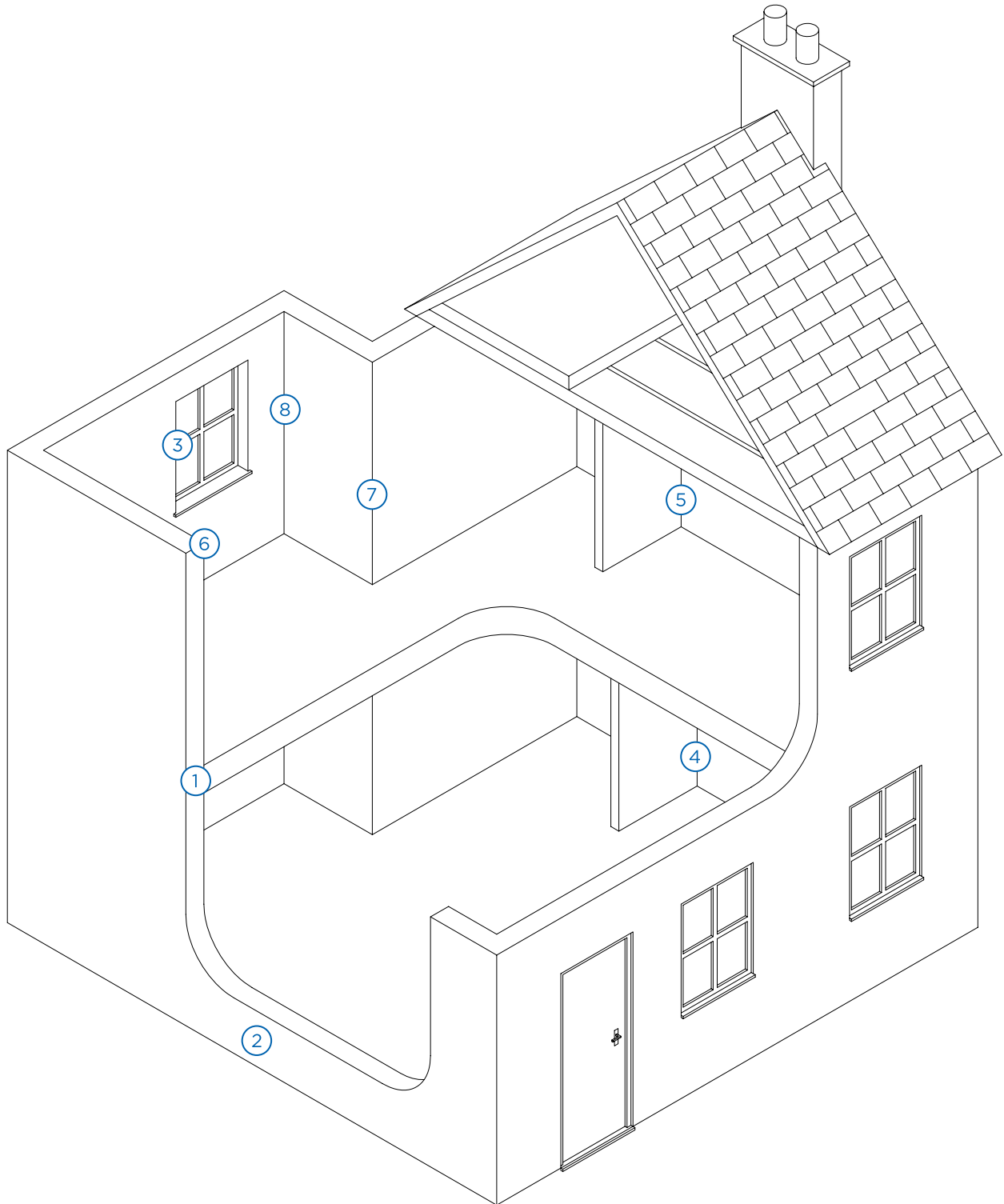
#### Trickle vents in windows

It is important that trickle vents are maintained when remedial work has been carried out to ensure ventilation to the property.





# GypLyner iWL junction detailing



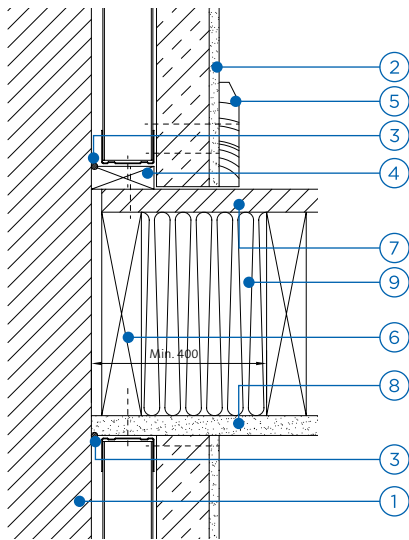
- 1 External wall and intermediate floor junction
- 2 Ground floor junction
- 3 Window reveal
- 4 External wall & internal wall junction

- 5 GypLyner iWL and partition junction
- 6 Roof junction
- 7 External corner junction
- 8 Internal corner junction

Please see following pages for full junction details

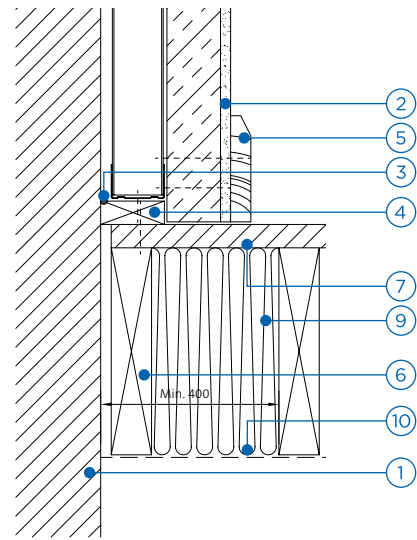
## GypLyner iWL junction detailing (continued)

1



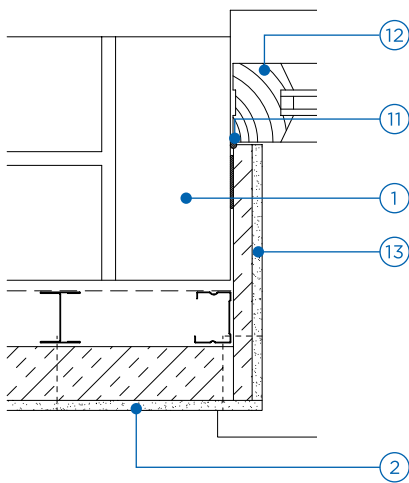
External wall and intermediate floor junction

2



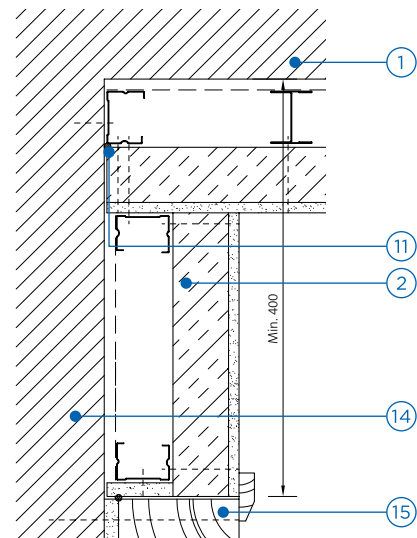
External wall and timber ground floor junction

3



Window reveal with insulation

4

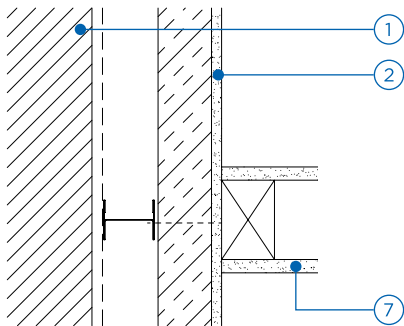


External wall and internal wall junction. The 400mm return is applied to both sides of the internal wall

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1 Existing external wall</li> <li>2 GypLyner iWL wall lining system using Gyproc ThermaLine fixed with British Gypsum Drywall Screws at 300mm centres</li> <li>3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant</li> <li>4 Timber batten to close perimeter gap in floor boarding</li> <li>5 Skirting</li> <li>6 Existing timber joist</li> <li>7 Existing floor boarding</li> <li>8 Existing ceiling</li> </ul> | <ul style="list-style-type: none"> <li>9 Isover insulation to first 400mm (minimum) of floor void from adjacent wall</li> <li>10 Mesh</li> <li>11 Continuous bead of Gyproc Sealant around window openings and wall lining perimeters</li> <li>12 Existing window</li> <li>13 27mm Gyproc ThermaLine PLUS fixed to reveal with 25mm diameter blobs of Gyproc Sealant at 300mm centres and British Gypsum Drywall Screws to studs</li> <li>14 Existing internal wall</li> <li>15 Indicative timber section fixed to structure and cover strip</li> </ul> |
|--|---|

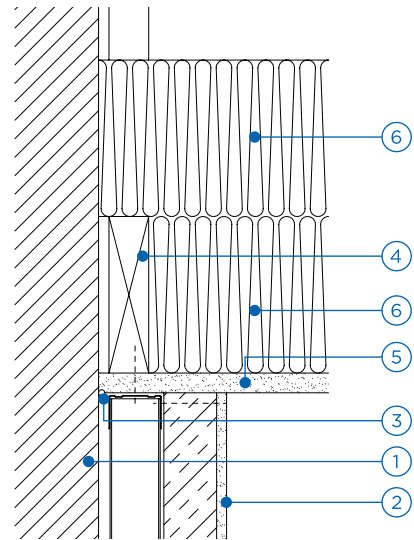
## GypLyner iWL junction detailing (continued)

5



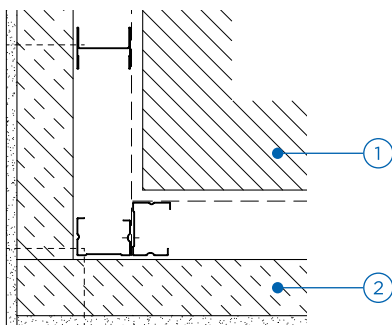
GypLyner iWL external wall and partition junction for optimum thermal insulation. The existing partition is cut back to allow the lining system to be maintained for thermal insulation

6



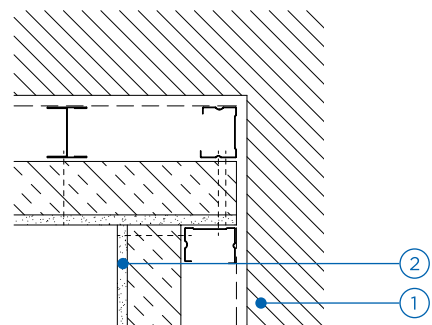
GypLyner iWL external wall and roof junction

7



GypLyner iWL external corner

8



GypLyner iWL internal corner

- 1 Existing external wall
- 2 GypLyner iWL wall lining system using Gyproc ThermoLine fixed with British Gypsum Drywall Screws at 300mm centres
- 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant

- 4 Existing timber ceiling joist
- 5 Existing ceiling
- 6 Isover insulation
- 7 Existing partition cut back from external wall

Whilst we recommend 400mm returns on internal walls to reduce the risk of surface condensation and mould growth and to minimise heat loss at the junction, this rule does not apply where the external wall linings abuts a separating wall when the adjoining property is not being upgraded with the same improvement measures.

The reason for not applying a 400mm return on a separating wall where the adjoining property is not being upgraded is the increased risk of surface condensation and mould growth which could occur on the adjoining property. Where a row of terraced properties are being renovated with the same internal wall insulation measure, this would allow the 400mm returns to be applied on both sides of the separating wall to external wall junction. A quick way to summarise and remember if the detail measure applies is **both sides or no sides**.

# Understanding specific issues regarding detailing

## Reducing thermal bridging

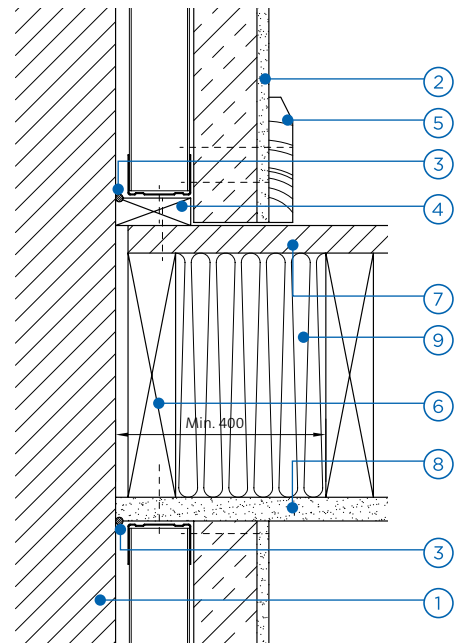
It is important to look at all areas within a property which will contribute to thermal bridging. Ultimately the home owner will need to agree for the additional work which will be required and would include the following:

- Voids between joists between the ground floor and subsequent floors
- Voids beneath a timber joist ground floor
- Window and doorway reveals
- Internal timber stud, metal stud and masonry walls

Given the work that is being carried out to the property, to address the above junctions are an important factor to ensure you gain the best level of thermal insulation within your renovated property.

### Example detail

The detail opposite shows the additional insulation within the floor void. It is important to note that where the flooring does not get a seal against the external plaster or brickwork, you need to ensure that the perimeter of the floor has an effective seal with Gyproc Sealant or Gyproc DriWall Adhesive.



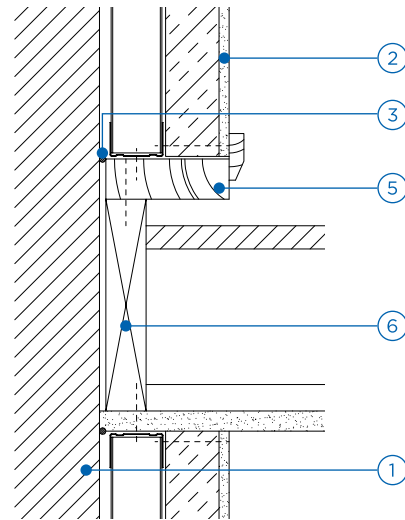
GypLyner iWL external wall and intermediate floor junction

- |  |  |
|--|--|
| <b>1</b> Existing external wall with plaster finish  | <b>5</b> Skirting  |
| <b>2</b> GypLyner iWL wall lining system using Gyproc ThermaLine fixed with British Gypsum Drywall Screws at 300mm centres | <b>6</b> Existing timber joist   |
| <b>3</b> Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant   | <b>7</b> Existing floor boarding   |
| <b>4</b> Timber batten to close perimeter gap in floor boarding  | <b>8</b> Existing ceiling  |
|  | <b>9</b> Isover insulation to first 400mm (minimum) of floor void from adjacent wall |

### Staircase abutting an external gable end wall to a property

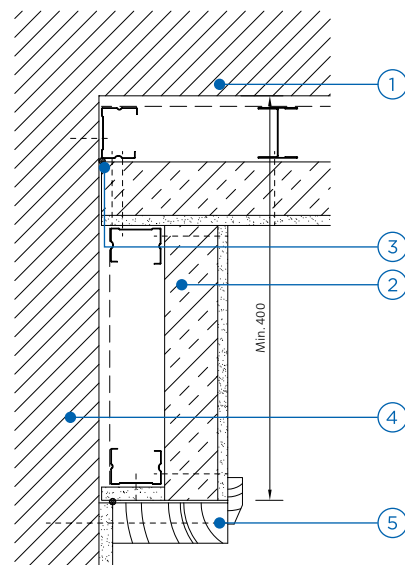
Installing a new lining which will encroach onto the width of a staircase will need checking against the Building Regulation requirements to ensure the minimum width of the staircase is maintained as defined and required within the regulations.

Looking at the void within the staircase, Isover insulation should be installed the width of the staircase but this may be impractical to install from a structural point of view.



External wall and stairs detail

Where an internal masonry wall abuts an external wall, the lining system will need to be returned along the internal wall by a minimum 400mm on either side of the wall to address the effects of thermal bridging at the wall junction.



External wall and internal wall junction. The 400mm return is applied to both sides of the internal wall

- 1 Existing external wall
- 2 GypLyner iwl wall lining system using Gyproc ThermaLine fixed with British Gypsum Drywall Screws at 300mm centres
- 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant
- 4 Existing internal wall
- 5 Indicative timber section fixed to structure and cover strip
- 6 Existing stair stringer

## Understanding specific issues regarding detailing (continued)

### Air leakage

To ensure that upgrading of external walls is as effective as possible, it is very important to prevent air leakage through the structure, or at least keep it to an absolute minimum.

Air leakage can occur between the interior and exterior, as well as between different elements of the building envelope.

Air leakage through the masonry wall occurs through cracks, gaps where there is poor adhesion between the mortar and the masonry units, or diffusion through the masonry units themselves. Where the plaster has been removed and air leakage through the wall is thought to be excessive, it should be tackled before the IWI system is installed by applying a parging coat to the inner surface of the wall.

As the insulation component of the system is in intimate contact with the plasterboard, air movement behind the system should not occur. However, to prevent unwanted air leakage all junctions with other elements should be well sealed with particular attention being paid to the joints between the IWI system and the window frames.

In addition, Gyproc Sealant should be used to seal electric sockets against the plasterboard as well as all gaps around plumbing service penetrations.

### Surface finish to the plasterboard lining

The wall surface can be finished with Thistle finish plasters or alternatively Gyproc jointing materials. When skirtings are applied, it is good practice to apply a seal along the face side of the skirting where it abuts the flooring.

#### Tools required to carry out the GypLyner Installation

- Tape measure
- Spirit Level
- Chalk line
- Cordless screwdriver
- Tin snips
- Mastic gun
- Hand saw
- Hammer
- Cordless drill or 110 volt drill

The above list of tools is not exhaustive and additional tools may be required dependent on the requirements of the work being carried out.






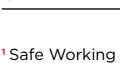
**NB** - It is important to note that British Gypsum have four systems which are BBA approved. These systems are different in construction techniques and in order to become a Registered Installer for each system, attendance is required on each course; on site assessment is linked to each system specific course.

### Fixing guidance

#### Fixings for use with Gyproc plasterboards and ThermoLine board range

There is a wide variety of fixing devices suitable for securing fixtures and fittings to internal wall lining systems. Generally, the choice of individual fixing devices will depend on the loading requirements. This section gives recommendations on the selection of generic devices and proprietary fixings.

The table below gives example fixing devices and typical applications using Gyproc ThermoLine boards to meet the specific load criteria. The guidance given is primarily concerned with fixtures at the time of installation. Subsequent installation is less easy, especially for heavier fixtures that will often require considerable care, if the lining is not to be locally deflected.

Detail	Description	Typical SWL <sup>1</sup> (typical failure load)
	Steel expanding cavity fixing e.g. HM6 x 52 into Gyproc ThermoLine SUPER or Gyproc ThermoLine PIR	15.75kg (63kg)
	Steel expanding cavity fixing e.g. HM8 x 55 into Gyproc ThermoLine SUPER or Gyproc ThermoLine PIR	17.75kg (71kg)
	British Gypsum Drywall Screw fixed through Gyproc WallBoard into 0.5mm Gypframe metal stud / Gypframe 99 FC 50 Fixing Channel	19kg (76kg)
	No. 12 self tapping screws fixed through Gyproc WallBoard into minimum 0.9mm Gypframe metal stud	50kg (200kg)
	UX8 plastic cavity fixing	7.43kg (52kg)
	PD10 plastic cavity fixing into Gyproc ThermoLine SUPER or Gyproc ThermoLine PIR	6kg (43kg)

<sup>1</sup> Safe Working Load (SWL) - a safety factor of four (steel fixings) and seven (plastic fixings) has been used.

For technical assistance on above fixings, please contact the fixings manufacturer. The suitability of the fixing must be confirmed by the building designer / fixing manufacturer. Reference can also be made to the Construction Fixing Association (CFA) guidance note 'Fixing For Plasterboard', which is currently under review by the CFA and can be accessed at [www.fixingscfa.co.uk](http://www.fixingscfa.co.uk)

When specifying a fixing to / through Gyproc ThermoLine laminates, please give consideration to the thickness and compressibility of the insulation to ensure that the fixing used is fit for purpose.

# Saint-Gobain Technical Academy

## The complete training service

Our courses are designed to increase knowledge on the products and systems we offer, the regulations and market requirements that drive demand as well as providing practical guidance on installing our systems.

Saint-Gobain Technical Academy training courses are run by fully qualified instructors at Kirkby Thore near Penrith, East Leake near Nottingham, Erith in Kent and Clevedon near Bristol.

## Saint-Gobain Technical Academy training centre locations

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Unit 1, The Courtyard  
Barnes Ground, Kenn,  
Clevedon, North Somerset  
BS21 6TB

**East Leake**  
East Leake, Loughborough,  
Leicestershire, LE12 6HX

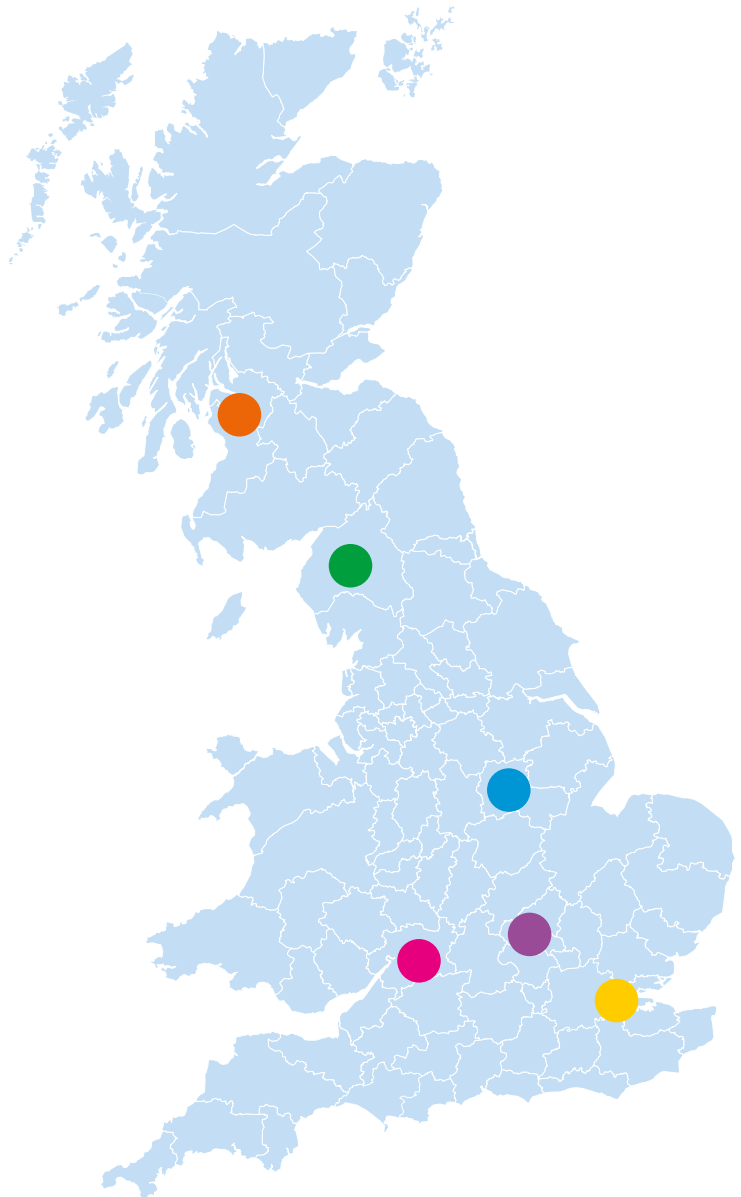
**Erith**  
Church Manorway, Erith,  
Kent, DA8 1DE

**Flitwick**  
Enterprise Way, Flitwick,  
Bedford, MK45 5BY

**Kirkby Thore**  
Kirkby Thorem Nr. Penrith,  
Cumbria, CA10 1XU

## Saint-Gobain Technical Academy satellite training centre location

**South Lanarkshire College**  
College Way, East Kilbride,  
G75 0NE



For further details on courses, locations and dates, please contact the Saint-Gobain Technical Academy on 0844 561 8810 or visit the British Gypsum website: [british-gypsum.com](http://british-gypsum.com)

FSC

**Technical enquiries**

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Loughborough  
Leicestershire  
LE12 6HX

T: 0115 945 6123  
F: 0115 945 1616  
E: [bgtechnical.enquiries@bpb.com](mailto:bgtechnical.enquiries@bpb.com)

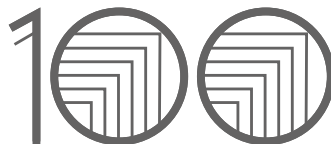
Training enquiries: 0844 561 8810

British Gypsum January 2019  
BG-IWLIG-03



**SAINT-GOBAIN**

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