

DriLyner RF

Internal wall insulation (IWI)
installation guide



DriLyner RF

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 **DriLyner RF**; 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.

System overview

Drywall masonry lining systems

The DriLyner systems are simple, effective techniques for direct bonding of boards to solid backgrounds.

The DriLyner **RF** system bonds Gyproc ThermaLine to flat walls in refurbishment situations using blobs of Gyproc Sealant.





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

British Gypsum Nailable Plugs

Diameter 6mm
Length 60, 80, 100, 110,
120 and 135mm



Gyproc Sealant

Sealing air paths for optimum sound insulation and reduced air leakage in addition to fixing boards to the wall



Installation guidance

Step 1

Marking out is not required. The system should only be used where the background alignment is satisfactory.

Gun apply blobs of Gyproc Sealant to the wall or the back of the board approximately 25mm in diameter (single squeeze), at 300mm centres in both directions.



Step 2

Ensure that the blobs adjacent to a board joint are approximately 25mm in from the edge to avoid bridging the joint.



Step 3

Cut board to fit the floor to ceiling height. Position the first board, with the bottom edge resting on the floor. Tap the board back firmly using a straight-edge, ensuring the vertical edge is plumb.

If required, gently lift using a footlifter until the board is tight against the ceiling. Insert additional packing strips at the base to wedge the board in place and remove the footlifter.



Installation guidance (continued)

Step 4

At internal angles cut board to fit and position the cut edge to the angle.

At reveals and external angles, run the lining past the corner (and, when installing Gyproc ThermaLine laminate, cut back the insulation backing to form a rebate) so as to form a neat junction with the reveal board or wall lining.

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, fixing this into place with Gyproc Sealant.

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. Gyproc DriWall Adhesive should be used to bond the Gyproc ThermaLine board to the masonry.

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 of the cill allows, fix a Gyproc ThermaLine board before installing the window cill on top of this.

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.



Step 5

Install British Gypsum Nailable Plugs to provide secondary mechanical fixings. Insert two plugs per board, 15mm in from each edge at mid-height.

Select plugs to give a nominal 25mm penetration into the solid wall (excluding plaster thickness). Drill hole 5mm longer than the plug.

Drive in each plug until the head is slightly below the liner without fracturing it.



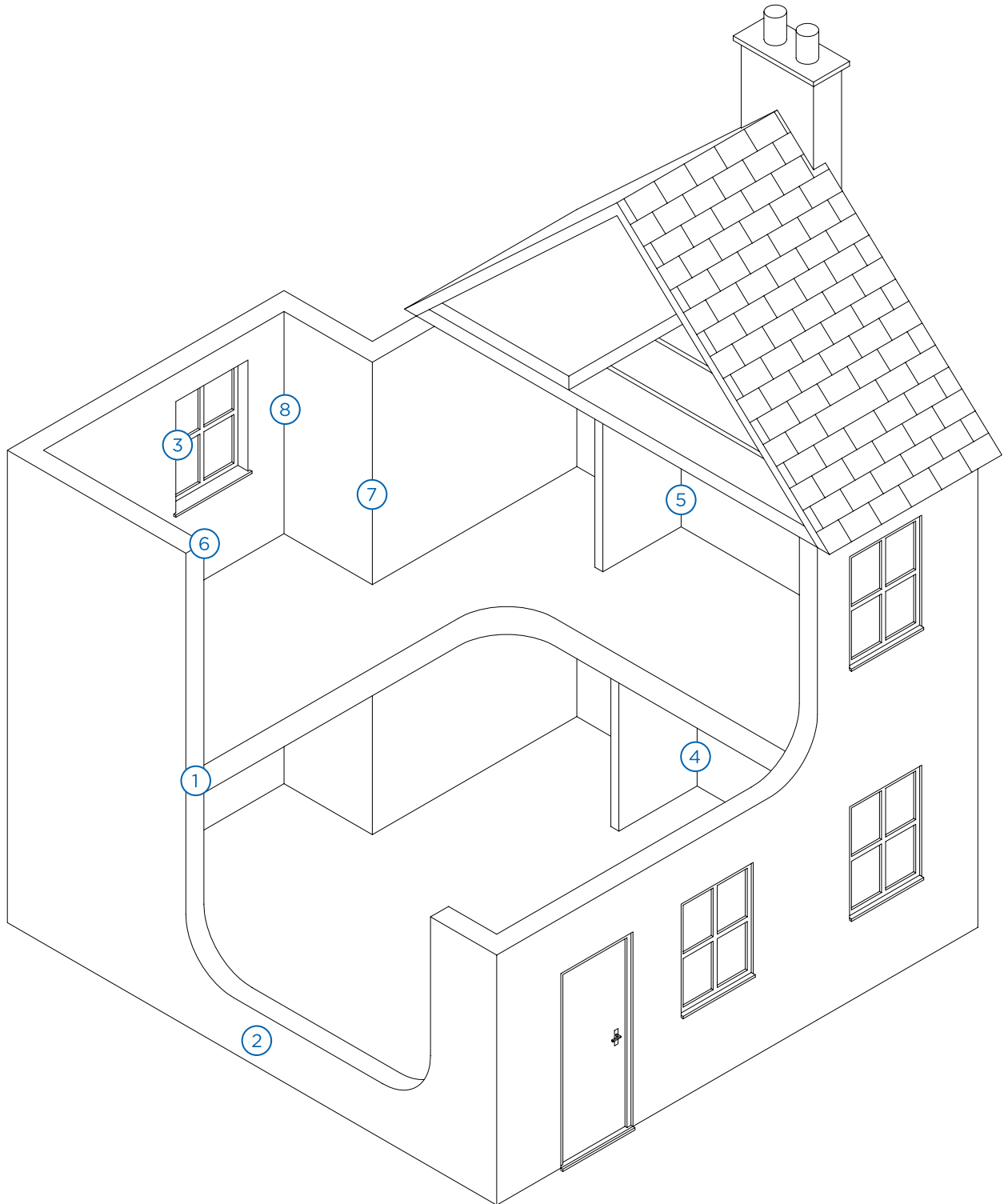
Step 6

It is important to ensure Gyproc ThermaLine boards are cut to as good a fit as possible.

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.



DriLyner RF junction detailing

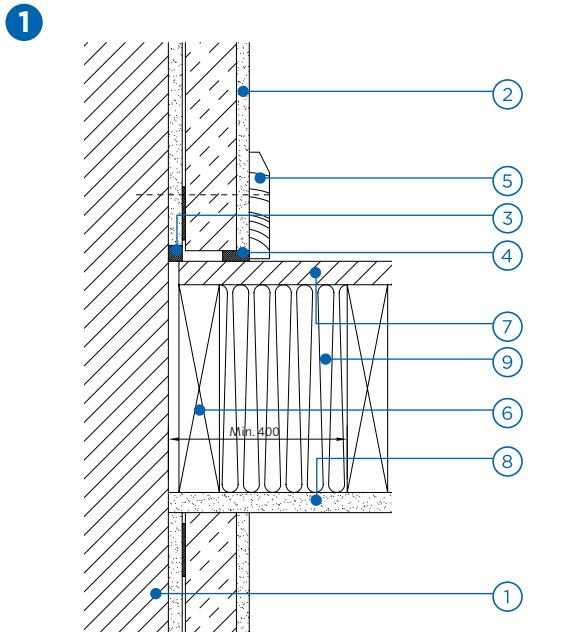


- 1** External wall and intermediate floor junction
- 2** External wall and ground floor junction
- 3** Window reveal with insulation
- 4** External wall & internal wall junction

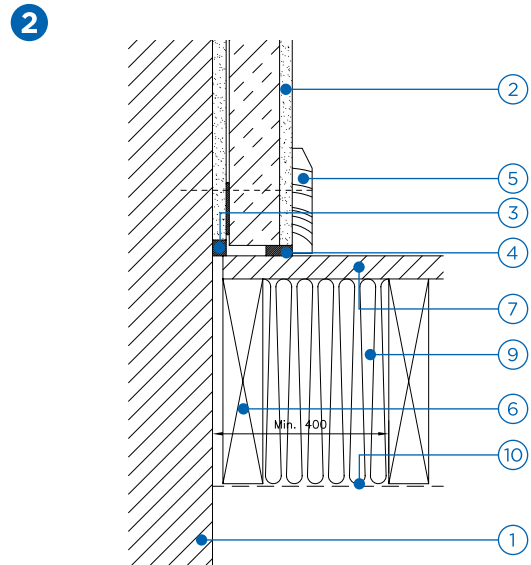
- 5** External wall and internal partition junction for optimum thermal insulation
- 6** External wall and roof junction
- 7** External corner junction
- 8** Internal corner junction

Please see following pages for full junction details

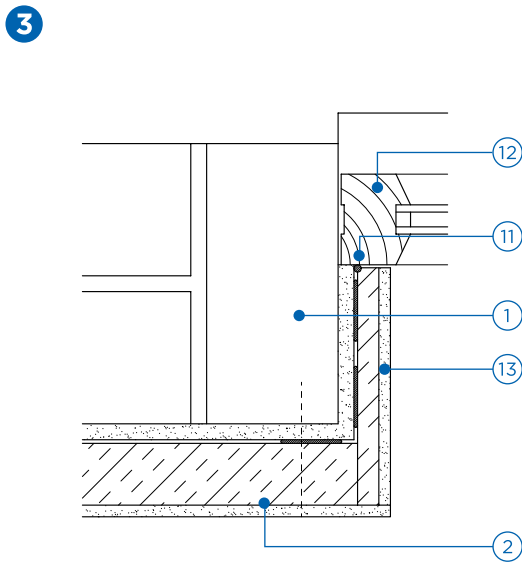
Drilyner RF junction detailing (continued)



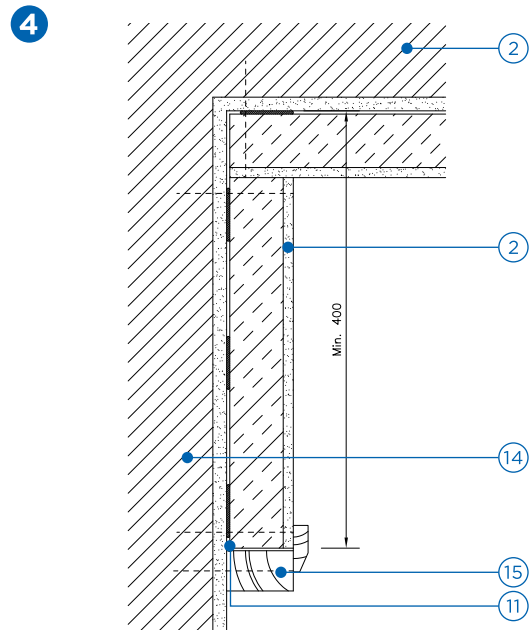
External wall and intermediate floor junction



External wall and timber ground floor junction



Window reveal with insulation



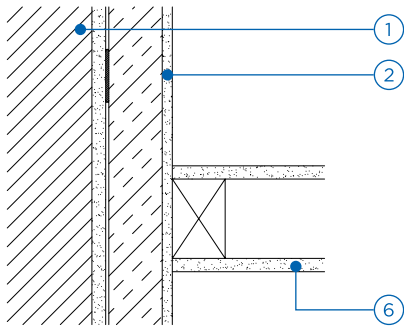
External wall and internal wall junction. The 400mm return is applied to both sides of the internal wall

- 1 Existing external wall with plaster finish
- 2 Wall lining system using Gyproc ThermaLine fixed with 25mm diameter blobs of Gyproc Sealant at 300mm centres in 5 vertical lines and 2 no. British Gypsum Nailable Plugs at mid-height
- 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant
- 4 Bulk fill with Gyproc jointing materials
- 5 Skirting
- 6 Existing timber joist
- 7 Existing floor boarding
- 8 Existing ceiling

- 9 Isover insulation to first 400mm (minimum) of floor void from adjacent wall
- 10 Mesh
- 11 Continuous bead of Gyproc Sealant
- 12 Existing window
- 13 27mm Gyproc ThermaLine plus used at window reveals Where thermal laminate thickness is greater than window frame width, the plaster should be removed and Gyproc DriWall Adhesive used to fix the board
- 14 Existing internal wall with plaster finish
- 15 Indicative timber section fixed to structure and cover strip

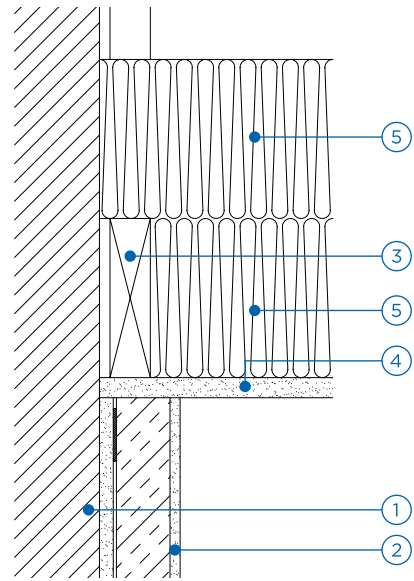
DriLyner RF junction detailing (continued)

5



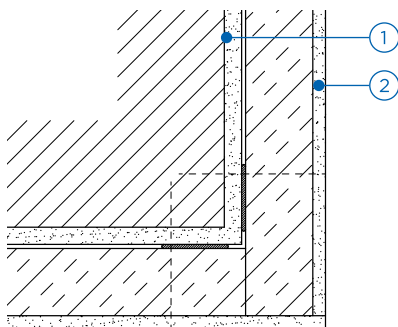
DriLyner RF external wall and partition junction for optimum thermal insulation. The existing partition is cut back to allow the lining system to be maintained for thermal insulation

6



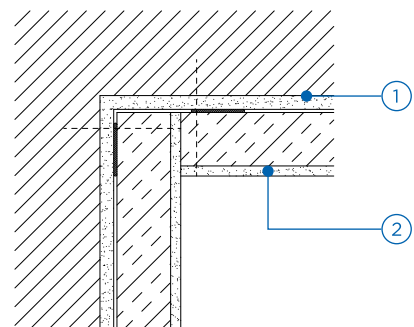
DriLyner RF external wall and roof junction

7



DriLyner RF external corner

8



DriLyner RF internal corner

- 1 Existing external wall with plaster finish
- 2 Wall lining system using Gyproc ThermaLine fixed with 25mm diameter blobs of Gyproc Sealant at 300mm centres in 5 vertical lines and 2 no. British Gypsum Nailable Plugs at mid-height

- 3 Existing timber ceiling joist
- 4 Existing ceiling
- 5 Isover insulation
- 6 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

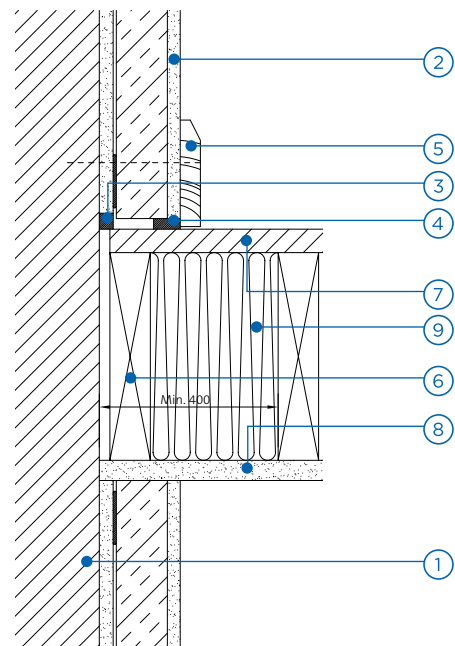
It is important to look at all areas within a property which will contribute to thermal bridging. Ultimately the home owner will need to agree for the additional work which will be required and would include the following:

- 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.



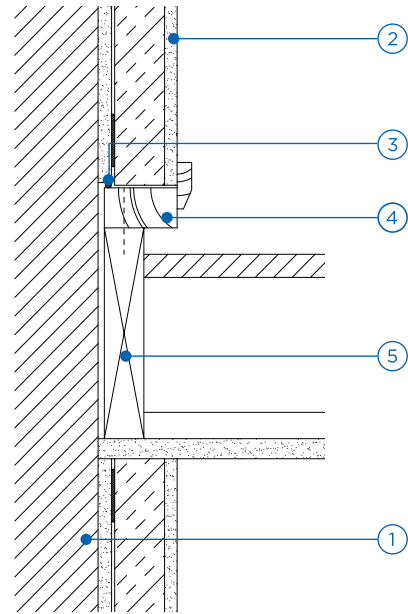
External wall and intermediate floor junction

- 1 Existing external wall with plaster finish
- 2 Wall lining system using Gyproc ThermalLine fixed with 25mm diameter blobs of Gyproc Sealant at 300mm centres in 5 vertical lines and 2 no. British Gypsum Nailable Plugs at mid-height
- 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant
- 4 Bulk fill with Gyproc jointing materials
- 5 Skirting
- 6 Existing timber joist
- 7 Existing floor boarding
- 8 Existing ceiling
- 9 Isover insulation to first 400mm (minimum) of floor void from adjacent wall

Staircase abutting an external gable end wall to a property

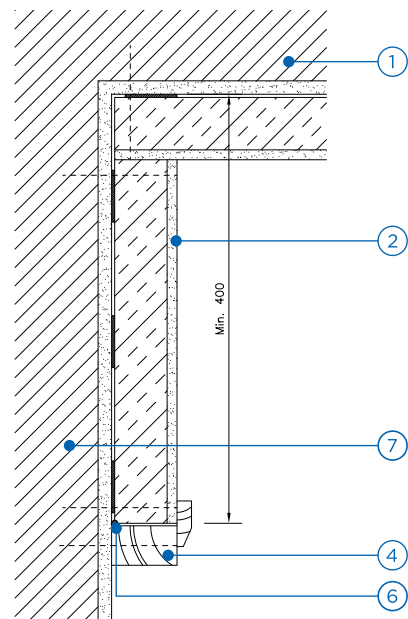
Installing a new lining which will encroach onto the width of a staircase will need checking against the Building Regulation requirements to ensure the minimum width of the staircase is maintained as defined and required within the regulations.

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 with plaster finish
- 2 Wall lining system using Gyproc ThermaLine fixed with 25mm diameter blobs of Gyproc Sealant at 300mm centres in 5 vertical lines and 2 no. British Gypsum Nailable Plugs at mid-height
- 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant

- 4 Indicative timber section fixed to structure and cover strip
- 5 Existing stair stringer
- 6 Continuous bead of Gyproc Sealant
- 7 Existing internal wall and plaster finish

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 DriLyner Installation

- Tape measure
- Spirit Level
- Mastic gun
- Hand saw
- Hammer
- Straight-edge

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 ThermaLine 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 ThermaLine 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 ¹ (typical failure load)
	Steel expanding cavity fixing e.g. HM6 x 52 into Gyproc ThermaLine SUPER or Gyproc ThermaLine PIR	15.75kg (63kg)
	Steel expanding cavity fixing e.g. HM8 x 55 into Gyproc ThermaLine SUPER or Gyproc ThermaLine PIR	17.75kg (71kg)
	Heavy duty plastic plug fixed through Gyproc WallBoard into masonry with 55mm minimum penetration	20kg (140kg)
	UX8 plastic cavity fixing	7.43kg (52kg)
	PD10 plastic cavity fixing into Gyproc ThermaLine SUPER or Gyproc ThermaLine PIR	6kg (43kg)

¹ 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

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

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Kent, DA8 1DE



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Bedford, MK45 5BY



Kirkby Thore

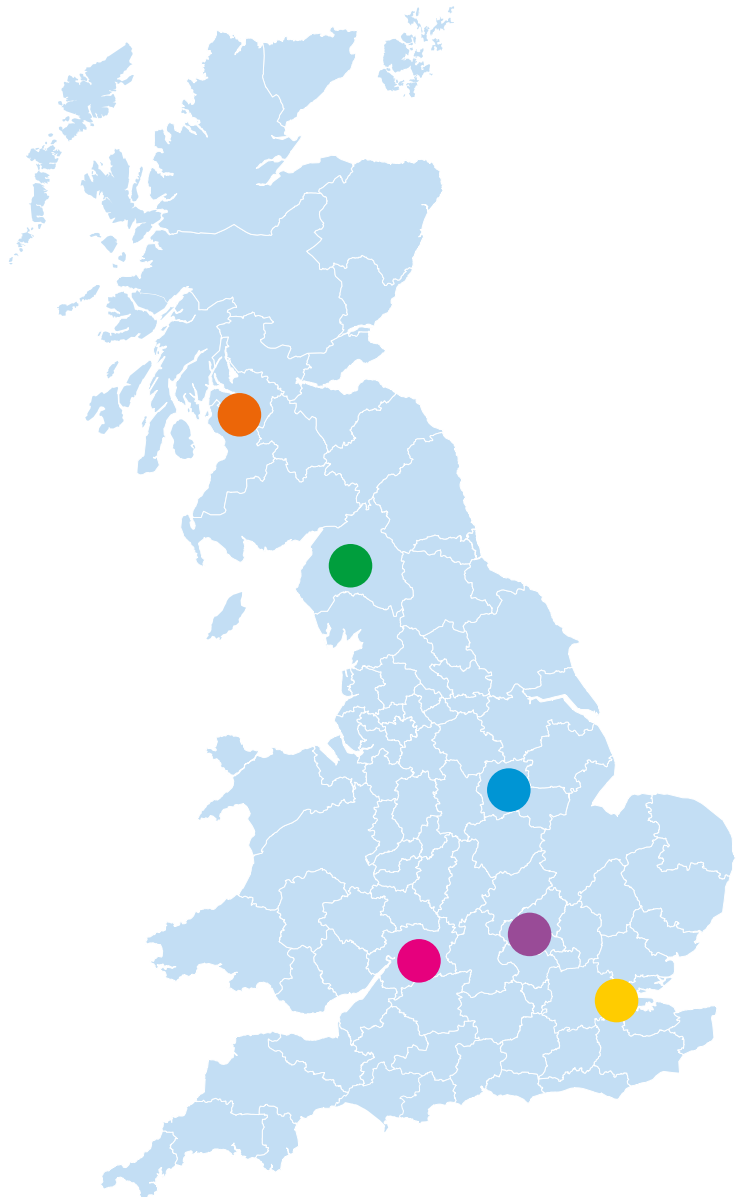
Kirkby Thorem Nr. Penrith,
Cumbria, CA10 1XU

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

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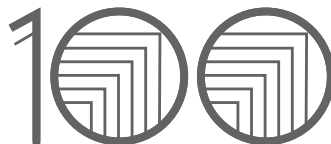
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SAINT-GOBAIN

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