

GypLyner UNIVERSAL

Internal wall insulation (IWI)
installation guide



British Gypsum
SAINT-GOBAIN

GypLyner UNIVERSAL

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 UNIVERSAL**; 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

Metal frame drylining systems

GypLyner **UNIVERSAL** is a cost-effective, virtually independent metal frame drylining system for lining walls.

General purpose and suitable for all internal non-loadbearing applications. This system is compatible with, and uses common components of, GypLyner **UNIVERSAL** ceiling lining and GypLyner **ENCASE** steel encasement system.



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

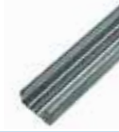


Gypframe metal components

Gypframe metal products

Gypframe GL1 Lining Channel

Length 2400, 2700,
3000, 3600mm



Gypframe GL9 Bracket

Length 295mm flat (max 125mm
standoff from wall)



Gypframe GL8 Track

Length 3600mm



Gypframe GL2 Bracket

Length 195mm flat (max 75mm
standoff from wall)



Gypframe GL3 Channel Connector



Fixing and finishing products

British Gypsum Wafer Head Drywall Screws

For metal-to-metal fixing less than
0.8mm thick ('I' Studs less than
0.6mm thick)



British Gypsum Drywall Screws

For fixing boards to stud framing less
than 0.8mm thick ('I' Studs less than
0.6mm thickness)



Gyproc edge beads

Protecting and enhancing board edges



Gypframe GL11 GypLyner Anchors

For fixing Gypframe GL2 or GL9
Brackets to concrete / masonry



Gyproc Sealant

Sealing air paths for optimum sound
insulation and reduced air leakage



Gyproc Control Joint

To accomodate structural movement.
Length 3048mm



Installation guidance

Step 1

Use a straight-edge (e.g. Gypframe GL1 Lining Channel) to determine the maximum undulation in the wall or service protrusion. This will determine the cavity depth.



Step 2

Mark chalk lines to the floor and ceiling to indicate the positioning of the Gypframe GL8 Track.



Step 3

Fix Gypframe GL8 Track to perimeters, with the longer leg towards the room side, at 600mm centres using appropriate fixings.



Step 4

Mark vertical lines on the wall at 600mm intervals to indicate bracket fixing centres.

Mark horizontal lines at 800mm centres to determine individual bracket position.

Position each bracket, ribs to the wall, and fix through bracket slot into the masonry wall using a Gypframe GL11 GypLyner Anchor.



Installation guidance (continued)

Step 5

Cut Gypframe GL1 Lining Channels to size and round-off ends with tin snips for an easier fit. Additional Gypframe GL1 Lining Channels may be required to pick up fixings for subsequent adjacent linings.

Friction fit Gypframe GL1 Lining Channel into the track.

Extend GL1 Channel where required by engaging ends over a GL3 Channel Connector.



Step 6

Bend bracket legs forward and fix each leg to the channel using a British Gypsum Wafer Head Drywall Screw. Insert screw through the hole in the bracket nearest to the back of the channel.

Avoid exerting any backwards or forwards pressure on the channels when screw fixing the brackets, otherwise a straight and true lining surface may not be achieved.



Step 7

Bend back protruding bracket legs to sit clear of the channel face.



Internal angles

Position a Gypframe GL1 Lining Channel tight into the corner in order to provide support for the lining.

Bend one bracket leg across the face of the Gypframe GL1 Lining Channel and fix with a British Gypsum Wafer Head Drywall Screw to secure and restrain the channel at the corner position.



Installation guidance (continued)

Board fixing

Fix boards to all framing members at 300mm centres using British Gypsum Drywall Screws from top to bottom and at 200mm external corners.

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

Select the appropriate length of fixing to provide a nominal 10mm penetration into the steel framing (dependent on board thickness).



Step 8

Adjacent linings to be fixed through previous plasterboard into the Gypframe GL1 Lining Channel behind.

Locate Gypframe GL8 Track tight to the wall at the corner position and fix through the lining into the channel at 600mm centres.

Continue boarding, fixing boards to all framing members.

Adjust slotted brackets (if necessary) as boarding proceeds to allow for board width tolerances.



Openings

Position a Gypframe Lining Channel either side of the opening to compensate for the thickness of the Gyproc ThermaLine board to be fixed into the reveal.

Install cut and bent track to form the head of the opening and fix to the side of the channel using two British Gypsum Wafer Head Drywall Screws.



Step 9

Position a short length of Gypframe GL1 Lining Channel midway above the opening and fix using two British Gypsum Wafer Head Drywall Screws.

Fix additional GL1 channels at 600mm centres depending on opening width.



Installation guidance (continued)

Providing pattressing for services and fixtures being applied to the lining system

Installing plywood / timber pattressing

It is important to ensure the correct pattressing is installed for electrical back boxes in addition to any further service fixtures that are required.

In addition, good forward planning through discussion with the homeowner will identify where extra pattressing is required for curtain tracks as well as cupboards which may be fixed to the wall lining.



British Gypsum service support plates allow the fixing of 18mm plywood with a nominal depth of 150mm depending on what area of fixing is required.



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.



Installation guidance (continued)

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 Dri-Wall Adhesive should be used to bond the Gyproc ThermaLine board to the masonry.

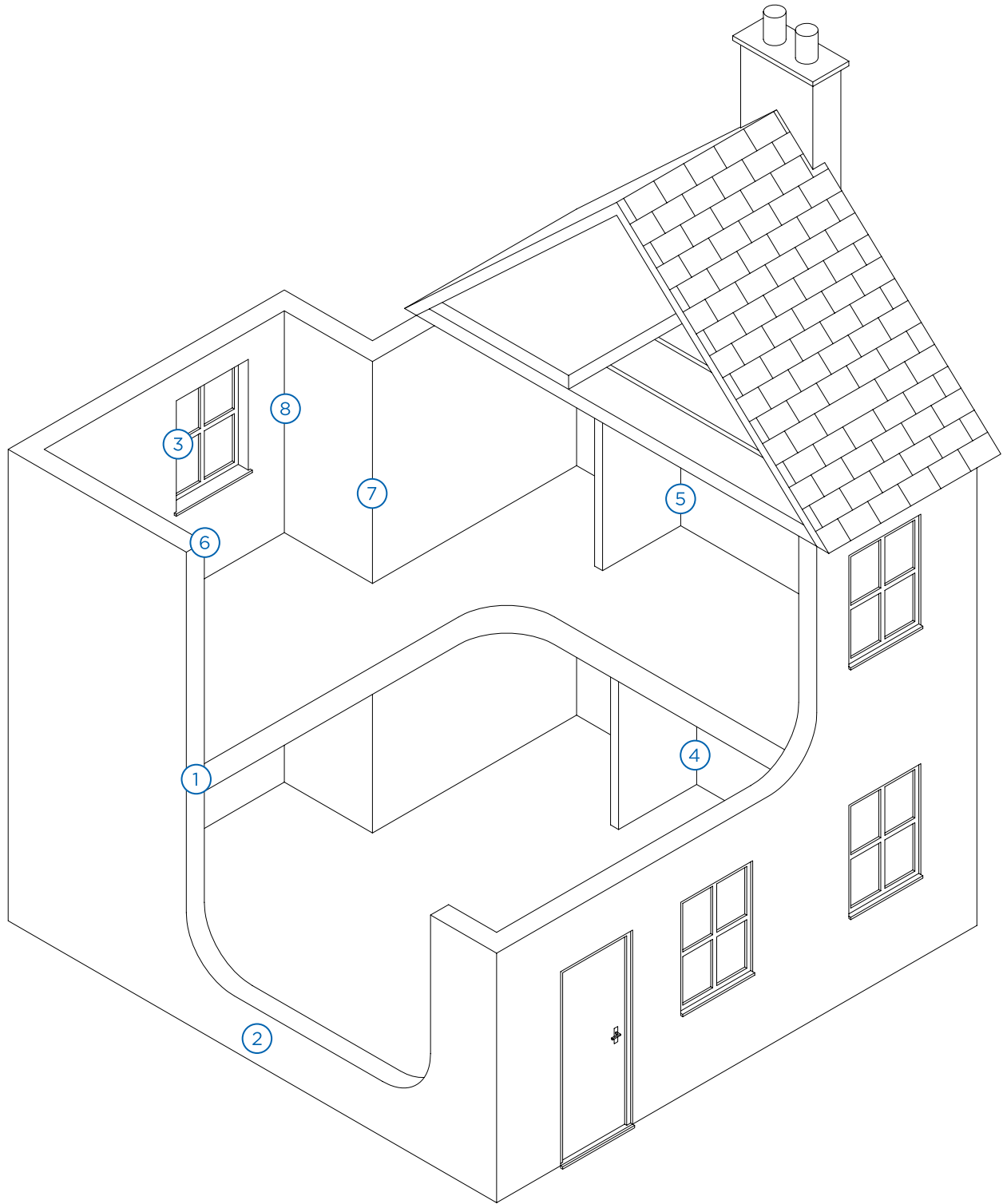
Where timber or MDF window cills are installed, ensure they are adequately sealed prior to completing the boarding around the window reveals. Where it is practicable and the depth of the cill allows, fix a Gyproc ThermaLine board before installing the window cill on top of this.

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.



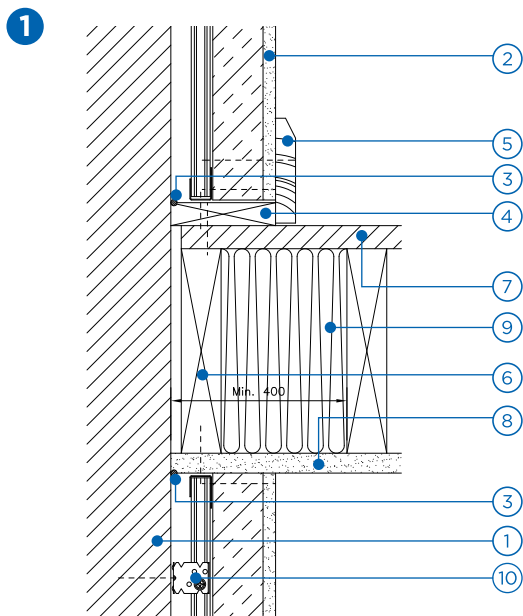
GypLyner UNIVERSAL junction detailing



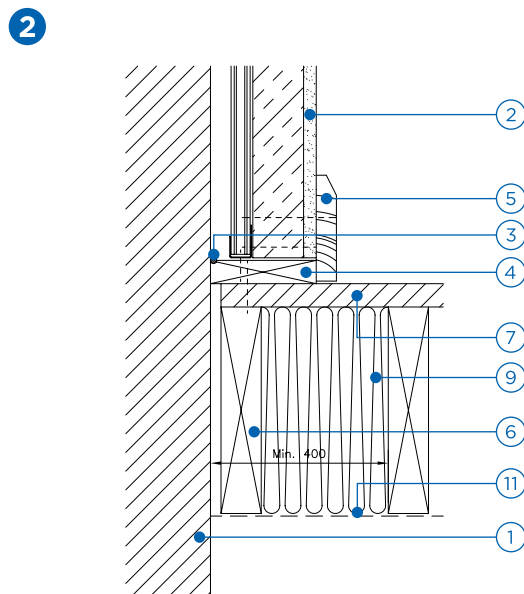
- 1 External wall and intermediate floor junction
- 2 External wall and ground floor junction
- 3 Window reveal with insulation
- 4 External wall & internal wall junction

- 5 GypLyner UNIVERSAL external wall and internal partition junction for optimum thermal insulation
- 6 GypLyner UNIVERSAL external wall and roof junction
- 7 GypLyner UNIVERSAL external corner
- 8 GypLyner UNIVERSAL internal corner

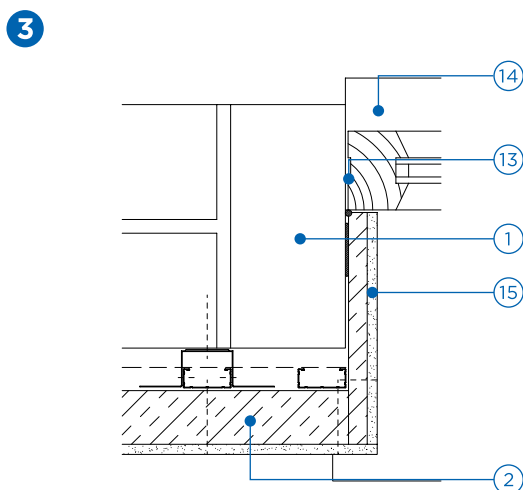
Please see following pages for full junction details



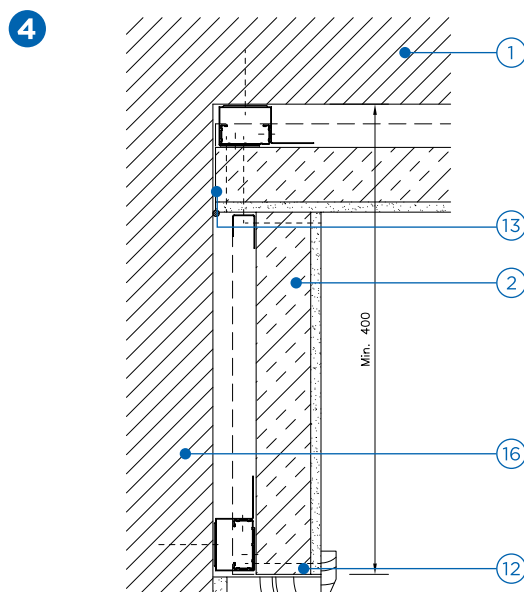
External wall and intermediate floor junction



External wall and timber ground floor junction



Window reveal with insulation

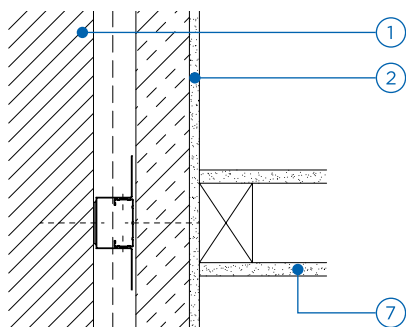


External wall and internal wall junction. The 400mm return is applied to both sides of the internal wall

- 1 Existing external wall with plaster finish
- 2 GypLyner UNIVERSAL 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 Timber batten to close perimeter gap in floor boarding
- 5 Skirting
- 6 Existing timber joist
- 7 Existing floor boarding
- 8 Existing ceiling

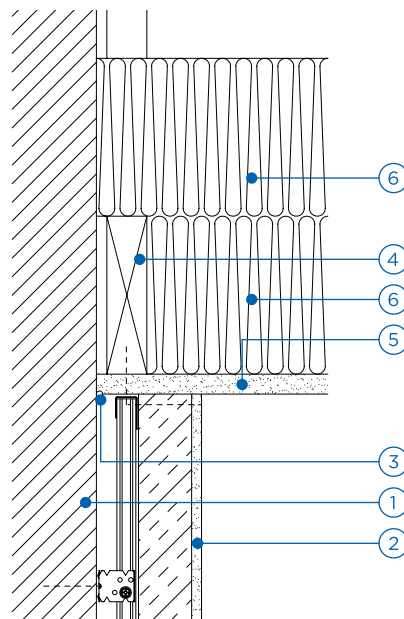
- 9 Isover insulation to first 400mm (minimum) of floor void from adjacent wall
- 10 Gypframe GL2 or GL9 Bracket
- 11 Mesh
- 12 Indicative timber section fixed to structure and cover strip
- 13 Continuous bead of Gyproc Sealant around window openings and wall lining perimeters
- 14 Existing window
- 15 Slimmer 27mm Gyproc ThermaLine plus fixed with blobs of Gyproc Sealant at 300mm centres in addition to mechanical fixings into the GL1 and GL8
- 16 Existing internal wall with plaster finish

5



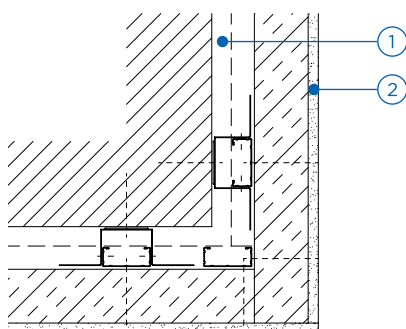
GypLyner UNIVERSAL external wall and partition junction for optimum thermal insulation. The existing partition is cut back to allow the lining system to be maintained for thermal insulation

6



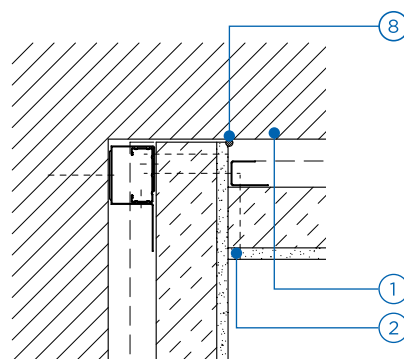
GypLyner UNIVERSAL external wall and roof junction

7



GypLyner UNIVERSAL external corner

8



GypLyner UNIVERSAL internal corner

- 1 Existing external wall with plaster finish
- 2 GypLyner UNIVERSAL 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 timber ceiling joist
- 5 Existing ceiling
- 6 Isover insulation
- 7 Existing partition cut back from external wall
- 8 Continuous bead of Gyproc Sealant around perimeter

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

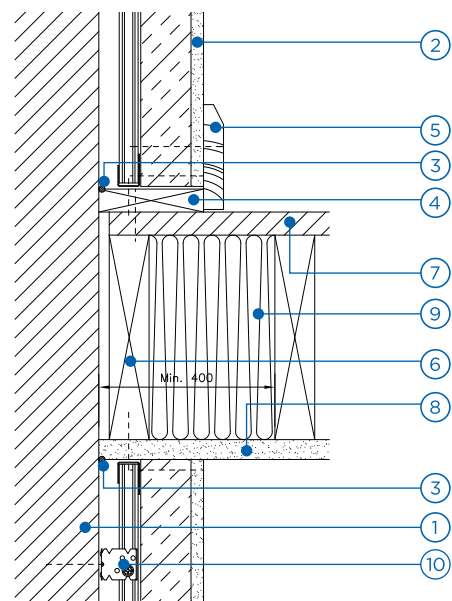
It is important to look at all areas within a property which will contribute to thermal bridging. Ultimately the home owner will need to agree for the additional work which will be required and would include the following:

- 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.



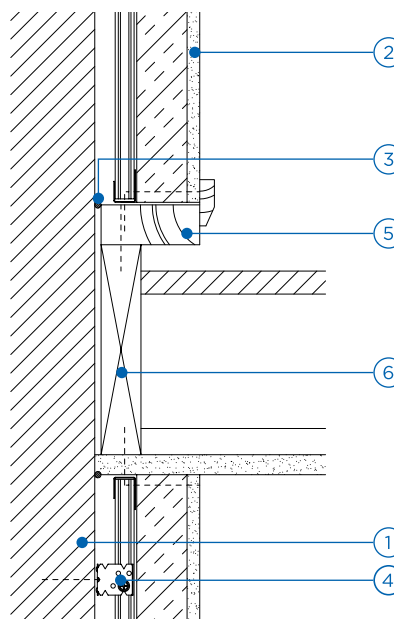
External wall and intermediate floor junction

- | | |
|--|---|
| 1 Existing external wall | 5 Skirting |
| 2 GypLyner UNIVERSAL wall lining system using Gyproc ThermaLine fixed with British Gypsum Drywall Screws at 300mm centres | 6 Existing timber joist |
| 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant | 7 Existing floor boarding |
| 4 Timber batten to close perimeter gap in floor boarding | 8 Existing ceiling |
| | 9 Isover insulation to first 400mm (minimum) of floor void from adjacent wall |
| | 10 Gypframe GL2 or GL9 Bracket |

Staircase abutting an external gable end wall to a property

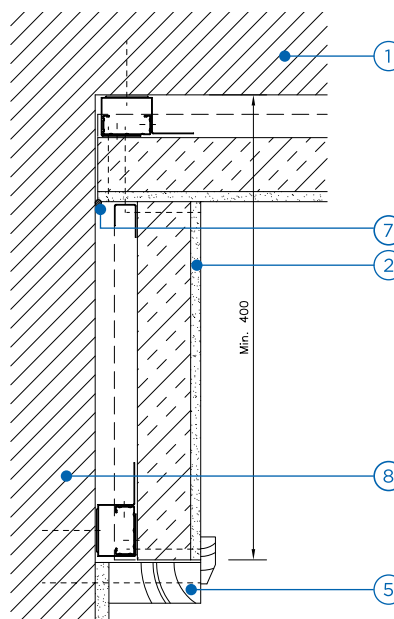
Installing a new lining which will encroach onto the width of a staircase will need checking against the Building Regulation requirements to ensure the minimum width of the staircase is maintained as defined and required within the regulations.

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 | 4 Gypframe GL2 or GL9 Bracket |
| 2 GypLyner UNIVERSAL wall lining system using Gyproc ThermaLine fixed with British Gypsum Drywall Screws at 300mm centres | 5 Indicative timber section fixed to structure and cover strip |
| 3 Gaps at perimeter sealed with continuous fillet of Gyproc DriWall Adhesive or continuous bead of Gyproc Sealant | 6 Existing stair stringer |
| | 7 Continuous bead of Gyproc Sealant around perimeter |
| | 8 Existing internal wall |

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
- Hammer
- Cordless drill or 110 volt drill
- Tin snips
- Mastix gun
- Hand saw

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)
	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 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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