



# Isover Optima IWI System Installation Guide

1 of 2 - Isover Optima IWI System details also available online

# Buildings Insulation

Technical Advice  
and Support Line



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## Advice on

- >> U-Value and Condensation Risk calculations for Constructions using Isover and British Gypsum products
- >> Product Application Information
- >> Product Performance

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Your environment. It's the nature of our business.

# Your environment, it's the nature of our business

We develop sustainable insulation solutions to protect both your built environment and the natural environment. To maintain our focus we have placed environmental responsibility at the heart of our business strategy.

Our vision to lead the UK mineral wool market in energy efficiency and acoustic insulation solutions will be achieved with products that meet the highest thermal, acoustic and fire safety performance levels. We will meet changing regulations first and surpass current regulations for those that wish to excel. Our products will provide best value solutions for the residential, commercial, RMI and technical building environments, be safe to use and help to protect the environment.

At the heart of our strategy is our 3 Point Plan for environmental sustainability. This dynamic plan adopts the life cycle concept, guides our efforts to continuously improve the way in which our products and processes impact your environment, and seeks to ensure that Isover and our products use...

- ★ **Less Materials**
- ★ **Less Energy**
- ★ **Less Emissions**

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# The Isover Optima IWI System

## What is Optima?

The Isover Optima IWI System is a high performance solution for insulating new and older buildings from the inside. Essentially, it's an innovative dry lining system developed by insulation specialists Isover to significantly improve the thermal insulation of new and existing walls.

Our insulation products are renowned for their quality and reliability. The Isover Optima IWI System is designed specifically for applications where external or cavity wall insulation is simply not a viable option. The Isover Optima IWI System is an easy-to-install, cost-effective alternative for renovating and insulating external walls from the inside.

## Why choose Optima?

There are several key features that make the Isover Optima IWI System the perfect solution for interior thermal insulation of walls:

- Enhanced thermal performance
- Minimal thermal bridges
- Adjustable system to address all wall types and issues
- Dry, clean, lightweight system with minimal waste, enabling quick installation
- Can be fitted in all weather conditions
- Optional airtightness and moisture control feature
- Load bearing capacity

**NOTE:** A 25 year guarantee for Green Deal and ECO applications can be supplied via the Solid Wall Insulation Guarantee Association (SWIGA) framework.

## Isover Optima IWI System components



1



### **Isover Renovation Roll Thermal:**

A glass mineral wool roll designed for multiple applications associated with internal wall insulation. It can be applied as part of the Optima IWI system in full 1160mm form or in 400 and 600mm truss and joist applications. Isover Renovation Roll is pre-perforated to minimise onsite cutting.

2



### **Isover Optima IWI Supports:**

Specifically designed to reduce thermal bridging whilst maintaining support requirements. Isover Optima IWI Supports are easily fitted and fully adjustable to allow quick installation to a range of substrates.

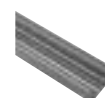
3



### **Isover Vario KM Duplex Membrane system:**

An innovative membrane system designed to manage moisture within frame and lining systems whilst maintaining or enhancing airtightness. Isover Vario KM Duplex membrane is part of a suite of components designed to protect the build system from moisture associated issues and provide superior air-tightness performance.

4



### **British Gypsum Gyframe GL1 Lining Channel:**

The British Gypsum Gyframe GL1 Lining Channel helps to form a framework within the Isover Optima IWI System to support the internal finishing boards. It's an established product, well known in the wall lining sector.

5



### **British Gypsum Gyframe GL8 Track:**

The British Gypsum Gyframe GL8 Track helps to form a framework within the Isover Optima IWI System to support the internal finishing boards. It's an established product, well known in the wall lining sector.

6



### **Isover Protect:**

An external treatment applied to the outside of the existing wall to minimise moisture ingress from external sources whilst retaining breathable properties. Optimises thermal performance.



# Introduction

This guide is designed to assist contractors in the installation of the Isover Optima IWI System. It should be used in conjunction with the technical approval certificates (CSTB, IAB and BBA). It may also be used to support training in the use of the Isover Optima IWI System.

## Survey Protocol

### **Environmental, Health and Safety**

Contractors are recommended to provide suitable identification prior to entering a property, and obtain written approval from the client prior to undertaking any survey and subsequent works.

Contractors must comply with the Health and Safety at Work Act 1974. Refer to the Health and Safety Authority website for further information: [www.hse.gov.uk](http://www.hse.gov.uk). It is recommended that surveys are carried out in teams, where this is not practicable ensure that a colleague or other is advised on location and expected time of completion for survey / works.

### **Initial site survey**

Any survey for the installation of the Isover Optima IWI System should be conducted by a competent and trained\* individual to ensure the property is suitable for installation. The building must be assessed under the following criteria:

#### **Inspecting the exterior:**

The exterior of the dwelling should be surveyed initially to identify key characteristics of the building including the following:

- Determine the overall footprint of the dwelling
- Locate and quantify the number of vents including extract fans
- Identify the age band of the building (assess construction type and refer to meter box date)
- Confirm the orientation of the dwelling using a directional compass
- Record openings, vents, potential sources of moisture ingress
- The overall condition of the external substrate needs to be assessed to determine if the building is weather tight and protected from the elements
- Assess the condition and position of the DPC in relation to floor and ground levels

\* For application under the Green Deal, installers and surveyors require specific system training in accordance with the relevant Public Available Specification (PAS).

An example of a Survey Record Sheet can be found in **Appendix B**.





## ***Inspection of the interior:***

Checking that no vents have been blocked and assess the implications of internal insulation measures.

### ***Record:***

- Extensions and porches
- Construction types of walls, floors (solid or suspended) and roofs, noting condition, existing linings and insulation
- Dimensions (ceiling heights & external wall area, wall thickness, floor height, roof pitch)
- Internal features and abutments, e.g. fireplaces and chimney stacks, party walls, internal partitions, intermediate floors and ceilings, staircases, internal doors
- Combustion appliances, chimneys and flues
- Unheated spaces – identifying walls between heated and unheated space including sun rooms, porches, utility rooms and garages
- Doors and windows - identify opening dimensions, frame thickness, reveal details and materials
- Built-in fixtures and fittings, heavy wall mounted elements, e.g. televisions and radiators
- Plumbing and electrical services - note location, age and condition of all heating and electrical appliances and services
- Ventilation system – if applicable note all ventilation details (duct openings, etc)
- Check for any evidence of infestation by rodent, bird, bat, insect or wasp
- Note any signs of condensation, damp, mould growth or fungal decay of timber members. If any of these signs are apparent refer to a technical expert for an independent survey prior to installation of the Isover Optima IWI System
- Separating walls – where separating walls are present detail the junction type and note any features to which the application of additional thermal wall lining can be hidden
- Note any redundant chimney stacks and ensure they are ventilated to prevent moisture issues
- Check internal timbers with a moisture meter to ensure moisture content does not exceed English Heritage guidelines (maximum 20% moisture content)



#### ● ***House type:***

Determine if the building is a semi-detached, end terrace, mid terrace, apartment, etc in order to assess the total area which requires treating.

#### ● ***Substrate condition***

Determine if the existing substrate is suitable for fixings which will allow the British Gypsum Gypframe GL1 Lining Channel to be attached. This can be determined by testing an area with the proposed fixing prior to installation. Recommended fixing types can be found in **Appendix A**.

#### ● ***Moisture***

When assessing the existing substrate, it must be determined if moisture is a pre-existing issue.

### **External Moisture Ingress:**

Moisture is often found to ingress through poor external substrate. Identification of issues of this type need to be addressed by an appropriate expert prior to any dry lining taking place. Once rectified, the external surface should be treated with Isover Protect to stop future moisture ingress.

### **Damp Proof Course (DPC):**

Depending on the age of the building, there might not be a Damp Proof Course (DPC) in place. This also needs to be addressed by an appropriate expert prior to the installation of the Isover Optima IWI System. Assess the condition and / or presence of a DPC.



### Light Internal Surface Condensation:

Light surface condensation on the substrate will be addressed when the Isover Optima IWI System is installed in conjunction with Isover Vario KM Duplex Membrane, provided the room is adequately ventilated.

### Possible sources of moisture ingress:

- Deterioration of weatherproof exterior finish or exposed wall substrate
- Poor pointing
- Leaking services or leaking roof gutters
- Down pipes
- Leaking roof coverings, flashings, etc
- Poor sealing around openings



## Building Timber Element Inspection

If signs of decaying or rotting timbers are noted during the initial survey:

- 1 Establish the size and significance of the issue. In particular, if structural timbers are affected, a detailed investigation should be carried out by a suitably qualified person to ascertain whether structural repairs are necessary – and if they are, steps must be taken to secure structural integrity.
- 2 Locate and eliminate sources of moisture.
- 3 Promote rapid drying of the structure.
- 4 Remove rotted wood, where affected by dry rot cut away timber approximately 300–450mm from the last evidence of fungus or rot. Where affected by Wet rot, apply localised preservative treatment only to timbers that are likely to remain damp for long periods (this work should be carried out by a suitably qualified person).
- 5 In replacement work, use preservative-treated timbers.
- 6 Introduce support measures, for example ventilation pathways between sound timber and wet brickwork, or, where ventilation is not possible, provide a barrier such as a damp-proof membrane or joist-hangers between timber and wet brickwork.

If there are major issues with damp or moisture then a detailed investigation needs to be carried out by a structural engineer.

### ● Construction type:

To enable an accurate u-value to be calculated, the existing construction type needs to be determined. Please see an example of a detailed survey sheet to help record structural make up in **Appendix B** at the back of this guide.

### ● Existing services:

It is recommended, where possible, that all existing services are brought to the front of the Isover Optima IWI System. A full inventory checklist of the existing services is to be carried out. Typical services to be addressed: sockets, light switches, plumbing services, internet points, radiators, etc. When moving or disturbing any existing services it is essential to engage with a suitably qualified professional to carry out any required changes. Services may need to be replaced if they are sub-standard or have reached the end of their recommended life.

### ● Existing ventilation:

In order to provide adequate fresh air and to minimise condensation, adequate ventilation must be provided. When looking at the existing ventilation it is important to determine the current method of ventilation in the building. This could be wall vents, trickle vents, MVHR, extract fans, flues etc.

**NOTE:** It is recommended that an evaluation to ascertain the potential of moisture issues associated with IWI application is carried out for individual measures to determine internal moisture membrane performance criteria. This calculation should be carried out by a suitably qualified professional using appropriate software (WUFI). This service can be supplied by Isover UK.



# Ventilation and Air Quality

It is essential not to interfere with the existing ventilation unless replacing it with a superior system that has been specified by a suitably qualified professional. Please refer to appropriate building regulations to address ventilation requirements. Remember, when upgrading the thermal and airtightness properties of a dwelling in terms of ventilation: 'build tight, ventilate right'.

Indoor air quality may be affected by internal sources of moisture, such as cooking and cleaning, Carbon Monoxide (CO) from combustion appliances, Carbon Dioxide (CO<sub>2</sub>) from human respiration, odours, allergens (dust mites). Indoor air quality may also be affected by volatile organic compounds (VOCs) from paint, furnishings and household chemicals.

Ventilation is necessary to maintain a fresh, clean, comfortable and healthy indoor environment. Traditionally, buildings have relied upon infiltration to support adequate levels of fresh air, however, infiltration cannot always ensure delivery of fresh air where required but can allow heat loss and create discomfort due to draughts. While it is always important to consider the ventilation strategy of a building, it is particularly critical to assess the effectiveness of the system when making alterations to a building especially where the thermal envelope and/or airtightness is affected. Building regulations require a minimum standard of background ventilation with intermittent fans to wet rooms and facilities for purge ventilation (e.g. openable windows).

## **Recommendations:**

Where upgrading existing buildings and in the absence of additional design advice it is imperative that ventilation levels are not reduced by the works. Existing vents should be checked for blockages and cleared as necessary. Where works are likely to significantly impact the overall airtightness of the dwelling the total ventilation design strategy should be reviewed by a suitably qualified professional and alterations made as necessary to ensure the continued provision of fresh air, in line with Building Regulations Part F.

Frequency and ease of use as well as cost optimisation of the total installation including maintenance have a major impact on the choice of ventilation strategy. Natural ventilation is often considered an ideal, however, this should be considered in the context of the overall design. Appropriate ventilation is dependant on sensible occupant behaviour as well as an effective layout and design. Cross ventilation is an important function of an effective natural ventilation strategy but is still limited being dependant on air pressure externally.



In order to ensure an improvement in energy performance while maintaining air quality, consideration may therefore be given to mechanically assisted technologies such as with mechanical heat recovery (MVHR) or demand control ventilation (DCV).

## ● **Window and door openings:**

A full inventory of all window and door types needs to be carried out prior to installation. Dimensions of the window reveals need to be recorded and also the shape, angle and width of the opening. It is essential to check escape windows to determine that they will not be interfered with if any dry lining is to be carried out.

As noted above, care must be taken to ensure that required width and head heights are maintained to ensure ease of access and safe exit are maintained. Ensure escape windows can be opened in accordance with window manufacturer's details. Ensure that additional reveal insulation does not block existing trickle vents in windows. The Isover Optima IW1 product calculator is a useful tool to note all window and door dimensions whilst calculating product requirements. Visit [www.isover.co.uk](http://www.isover.co.uk) to find out more.

**NOTE:** Ensure all combustible appliances are fitted and checked by a certified 'Gas Safe' technician post installation in line with Building Regulations Part J.



# Material safety and storage

## ● **Metal:**

- Sharp corners or edges may lacerate skin and banding may spring back and cut when tension is released
- Metal sections which have been fixed to the floor or side wall, ready for plasterboard fixing, may have exposed sharp edges so care should be taken to protect persons from accidental contact (slips, trips or falls)
- Avoid prolonged contact with skin and wear protective clothing when handling metal sections. Use cut resistant gloves when handling steel sections
- Metal profiles are supplied in bundles and strapped together in large packs for forklift truck off loading. These should be stacked in a safe and stable manner. The bands or straps should not be used for lifting
- Consider all risks associated with manual handling and employ good lifting techniques
- Metal sections are not designed to support body weight, fixers must work from an independent support system
- Do not store outside for long periods

## ● **Insulation:**

- Avoid unnecessary handling of unwrapped product
- Store in original packaging in a dry place
- If cutting material, use sharp hand tools and avoid power tools
- Ensure adequate ventilation of workspaces
- Keep work areas clean. Use water sprays to dampen area prior to sweeping, or use vacuum cleaning



## ● **EURIMA Health and Safety Information**

All Isover products contain a set of text and icons to show important handling and health and safety information. These icons follow latest EURIMA (European Mineral Wool Manufacturers Association) guidelines and have been developed to ensure that health and safety information is shown in a consistent, common format for all insulation users. UK Health & Safety guidelines should also be followed.

### ● **Safety precautions**



Ventilate working area if possible.



Rinse in cold water before washing.



Waste should be disposed of according to local regulations.



Wear goggles when working overhead.



Cover exposed skin. When working in unventilated area wear disposable face mask.

For more information please visit [www.eurima.org](http://www.eurima.org)



# Installing the Optima IWI System

## FLOOR

### Step 1

Measure and mark a distance from the wall equivalent to the thickness of the insulation being applied. The line marked is to the front face of the Gypframe GL8 Track.



### Step 2

Drill directly through the Gypframe GL8 Track into the floor to create a fixing cavity or fix directly, i.e. timber applications.



### Step 3

For masonry applications, fix a British Gypsum Gypframe GL11 Gyplyner Anchor (plugged screw) through the channel and screw tight. Alternatively, if fixing to timber, fix directly through the Gypframe GL8 Track using appropriate British Gypsum fixings.



## CEILING

### Step 4

Measure and mark a distance from the wall equivalent to the thickness of the insulation being applied. The line marked is to the front face of the Gypframe GL8 Track.



### Step 5

Locate ceiling joists, then screw directly through the ceiling channel into the ceiling joist using appropriate fixings.





# Installing the Optima IWI System

## WALL CHANNEL

### Step 6

Measure and mark a line 1300mm from the floor.



### Step 7

Position the base of a British Gypsum Gypframe GL1 Lining Channel along the line and drill directly through it.



### Step 8

Push a British Gypsum Gypframe GL11 Gyplyner Anchor through the channel and screw tight. Use a spirit level to ensure the channel is level and apply additional fixings at 600mm centres to fix in a horizontal plain.



### Step 9

Push fit the Isover Optima IWI Support into the wall channel.



Position bottom edge on the lip of the GL1 Lining Channel and snap into position.





# Installing the Optima IWI System

## WALL CHANNEL (Continued)

### Step 10

Once in place, slide the supports to 600mm centres to form stud spacings. This may be reduced to 400mm centres when additional loads are required.



## INSULATION INSTALLATION

### Step 11

Unroll the Isover Renovation Roll Thermal and cut to the required length to push fit behind the floor and ceiling channels, allowing an extra 10mm length.



### Step 12

Position the top of the mat flush to the ceiling and behind the ceiling channel and then skewer the mat over the Optima IWI Support.



### Step 13

Position the bottom of the mat flush to the floor and behind the floor channel.





# Installing the Optima IWI System

## PREPARING THE STUDS

### Step 14

Measure the height of wall from floor to ceiling. Measure and mark the corresponding height against the stud (-10mm) to allow for movement and positioning within the floor and ceiling channels.



## PREPARING THE VERTICAL STUDS

### Step 15

Trim off any excess length using tin snips.



**NOTE:** Studs may become slightly mis-shapen during cutting. Square off the ends with a light hammer tap. This allows them to run more freely in the floor and ceiling channels.



## ATTACHING THE FIXING CLIPS TO THE VERTICAL STUDS

### Step 16

Locate the groove in the edge of the clip to the lip of the Gypframe GL1 Lining Channel at approximately the same height as the wall channel and support. Snap back the opposite end, keeping the clip in the "Open" position.





# Installing the Optima IWI System

## LOCATING AND FASTENING THE STUDS

### Step 17

Position the bottom of the stud into the floor channel. The stud should be at a slight angle to vertical to allow the top end to be positioned in the ceiling channel.



### Step 18

Square up vertically and slide the fixing clip into position over the support.



### Step 19

Push the fixing clip onto the support. Lock the fixing clip by rotating 90° clockwise.



### Step 20

Adjust vertically until plumb. When vertically aligned and at correct spacing, secure top and bottom of studs using a 13mm wafer head screw (additional support measure, not critical).





# Installing the Optima IWI System

## Additional loading

- Add a plywood panel between studs.



- Cut two lengths of British Gypsum Gypframe GL8 Track (approximately 150mm).

- Screw directly onto vertical stud using 13mm wafer head screws.



- Cut a length of ply to fit between studs.

- Screw directly through the channel to fix ply using appropriate fixings.



For further fixing and loading information please refer to **Appendix A**.



# Installing the Optima IWI System

## WINDOW REVEALS

### Step 21

Fix a vertical stud either side of the window and aligned flush with the reveal. Fix a wall channel approximately 200mm below the sill.

**NOTE:** On both sides of the window, the fixing clips are fastened to the side of the vertical stud away from the window reveal – so that the thermal laminate board can sit flush against the side of the stud and window reveal.



### Step 22

Fix a British Gypsum Gypframe GL8 Track horizontally between the two vertical studs, level with the top of the sill.



### Step 23

Cut a section of British Gypsum Gypframe GL8 Track that is approximately 150mm longer at each end than the gap between the two vertical studs. Mark the top of the channel where it passes the vertical stud.



### Step 24

Make two cuts to the channel, one on the shorter side in line with the mark, the second on the longer face at an angle of approximately 45° to the mark.



### Step 25

Having made the two cuts, bend each end of the channel at 90° and fit around each vertical stud at each side of the window.





# Installing the Optima IWI System

## WINDOW REVEALS (continued)

### Step 26

Align the support channel with the sill / head.



### Step 27

Secure with 2 x 13mm wafer head screws (1 top, 1 bottom).



### Step 28

If the window is wider than 600mm, add additional vertical studs using the British Gypsum Gypframe GL8 Track as a securing point.



### Step 29

Board out using 27mm British Gypsum Gyproc ThermoLine PLUS to eliminate the risk of cold bridging and condensation. Use British Gypsum Gyproc Sealant to bond the board to the reveal and 36mm British Gypsum Drywall Screws to fix to the metal frame.

**NOTE:** Reveal lining board to be fitted after steps 30 to 34 (Fixing Vario Membrane).



## FIXING VARIO MEMBRANE

### Step 30

Apply Vario Pro-tape to the face of the British Gypsum Gypframe GL8 Track.





# Installing the Optima IWI System

## FIXING VARIO MEMBRANE (continued)

### Step 31

Cut a length of Vario Membrane (+ 50mm) to fit ceiling to floor and apply in vertical lengths starting from the corner.



### Step 32

To construct an airtight corner, fold a piece of Vario Membrane in half (vertically), secure one half to one corner extension. Fold the other half across and bond to the opposite extension.



### Step 33

Attach the next sheet of Vario Membrane, remembering to retain a square overlap (100mm) of each sheet of Vario Membrane. Seal using Vario KB1 Tape.



### Step 34

Run a bead of Vario DS Sealant against ceiling and floor channels and then use fingers to seal Vario Membrane to the ceiling and floor.



**NOTE:** Any overlap should be less than the thickness of the wall board and the ceiling.



Refer to [www.isover.co.uk](http://www.isover.co.uk) for installation videos, component calculator and further product details.

**NOTE:** It is recommended that an evaluation to ascertain the potential of moisture issues associated with IWI application is carried out for individual measures to determine internal moisture membrane performance criteria. This calculation should be carried out by a suitably qualified professional using appropriate software (WUFI). This service can be supplied by Isover UK.



# Installing the Optima IWI System

## BOARDING

### Step 35

Fix British Gypsum 12.5mm WallBoard in accordance with standard guidelines.

**NB.** All breathable boards are compatible for use with the Isover Optima IWI System.



## Specific Details

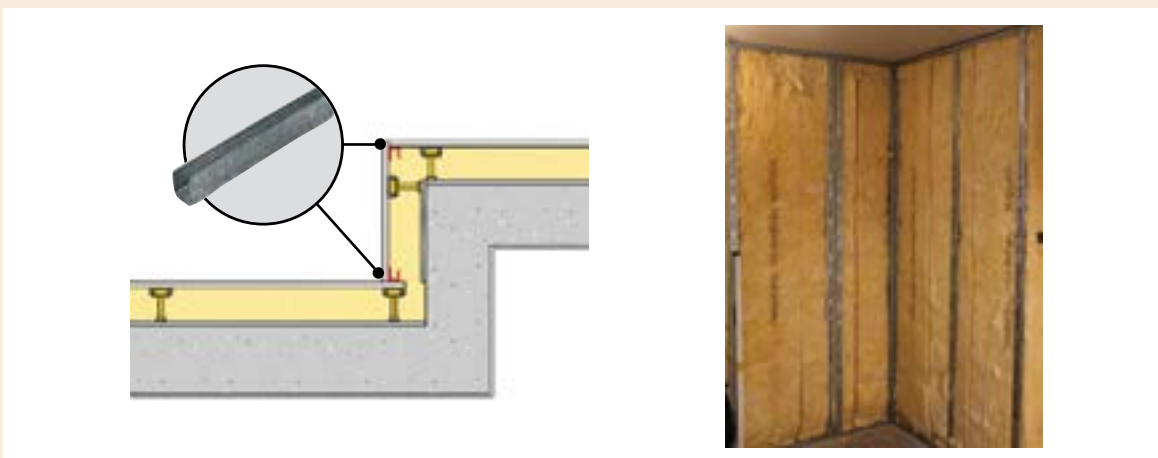
Attention to detail ensures that Isover's Optima IWI System performs to its designed capabilities to provide a warm and comfortable internal environment.

### ● *Internal and External Cornering Details:*

A British Gypsum Gyframe GL8 Track can be used for corner detailing. This allows for a secure joint that will not give way under force.

The Gyframe GL8 Track can be fixed back to a vertical British Gypsum Gyframe GL1 Lining Channel, forming a metal right angle corner profile.

### ● *Internal Corner Detail*





# Service penetration details

## Service penetration details:

In order to maintain the integrity of the Isover Vario Membrane System, all openings for service penetrations should be:

- Kept as few in number as possible
- Kept as small as practical
- Refer to Vario Installation Guide for penetration sealing applications

## Framing surrounds for openings

Where service components such as ducts are required to penetrate the construction, their position should be pre-determined. Ducts can be supported by the wall or by the original structure dependent on size, weight and build program.

## Access to Services

From a purely practical standpoint, adequate provision needs to be made to ensure access to services for maintenance purposes.

## Installation of services

The installation of services should be carried out in accordance with all available standards, guidelines and recommendations. Cables should be protected by conduit, or other suitable precautions taken, to prevent abrasion when they pass through the metal frame. Switch boxes and socket outlets can be supported on brackets formed from Gyproc Gyframe 99 FC 50 Fixing Channel fixed horizontally between the studs.



Additional framing can be installed as required to support heavy fixtures. This can be done using plywood patres detailing, as detailed earlier. For entire wall applications, British Gypsum Rigidur H can be applied, see **Appendix A**.

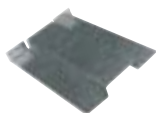
## ● Components



**British Gypsum Gyframe 99 FC 50 Fixing Channel**  
Length (mm): 2400 Code: 5200200481



**British Gypsum Gyframe 150 FC 90 Fixing Channel**  
Length (mm): 1197 Code: 5200414722



**British Gypsum Gyframe Service Support Plate**  
Length (mm): 130 Code: 5200004447 Quantity: Box of 100

**NOTE:** Gyframe Service Support Plate may only be installed over the top of the Vario Membrane.

**SOURCE:** The British Gypsum SITE BOOK – [www.british-gypsum.com/pdf/SB07\\_SITE\\_BOOK\\_07.pdf](http://www.british-gypsum.com/pdf/SB07_SITE_BOOK_07.pdf) (pages 74 and 98).



# Finishing methods

## Construction tips

- Ensure that boards are securely fixed with no steps between adjacent boards. The correct fixings must be used and properly located
- Drive home any protruding screw heads using a hand screwdriver prior to spotting and jointing
- Ensure site conditions are suitable: jointing materials must not be used at, or subjected to, temperatures below the minimum specified on packaging during application, setting or hardening
- Pre-fill gaps between boards greater than 3mm, prior to taping with Gyproc Joint Tape
- Select the right jointing material(s). Note that Gyproc Easi-Fill 45 is only suitable for hand application
- Choose between hand or mechanical application
- Choose joint reinforcement method
- To achieve a smooth continuous crack-resistant surface, use of tapered edge plasterboard and Gyproc Joint Tape is widely regarded as best practice
- Gyproc Paper Joint Tape must be used to achieve performances for all fire resisting systems

## Step 1

### Hand jointing – Tapered Edge Boards

Bed Gyproc Joint Tape firmly into the appropriate grade of Gyproc jointing compound. If Thistle ProTape FT50 is used, bedding is not required but the filling material should be pressed through the holes in the tape, particularly if there is a gap between the board joints. This is important to achieve a satisfactory appearance to the finished joint.



## Step 2

Trowel apply two or three applications of jointing compound, allowing each to set or dry before the next application, feathering each out beyond the previous application. Make an equal number of applications to screw / nail spots. Sand each joint application as required to achieve a smooth surface. Setting materials (e.g. Gyproc Joint Filler, Gyproc Easi-Fill) can be overcoated when set but not dry. Air-drying materials (joint cements) must be dry before overcoating.



## Step 3

At board joints, where cut edges or square edge boards occur, the joint treatment is inevitably raised above the board surface and is more difficult to conceal. In this situation the secondary filling stage is omitted, and joint treatment is feathered out further in order to conceal the joint.



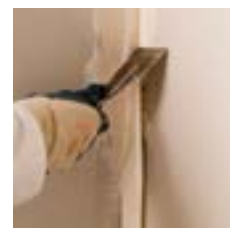


## Finishing methods (continued)

### Step 4

#### Hand jointing – Internal Angles

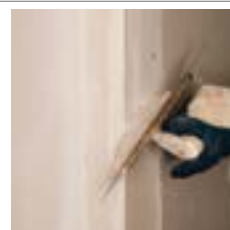
At internal angles, crease Gyproc Joint Tape to the angle to provide reinforcement and bed firmly into jointing material using a taping knife and feather out. Allow jointing material to dry then lightly sand, if required, to remove any minor imperfections. Apply final coat of jointing material and feather out beyond previous application. Allow to dry, then lightly sand.



### Step 5

#### Hand jointing – External Corners

At external angles use Gyproc Corner Tape or Gyproc No-Coat Ultraflex 325, or where additional protection is required, use a Gyproc Angle Bead instead. Use a Gyproc Edge Bead to protect cut ends of boards (e.g. at abutments). Use a setting compound (Gyproc Joint Filler or Gyproc Easi-Fill) except with Glasroc F FIRECASE or Glasroc F MULTIBOARD, see later.



### Step 6

Apply Gyproc Drywall Primer or Gyproc Drywall Sealer to the entire board surface and jointed areas to prepare the lining for final decorative treatment. Remove any surface dust and ensure background is dry prior to application.



Additional information regarding application and surface and product preparation is detailed in the British Gypsum **SITE BOOK**. This can be found in digital form at the following web address: [www.british-gypsum.com/pdf/SB07\\_SITE\\_BOOK\\_07.pdf](http://www.british-gypsum.com/pdf/SB07_SITE_BOOK_07.pdf) (pages 442 - 445).

#### Decorative finish:

It is important to note that only paint that allows the transmission of water vapour can be used in conjunction with the Vario system. This should be checked with the paint manufacturer or supplier.

#### U-values:

The required U-value can be determined using the following tables or alternatively by contacting the Isover Technical Advice and Support Line: **0115 945 1143**.

*SOURCE: The British Gypsum SITE BOOK – [www.british-gypsum.com/pdf/SB07\\_SITE\\_BOOK\\_07.pdf](http://www.british-gypsum.com/pdf/SB07_SITE_BOOK_07.pdf) (pages 442-444).*



## U-value calculation requirements

Existing Construction	Existing Construction U-value (W/m <sup>2</sup> K)	Optima IWI System Insulation	U-value with Optima IWI (W/m <sup>2</sup> K)
103mm single brick with 13mm internal plaster	3.17	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.30
215mm double brick with 13mm internal plaster	2.17	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.28
Partial fill masonry wall external render, 100mm block, 50mm cavity, 50mm partial fill insulation (0.038W/mK) 100mm internal block, 13mm plaster	0.55	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.20
Partial fill masonry wall external brick, 50mm cavity, 50mm partial fill insulation (0.038W/mK), 100mm internal block, 13mm plaster	0.54	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.20
Hollow Block 215mm (medium dense) with 15mm external render and 13mm internal plaster	1.83	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.28
Solid block 215mm (medium dense) with 15mm external render and 13mm external render and 13mm internal plaster	1.83	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.28
Concrete wall 200mm with 15mm external render and 13mm internal plaster	3.10	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.30
Timber Frame: 103mm Brick, 50mm cavity, breather membrane, 10mm OSD, 90mm timber frame (no insulation), 12.5mm plasterboard	1.19	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.26
Timber Frame: 103mm Brick, 50mm cavity, breather membrane, 9mm OSD, 90mm timber frame (90mm 0.04W/mK), 12.5mm plasterboard	0.42	100mm Isover Renovation Roll Thermal (0.035W/mK)	0.18

**NOTE:** All U-values stated have been calculated by a competent person in line with BR443: 2006 guidelines. They have not been subject to in use factors.



# Isover Protect Application Process

## PRECAUTIONS FOR USE

### 1 Refer to **BS.6150:2006**

Please refer to *BS.6150:2006* (code of practice for painting of buildings). This document defines the procedures to follow when carrying out works for interior and exterior buildings for new and existing structures. It summarizes the steps to follow such as: work's description, coordination between building contractor and contracting authority, work's implementation, and choice of suitable products and procedures of post work review. **To get more details or to become a Trained Contractor for Isover Protect, please contact the Isover technical advice line.**

### 2 Product Datasheet and Material Safety Datasheet

Please refer to this application manual for all applications. For more details about application conditions and product properties, reference product and material safety data sheets.

### 3 Observe all safety recommendations

In order to ensure the best results and a safe application, observe all the safety recommendations referred to in this manual and material safety data sheet.

## BEFORE APPLICATION

### 1 Weather forecast

For all external work, it is essential to check the weather forecast. Treated surfaces must stay free from rain for ideally 24 hours, but no less than four hours. Do not begin work if there is uncertainty regarding the weather.

### 2 Conditions for application



Do not apply during rain and protect for 24 hours following application.



Products must only be used when the ambient air temperature and that of the surface are both: 5°C <-> 30°C.

### 3 Tests

Due to the vastly varying nature of substrates being treated, it is essential to apply a test application on a small area to ascertain application rates before carrying out the works.

### 4 Check if the surface has already been treated with another product

Before any application, ensure the surface has not already been treated with another product because other treatments could lower the effectiveness of Isover Protect (see the 'drop test' in the next paragraph).

### 5 Check the porosity of the surface

Check the porosity of the surface to be treated using the 'drop test': put a drop of water on the surface to be treated, if the drop penetrates within one minute, the surface is porous. On the contrary, if the drop remains as a 'bead', the surface is non-porous or already protected.



# Isover Protect Application Process

## BEFORE APPLICATION (CONTINUED)

### 6 Surface preparation

Preparation of the surface before application is essential for the optimum result. Before applying Isover Protect, the surfaces need to be clean, dust-free and dry. This is essential to ensure the best performance from the treatment is obtained. If Isover Protect is applied to a dirty / damp surface, the treatment will not be efficient. The preparation of the surface must be in accordance to BS.6150:2006.

#### • Removal of Organic Growth

The first stage is to eradicate Moss, Lichen, Algae and Fungi. Although possible to remove much of this with a stiff brush, it is necessary to kill both spores and root growth, and therefore a remedial treatment is recommended. Refer to the Isover Technical Department for a suitable product.

#### • Removal of Atmospheric Pollution

Several difficulties can be experienced during the process of cleaning, brought about by the varying types of stone, brick and render structure. It is essential to:

- Use various cleaning products depending upon both the stone type and staining
- Initially carry out a preliminary test on a small area

However, for old dirt and pollution you may need to use a deep cleaning product and a final wash with clean water. It is a requirement to ensure that responsible parties accept the cleaned state of the surface before the application of Isover Protect. Once treatment with Isover Protect has been completed, it is not possible to carry out further pre-cleaning procedures.

### 7 Check pH

Check the pH of a surface before any product is applied. To ensure the optimum result, a surface needs to be near to neutral (pH 5 <-> 9).

- If the pH is acid (< 5), use an alkaline cleaner to restore the surface back to neutral pH after the first cleaning
- If the pH is alkaline (> 9), use a suitable neutralizing product

### 8 Shake the container

To fully disperse active ingredients it is essential to shake well before use.

### 9 Tools required for application

- High pressure washer
- Bush, roller, airless spray, HVLP spray, spray unit, firm bristle brush, clean cloth
- Tarpaulin and plastic sheeting
- Thermo hygrometer: allowing humidity, temperature, and dew point measurement
- Humidity tester: allowing measurement of the substrate water content.

As a Trained Applicator, it is necessary to be fully equipped.



# Isover Protect Application Process

## APPLICATION OF ISOVER PROTECT

### 1 Surface preparation

Surfaces need to be prepared in accordance with the previous section.

### 2 Application of the product

- Apply **Isover Protect** with:
  - Roller (1 to 2 crossed applications without over applying)
  - Brush (1 to 2 crossed applications without over applying. In the event of brush marks, homogenize with a roller)
  - Low-pressure spray (2 crossed applications)
- On vertical surfaces, apply from the bottom up
- Apply the product neat, **DO NOT** dilute or mix with any other product
- Ensure **Isover Protect** is applied to saturation in one application procedure '2 coats wet-on-wet'
- Remove any excess
- Optimum product performance will be achieved as follows:
  - After 1-2 days: water repellency achieved
  - After 4 days: oil repellency achieved
  - After 6 days: anti graffiti protection achieved
  - After 7 days: optimum performance achieved

#### • Coverage

Coverage depends upon a material's porosity. These figures are approximate and should be used as a general guideline:

- Limestone = 4m<sup>2</sup> / ltr
- Sandstone = 8m<sup>2</sup> / ltr
- Granite = 12m<sup>2</sup> / ltr
- Brick = 6m<sup>2</sup> / ltr
- Concrete Render = 5m<sup>2</sup> / ltr
- Terracotta = 7m<sup>2</sup> / ltr

#### • Storage

Lifespan: 2 years when kept in a cool, dry place, away from extreme cold; do not store in temperatures < 5°C.

#### • Packaging

5 litre containers.



# Isover Protect Application Process

## AFTER APPLICATION

### 1 Protect the surface

Once **Isover Protect** has been applied, protect the surface for 24 hours from heavy rain and excessive soiling using plastic sheeting if necessary. This cover should not be in contact with the surface.

### 2 Clean equipment

Immediately after application, clean all used tools and equipment with clean water.

### 3 Surface maintenance

Rain will naturally clean exposed surfaces so maintenance will not be as frequent as for non-treated surfaces.

## PRODUCT DESCRIPTION

**Isover Protect** is a water-borne fluoropolymer, designed to protect porous materials such as natural stone, brick, concrete, terracotta and cement render against water and oil penetration, all kinds of staining, atmospheric pollution as well as graffiti. A surface treated with Isover Protect will benefit from an increased life-span and will be easier to maintain.

## Advantages and characteristics

- Effective for > 10 years
- Can be applied to vertical and horizontal surfaces, both inside and outside
- Prevents the penetration of water, oily liquids and graffiti
- Anti-staining, anti-dirt
- Stops pollution particles from building up
- Limits moss and lichen growth
- Prevents structural deterioration resulting from the 'freeze-thaw' cycle
- Maintains maximum thermal potential
- Makes cleaning easier
- Prevents re-appearance of efflorescence salts due to the 'wetting-drying' cycle
- Non film-forming, allowing a surface to breath
- Non-hazardous and non-toxic
- Water-borne product
- Silicone-free
- Biodegradable > 95%
- UV-resistant, does not discolour a treated surface
- Invisible once dry
- Ready and easy to use
- Non-flammable
- VOC content = 0.0%

**NOTE:** *Isover Protect will need to be re-applied during a 25-year period.*



# Appendix A

## Fixing Types

### Masonry:

When fixing British Gypsum GL1 or GL8 metal profile to a masonry substrate, the use of Gypframe GL11 Gyplyner Anchors is recommended at 600mm centre fixings.

Assessment to be carried out of existing substrate for suitability.

### ● Component



#### **Gypframe GL11 Gyplyner Anchors**

##### Characteristics

Hammer-in fixing with wide flange to avoid the need for a separate washer.

##### Application

Designed for fixing metal profiles to masonry walls and concrete soffits.

**Length:** 40mm



### Metal to Metal:

When fixing metal elements together, the use of 13mm Wafer Head Drywall Screws is recommended.

### ● Component



#### **British Gypsum Wafer Head Drywall Screws**

##### Characteristics

Corrosion resistant self-tapping zinc plated steel screws with wafer cross-head. Supplied with screwdriver bits.

##### Application

Ideal for Gypframe metal-to-metal fixing less than 0.8mm thick ('I' studs less than 0.6mm thick).

**Length:** 13mm

### Plasterboard / Wood to Metal:

When fixing plasterboard or wood to Gypframe metal the use of Gyproc Drywall Screws is recommended.

### ● Component



#### **British Gypsum Drywall Screws**

##### Characteristics

Corrosion resistant self-tapping zinc plated steel screws with countersunk cross-heads. Supplied with screwdriver bits.

##### Application

Ideal for fixing boards to Gypframe metal framing less than 0.8mm thick ('I' studs less than 0.6mm thick).

The length of screw selected for a given boarding configuration should be sufficient to give a nominal 10mm penetration into Gypframe metal.

**Lengths:** 22mm, 25mm, 32mm, 36mm, 42mm, 50mm, 60mm, 75mm, 90mm.

**SOURCE:** Extracts from the British Gypsum **WHITE BOOK** – [www.british-gypsum.com/literature/white\\_book/white\\_book\\_digital\\_edition.aspx](http://www.british-gypsum.com/literature/white_book/white_book_digital_edition.aspx) (pages 535-539).



# Appendix A

## Safety of fixing items to drylined wall:

- Loads up to 10 daN (equivalent to 10 kg) can be attached directly to the plasterboard using picture hooks or similar, or plugs specially designed for this purpose.
- Loads of between 10 and 30 daN (equivalent to 10 to 30 kg) can be attached directly to the plasterboard using expansion plugs or butterfly fixtures at a minimum pitch of 0.40 m between two attachment points.
- Loads in excess of 30 daN (equivalent to 30 kg) must be attached by a system inserted directly in the structure.

In both of the latter cases, these loads should be limited to values equal to those introducing an overturning moment of 30 m.daN (equivalent to 30 kg.m) in the case of a static load (e.g. a washbasin) or 15 m.daN (equivalent to 15 kg.m) per linear meter in the case of a dynamic load (e.g., a shelf).

## Fixing to British Gypsum Rigidur board:

Loads of up to 55kg can be supported directly from the board without the need for additional grounds.

### ● Attaching flat loads:

Lightweight flat objects (e.g. pictures and mirrors) can be simply hung with picture hooks or wood screws fixed directly into the board, without the need for support noggings (see main table below for loadbearing capacity).

When fixing flat loads, any two points of attachment must have a minimum distance of 150mm from each other. Failure to do so will result in the halving of the weight of the load able to be supported.

### ● Cantilever loads:

Shelves and hanging cupboards can be attached with suitable cavity fixings. The choice of attachment method is dependent upon the weight, distance of the weight from the fixing, and dimensions of the object. When fixing cantilever loads, any two points of attachment must have a minimum distance of 150mm from each other. Failure to do so will result in the halving of the weight of the load able to be supported. Contact the fixing manufacturer for guidance when calculating cantilever loads.

### ● Heavy loads:

Heavy loads (e.g. wash basins, sanitary units and radiators) should be fixed to the Optima metal framing. Examples of the pull out capacity of various fixings in British Gypsum Rigidur are given in the table below:

Board lining	Fixing type	Safe working load per fixing <sup>1</sup>	Pull-out
Single layer Rigidur H	Single picture hook and masonry nail	12.5mm = 17kg 15mm = 18kg	
Single layer Rigidur H	Number 10 woodscrew		12.5mm = 30kg 15mm = 30kg
Single layer Rigidur H	'Fischer PD' nylon plug & screw		12.5mm = 20kg 15mm = 20kg
Single layer Rigidur H	'Fischer UX (8 x 50)' nylon plug & screw		12.5mm = 21kg 15mm = 27kg
Single layer Rigidur H	'Fischer HM8 x 55' steel cavity fixing		15mm = 49kg
Single layer Rigidur H	'Fischer KD6' steel cavity fixing		12.5mm = 58kg 15mm = 74kg

<sup>1</sup> Safe working loads were calculated using a safety factor of x4 for metal fixings and x7 for plastic fixings as per Construction Fixings Association guidance. Please refer to the fixing manufacturers' recommendations when mounting and fixing.

SOURCE: British Gypsum Rigidur H Datasheet – [www.british-gypsum.com/literature/data\\_sheets.aspx](http://www.british-gypsum.com/literature/data_sheets.aspx)

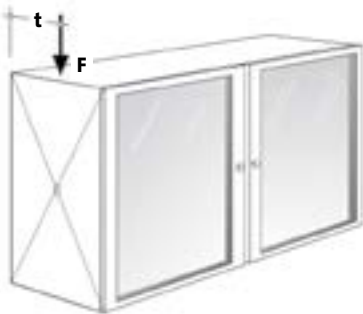
# Appendix A

Many different loads may be mounted to British Gypsum Rigidur H using suitable methods of attachment. Lightweight objects can be simply hung with picture hooks fixed directly into the board.

Depending on the type and capacity of the method of attachment, various vertical loads can be supported by British Gypsum Rigidur H. Shelves and hanging cupboards can be attached with suitable cavity fixings. The choice of attachment method is dependent upon the weight and dimensions of the object.

Loads with a weight of less than 30kg per point of attachment can easily be attached to the wall with suitable screws, and 55kg using a suitable wall plug, without the need for support noggings. Any two points of attachment must have a minimum distance of 150mm from each other, otherwise the weight of the load able to be supported must be halved. Heavy loads (e.g. sinks, sanitary units and radiators) should be affixed to the sub layer construction.




## Superior load-bearing capacity



Distance to the centre of the object mm (t)	Load per fixing kg (F)
100	80
200	73
300	70
400	63



## Load-bearing capacity (kg) <sup>1</sup>

Thickness mm	Picture hooks fixed by nails			Screw with continuous thread 5mm dia.	Toggle bolt
					
10	15	25	35	20	40
12.5	17	28	38	30	50
15	18	30	40	30	55

<sup>1</sup> Loads are also subject to fixing quality.

SOURCE: British Gypsum Rigidur H Datasheet – [www.british-gypsum.com/literature/data\\_sheets.aspx](http://www.british-gypsum.com/literature/data_sheets.aspx)



# Appendix A

## **When using standard British Gypsum Gyproc WallBoard please note the following details:**

There is a wide variety of fixing devices suitable for securing fixtures and fittings to the Isover Optima IWI system. 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 British Gypsum Gyproc WallBoard 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.


**TABLE 1a**

Reference	Detail	Description	Typical SWL <sup>2</sup> (typical failure load)
A		No. 10 woodscrew into Gyproc WallBoard	3kg (12kg)
B		Steel picture hook and masonry nail into Gyproc WallBoard	4kg (16kg)
C		Metal self-drive into single layer Gyproc WallBoard	6kg (24kg)
		Metal self-drive into double layer Gyproc WallBoard	8kg (32kg)
D		Steel expanding cavity fixing, e.g. M5 x 40, into Gyproc WallBoard (board thicknesses up to 12.5mm)	12kg (48kg)
		Steel expanding cavity fixing, e.g. M5 x 65, into Gyproc WallBoard (board thicknesses of 15mm)	18kg (72kg)
E		Gyproc Drywall Screw fixed through Gyproc WallBoard into 0.5mm Gypframe metal stud / Gypframe 99 FC 50 Fixing Channel	19kg (76kg)
F		Heavy duty plastic plug fixed through Gyproc WallBoard into masonry with 55mm minimum penetration	20kg (140kg)
G		Gyproc Jack-Point Screws fixed through Gyproc WallBoard into minimum 0.9mm Gypframe metal stud / Gypframe 150 FC 90 Fixing Channel	30kg (120kg)
H		No.12 self-tapping screws fixed through Gyproc WallBoard into minimum 0.9mm Gypframe metal stud / Gypframe 150 FC 90 Fixing Channel	50kg (200kg)
I		Steel expanding metal cavity fixing, e.g. M4 x 40, through Gyproc WallBoard into 0.9mm Gypframe metal stud / Gypframe 150 FC 90 Fixing Channel (board thicknesses up to 12.5mm)	40kg (160kg)
		Steel expanding metal cavity fixing, e.g. M4 x 65, through Gyproc WallBoard into 0.9mm Gypframe metal stud / Gypframe 150 FC 90 Fixing Channel (board thicknesses of 15mm)	50kg (200kg)
		Steel expanding metal cavity fixing, e.g. M5 x 65, fixing through Gyproc WallBoard into plywood supported by Gypframe Service Support Plate	50kg (200kg)
J		8mm steel frame fixing fixed through Gyproc WallBoard into masonry with minimum 55mm penetration	60kg (240kg)
K		No.12 self-tapping screw fixed through Gyproc WallBoard into timber sub-frame	120kg (480kg)
L		M8 steel bolt / anchor fixed through Gyproc WallBoard into masonry with minimum 55mm penetration	130kg (520kg)



# Appendix A

## TABLE 1b

Reference	Detail	Description	Typical SWL1 (typical failure load)
B		Steel picture hook and masonry nail into 12.5mm Rigidur н	17kg (68kg)
		Steel picture hook and masonry nail into 15mm Rigidur н	18kg (72kg)
M		Fischer PD nylon plug and screw into 12.5mm Gyproc WallBoard	7kg (49kg)
		Fischer PD nylon plug and screw into 15mm Gyproc SoundBloc	10kg (70kg)
		Fischer PD nylon plug into 15mm Gyproc DuraLine	11kg (77kg)
		Fischer PD nylon plug and screw into 12.5mm or 15mm Rigidur н	20kg (140kg)
N		Fischer UX (8 x 50) nylon plug and screw into 12.5mm Rigidur н	21kg (147kg)
		Fischer UX (8 x 50) nylon plug and screw into 15mm Rigidur н	27kg (189kg)
A		No.10 woodscrew into 12.5mm or 15mm Rigidur н	15kg (60kg)
O		Fischer HM8 x 55 steel cavity fixing into 15mm Gyproc SoundBloc	17kg (68kg)
		Fischer HM8 x 55 steel cavity fixing into 15mm Gyproc DuraLine	20kg (80kg)
		Fischer HM8 x 55 steel cavity fixing into 15mm Rigidur н	49kg (196kg)
P		Fischer KD6 steel cavity fixing into 12.5mm Rigidur н	58kg (232kg)
		Fischer KD6 steel cavity fixing into 15mm Rigidur н	74kg (296kg)

**1** Safe Working Load (SWL) – a safety factor of 4 (steel fixings) and 7 (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 Thermaline laminates, please give consideration to the thickness and compressibility of the insulation to ensure that the fixing used is fit for purpose.

The information within **Table 1a** and **Table 1b** does not take into consideration any additional forces that may be applied whether it be accidental, abuse or otherwise.

The example fixing devices, typical safe working loads and typical failure loads given in **Table 1a** and **Table 1b** relate to the installation of single fixtures. It is important to ensure that the specified loads may be carried by the Optima system, particularly if installing multiple fixtures.

**SOURCE:** The British Gypsum **WHITE BOOK** – [www.british-gypsum.com/literature/white\\_book/white\\_book\\_digital\\_edition.aspx](http://www.british-gypsum.com/literature/white_book/white_book_digital_edition.aspx) (pages 53-54).



# Appendix B

Full House Survey Form (Example)							
Name: _____			Assessor Reg No: _____				
Address: _____			Survey Date: _____				
Inspection Number: _____			Number of occupants: <input type="checkbox"/> Adults <input type="checkbox"/> Children				
<b>Dwelling Type:</b> <input type="checkbox"/> detached house <input type="checkbox"/> semi detached house <input type="checkbox"/> end of terrace <input type="checkbox"/> mid terrace <input type="checkbox"/> ground floor apartment <input type="checkbox"/> mid floor apartment <input type="checkbox"/> top floor apartment <input type="checkbox"/> maisonette Please indicate the dwelling type closest to the actual dwelling type		<b>Age: Dwelling</b> <input type="checkbox"/> pre 1900 <input type="checkbox"/> 1900 - 1929 <input type="checkbox"/> 1930 - 1949 <input type="checkbox"/> 1950 - 1969 <input type="checkbox"/> 1970 - 1977 <input type="checkbox"/> 1978 - 1982 <input type="checkbox"/> 1983 - 1993 <input type="checkbox"/> 1994 - 1999 <input type="checkbox"/> 2000 - 2004 <input type="checkbox"/> 2005 onwards		<b>Age: Extension 1</b> <input type="checkbox"/> pre 1900 <input type="checkbox"/> 1900 - 1929 <input type="checkbox"/> 1930 - 1949 <input type="checkbox"/> 1950 - 1969 <input type="checkbox"/> 1967 - 1977 <input type="checkbox"/> 1978 - 1982 <input type="checkbox"/> 1983 - 1993 <input type="checkbox"/> 1994 - 1999 <input type="checkbox"/> 2000 - 2004 <input type="checkbox"/> 2005 onwards no extension 1		<b>Age: Extension 2</b> <input type="checkbox"/> pre 1900 <input type="checkbox"/> 1900 - 1929 <input type="checkbox"/> 1930 - 1949 <input type="checkbox"/> 1950 - 1969 <input type="checkbox"/> 1967 - 1977 <input type="checkbox"/> 1978 - 1982 <input type="checkbox"/> 1983 - 1993 <input type="checkbox"/> 1994 - 1999 <input type="checkbox"/> 2000 - 2004 <input type="checkbox"/> 2005 onwards no extension 2	
number of storeys: <input type="text"/>		Type: <input type="checkbox"/> new dwelling <input type="checkbox"/> existing dwelling					
<b>Wall construction: Main Wall *</b> <input type="checkbox"/> stone <input type="checkbox"/> solid brick <input type="checkbox"/> cavity <input type="checkbox"/> solid concrete <input type="checkbox"/> hollow block <input type="checkbox"/> timber frame <input type="checkbox"/> other Wall Thickness (mm): <input type="text"/> Wall insulation: <input type="checkbox"/> as built <input type="checkbox"/> rigid board <input type="checkbox"/> bead <input type="checkbox"/> cavity fill <input type="checkbox"/> external glass mineral wool <input type="checkbox"/> internal rock mineral wool insulation thickness if observable (mm): <input type="text"/>		<b>Roof Construction: Main Dwelling *</b> <input type="checkbox"/> pitched - warm roof <input type="checkbox"/> pitched - cold roof <input type="checkbox"/> flat <input type="checkbox"/> other Roof insulation type: <input type="checkbox"/> loose fibre <input type="checkbox"/> mineral wool <input type="checkbox"/> rigid board <input type="checkbox"/> other insulation thickness (mm): <input type="text"/> unknown: <input type="checkbox"/>		<b>Ground Floor Construction: Main Dwelling*</b> <input type="checkbox"/> solid <input type="checkbox"/> suspended sealed <input type="checkbox"/> unsealed <input type="checkbox"/> <input type="checkbox"/> above unheated basement <input type="checkbox"/> heated basement <input type="checkbox"/> other Floor insulation: <input type="text"/> thickness (mm) <input type="checkbox"/> only if observed Insulation Type (if any): <input type="checkbox"/> EPS <input type="checkbox"/> min fibre <input type="checkbox"/> unknown <input type="checkbox"/> dense			
<b>Wall construction: Type 2 *</b> <input type="checkbox"/> stone <input type="checkbox"/> solid brick <input type="checkbox"/> cavity <input type="checkbox"/> solid concrete <input type="checkbox"/> hollow block <input type="checkbox"/> timber frame <input type="checkbox"/> other Wall Thickness (mm): <input type="text"/> Wall insulation: <input type="checkbox"/> as built <input type="checkbox"/> rigid board <input type="checkbox"/> bead <input type="checkbox"/> cavity fill <input type="checkbox"/> external glass mineral wool <input type="checkbox"/> internal rock mineral wool insulation thickness if observable (mm): <input type="text"/>		<b>Roof Construction: Roof Type 2 *</b> <input type="checkbox"/> pitched - warm roof <input type="checkbox"/> pitched - cold roof <input type="checkbox"/> flat <input type="checkbox"/> other Roof insulation type: <input type="checkbox"/> loose fibre <input type="checkbox"/> mineral wool <input type="checkbox"/> rigid board <input type="checkbox"/> other insulation thickness (mm): <input type="text"/> unknown: <input type="checkbox"/>		<b>Ground Floor Construction: Floor Type 2*</b> <input type="checkbox"/> solid <input type="checkbox"/> suspended sealed <input type="checkbox"/> unsealed <input type="checkbox"/> <input type="checkbox"/> above unheated basement <input type="checkbox"/> heated basement <input type="checkbox"/> other Floor insulation: <input type="text"/> thickness (mm) <input type="checkbox"/> only if observed Insulation Type (if any): <input type="checkbox"/> EPS <input type="checkbox"/> min fibre <input type="checkbox"/> unknown <input type="checkbox"/> dense			
<b>Wall construction: Type 3 *</b> <input type="checkbox"/> stone <input type="checkbox"/> solid brick <input type="checkbox"/> cavity <input type="checkbox"/> solid concrete <input type="checkbox"/> hollow block <input type="checkbox"/> timber frame <input type="checkbox"/> other Wall Thickness (mm): <input type="text"/> Wall insulation: <input type="checkbox"/> as built <input type="checkbox"/> rigid board <input type="checkbox"/> bead <input type="checkbox"/> cavity fill <input type="checkbox"/> external glass mineral wool <input type="checkbox"/> internal rock mineral wool insulation thickness if observable (mm): <input type="text"/>		<b>Roof Construction: Roof Type 3 *</b> <input type="checkbox"/> pitched - warm roof <input type="checkbox"/> pitched - cold roof <input type="checkbox"/> flat <input type="checkbox"/> other Roof insulation type: <input type="checkbox"/> loose fibre <input type="checkbox"/> mineral wool <input type="checkbox"/> rigid board <input type="checkbox"/> other insulation thickness (mm): <input type="text"/> unknown: <input type="checkbox"/>		<b>Ground Floor Construction: Floor Type 2*</b> <input type="checkbox"/> solid <input type="checkbox"/> suspended sealed <input type="checkbox"/> unsealed <input type="checkbox"/> <input type="checkbox"/> above unheated basement <input type="checkbox"/> heated basement <input type="checkbox"/> other Floor insulation: <input type="text"/> thickness (mm) <input type="checkbox"/> only if observed Insulation Type (if any): <input type="checkbox"/> EPS <input type="checkbox"/> min fibre <input type="checkbox"/> unknown <input type="checkbox"/> dense			
<b>Wall construction: Type 4 *</b> <input type="checkbox"/> stone <input type="checkbox"/> solid brick <input type="checkbox"/> cavity <input type="checkbox"/> solid concrete <input type="checkbox"/> hollow block <input type="checkbox"/> timber frame <input type="checkbox"/> other Wall Thickness (mm): <input type="text"/> Wall insulation: <input type="checkbox"/> as built <input type="checkbox"/> rigid board <input type="checkbox"/> bead <input type="checkbox"/> cavity fill <input type="checkbox"/> external glass mineral wool <input type="checkbox"/> internal rock mineral wool insulation thickness if observable (mm): <input type="text"/>		<b>Roof Construction: Roof Type 4 *</b> <input type="checkbox"/> pitched - warm roof <input type="checkbox"/> pitched - cold roof <input type="checkbox"/> flat <input type="checkbox"/> other Roof insulation type: <input type="checkbox"/> loose fibre <input type="checkbox"/> mineral wool <input type="checkbox"/> rigid board <input type="checkbox"/> other insulation thickness (mm): <input type="text"/> unknown: <input type="checkbox"/>		<b>Roof Loss: Upper Floors (Floor Type 4*)</b> <input type="checkbox"/> no heat loss upper floor <input type="checkbox"/> partially heated below <input type="checkbox"/> exposed <input type="checkbox"/> semi exposed Floor insulation: <input type="text"/> thickness (mm) <input type="checkbox"/> only if observed Insulation Type (if any): <input type="checkbox"/> EPS <input type="checkbox"/> min fibre <input type="checkbox"/> unknown <input type="checkbox"/> dense			
* note: Actual U-value should be calculated and used if the wall / roof / floor construction detail is available on site or through documentation substantiation supporting the U-value calculation is required. The U-value calculation should only be calculated by a suitability qualified person. This survey form is an example additional information may be required.							



# Appendix B

Contractor Optima IWI House Survey Form (Example)			
Dwelling External Survey			
Air bricks / vents present? <small>(please ensure the level of ventilation is sufficient for dwelling)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Number of air bricks / vents: _____ Condition: _____ Notes: _____
Is a DPC (damp proof course) present? <small>(It is recommended that this is tested with a moisture meter and visually inspected to check for signs of moisture ingress)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is the DPC in a good state of repair? Condition: _____ Notes: _____
Are all external floor levels 150mm below the DPC level?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Is the external substrate in a good state of repair?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Pointing condition Brick / stone condition Notes: _____
Is there any evidence of moisture ingress? <small>(eg mould growth, discoloration, efflorescence etc)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Leaking rain water goods? <small>(note any evidence of leaking rain water goods requires repair)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Are the rain water goods in a good state of repair? <small>(Are fascia / soffits in a good state of repair, are rain water goods asbestos containing material)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Are there any non heated "lean-to" structures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Is the flashing on the "lean-to" structure in a good state of repair?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Are all windows / doors in a good state of repair with no evidence of moisture ingress?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Are all window and door reveals sealed appropriately?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____
Notes: _____ _____ _____ _____ _____			
If any of the questions above highlight issues ensure these are rectified prior to work commencing under professional guidance. This survey form is an example additional information may be required.			



Contractor Optima IWI Room Survey Form One Per Room(Example)				
<b>External Examination</b>				
Is there evidence of black pattering? (mould or fungus growth)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____	
Does the room have ventilation? <small>(Air bricks, vents, trickle vents, mechanical vents etc)</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____	
Is the ventilation sufficient for the room requirements? <small>Professional advice must be sort.</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____	
Is there evidence of de-bonded plaster? <small>This may be evidence of moisture ingress. It may also restrict the fixing of Optima IWI with out removal</small>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Notes: _____ _____	
<b>General information:</b>	<b>Window .1.</b>	<b>Window .2.</b>	<b>Door .1.</b>	
Ceiling height (m): <input style="width: 50px;" type="text"/>	Height (m): <input style="width: 50px;" type="text"/>	Height (m): <input style="width: 50px;" type="text"/>	Height (m): <input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
Room Length (m): <input style="width: 50px;" type="text"/>	Width (m): <input style="width: 50px;" type="text"/>	Width (m): <input style="width: 50px;" type="text"/>	Width (m): <input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
Room Width (m): <input style="width: 50px;" type="text"/>	Reveal Depth (m): <input style="width: 50px;" type="text"/>	Reveal Depth (m): <input style="width: 50px;" type="text"/>	Reveal Depth (m): <input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
(Note the dimensions of any additional windows and doors. Identify if the current wiring and plumbing are in a good state of repair or needs replacing).				
<b>Room Sketch:</b>				
Sketch a room floor plan and indicate the position of: windows, doors, electric sockets / light switches, heating appliance locations etc. Indicate all dimensions Clearly identify separating walls which require minimum 400mm thermally insulated reveal details Identify areas where additional loading requirements are needed i.e. cupboards, televisions etc				
If any of the questions above highlight issues ensure these are rectified prior to work commencing under professional guidance. This survey form is an example additional information may be required.				



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