



SWIP IWI 02 - Internal Wall Insulation System Specification

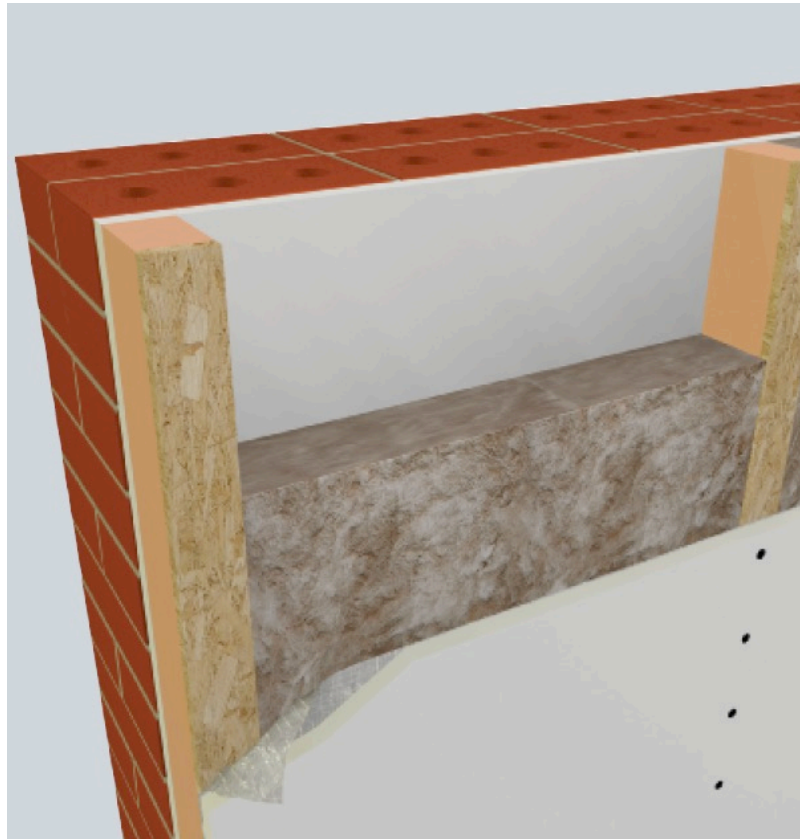
PROJECT:

PROJECT REF:

DATE:

SYSTEM: Internal Wall Insulation 95mm

SUBSTRATE: Solid Brick 225mm



To be read with Preliminaries/General conditions. The details contained within this proposal are based on information available at the time of writing and covers the installation of the SWIP Internal Wall Insulation System. Where required the installation of the SWIP Internal Wall Insulation System must be in accordance with the recommendations and requirements of PAS2035:2019 and PAS2030:2019.

SWIP cannot be held responsible for unknown site conditions or for the performance of materials within the system other than those manufactured, supplied or branded by SWIP. The requirements of all relevant British Standards and Industry Codes of Practice should be complied with at all times. All clauses that are not applicable should be deleted.



GENERAL/ SYSTEM REQUIREMENTS

SURVEY OF EXISTING WALLS

Survey report: The survey report of the wall should be made available for inspection.

SURVEY OF EXISTING WALLS

Timing: Before starting work covered in the section.

Objective: To confirm suitability for application of internal wall insulation system.

Survey report: Submit, covering all relevant matters listed below:

- The form and condition of the structural substrate.
- A schedule of repairs and / or additional works necessary to render the substrate suitable to receive the system.
- A schedule of services, fixtures and fittings requiring removal to facilitate installation of the system.
- Proposals for treatment of potential cold bridges, e.g. reveals, concrete floor edges, intermediate floor zones, etc.
- Any other information considered relevant.
- Where required, retrofit assessments to be carried out in accordance with the current PAS2030 & PAS2035 requirements.

EXTENT OF SURVEY WORKS

- The following items should be allowed for.

REMEDIAL WORK

Remedial work shown to be necessary by survey: _____

SUBSTRATE

Description: **Existing Brickwork**

Preparation: Any signs of algae / damp should be investigated fully as to the root cause of the problem and rectified prior to commencement of works.

INTERNAL WALL INSULATION SYSTEM

Manufacturer:

**SWIP LTD,
ROC House,
30 Inkerman Street,
Birmingham B7 4SH**

Tel: 0845 402 3585, info@swipiwi.co.uk

System reference:

SWIP IWI System

System Insulation:

SWIP Batt – Ecosse® Glass Mineral Wool

Thickness:

95mm

Thermal conductivity:

0.032W/mK (95mm) / 0.035W/mK (65mm)

Size:

1200mm x 555mm

System Stud:

SWIP Stud -

Extruded Polystyrene laminated to 15mm OSB

Thickness:

95mm

Thermal Conductivity:

0.033W/mK

Size:

2400mm x 50mm



Method of fixing:	<i>SWIP approved IWI fixings: 200mm x 6mm – generally for 95mm system 150mm x 6mm – generally for 95mm system 120mm x 6mm – generally for 65mm system</i> <i>SWIP approved IWI plugs – 6mm</i>
Vapour Control	<i>SWIP Vapour Control Layer 50m x 2.5m (folded to a 1.25m roll)</i> <i>Or vapour open membrane option: SWIP Intello PLUS Intelligent Membrane 50m x 1.5m roll</i>
Linings:	<i>12.5mm Standard Plasterboard</i>
Finishing:	<i>Skim Coat Plaster or Tape and Joint</i>
Reveal:	<i>SWIP Reveal Board</i>
Thickness:	<i>12.5mm / 20mm / 27mm</i>
Size:	<i>12.5mm – 1200 x 600mm 10mm – 1200 x 600mm 27mm – 2400 x 1200mm</i>
Sealant:	<i>SWIP Multi-Purpose Sealant (acrylic)</i>

Installation

The application of the SWIP system shall only be carried out by an approved SWIP installer. A list of approved installers or details of how to become approved are available from SWIP LTD.

Handling and storage - SWIP Batt and SWIP Stud

SWIP Batt and SWIP Stud are easy to handle and install, being lightweight and easily cut to size, (where necessary). They are supplied in polythene packs, which are designed for short-term protection only. For longer-term protection on site, the products should either be stored indoors, or under cover and off the ground. SWIP Batt and SWIP Stud should not be left permanently exposed to the elements.

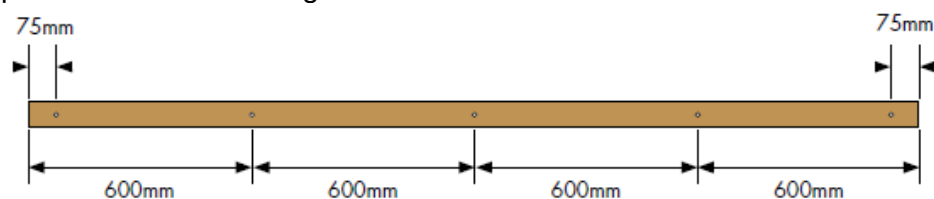
Installation method

1 SWIP Studs:

1.1 Where the plaster is sound, fix directly through it, and remove any existing skirting boards before fixing the SWIP Studs. If the plaster is not sound, remove decayed plaster and, for greatest airtightness, seal with a parge coat. SWIP Studs are to be installed with the OSB facing into the room.

1.2 Screw fix SWIP Studs horizontally to the foot of the existing wall using SWIP screws and suitable wall plugs as supplied. A minimum fixing penetration of 40mm is required into the existing masonry wall (excluding thickness of plaster – Please ensure the depth of plaster has been checked prior to ordering). Five fixings per stud are required but the number can be increased as required, or as dictated by site conditions.

Position the fixings at 600mm maximum centres and 75mm from the end of each stud. SWIP Studs should be positioned so that, if the wall is bowed or not vertical, the verticality of the SWIP IWI System is maintained, (if the customer requires a vertical finish to the wall). The horizontal SWIP Studs should also be located so that the OSB facing can provide a fixing point for the new skirting board.



1.3 Screw fix SWIP Studs horizontally at the head of the wall following the same process as (section 1.2). Screws should be positioned 75mm in from the end of the stud and at the junction of every vertical stud (where an internal corner exists, the fixing should be at 75mm from the depth of the adjoining stud). Minimum spacing is 600mm. Then fix SWIP Studs vertically between the top and bottom horizontal EcoStuds as in section 1.2, spacing them at 600mm horizontal centres to coincide with plasterboard dimensions. Ensure that the vertical studs are cut and installed so as to be in flush contact with the horizontal studs at floor and ceiling level.

1.4 Alternatively, where the ceiling line is irregular, cut SWIP Studs to extend from the horizontal SWIP Stud at the foot of the wall to fit tightly under the ceiling and fix as previously described. Once the studs are fixed in position, screw-fix SWIP Stud noggins between the studs at ceiling level to receive plasterboard fixings.

1.5 If there are irregularities in the wall surfaces, pack out the SWIP Studs using suitable materials which are unaffected by moisture. Ideally offcuts of the XPS foam from waste sections of stud should be used.

1.6 Ensure that all the SWIP Studs situated around the perimeter edge are sealed with the SWIP Multi-Purpose sealant to prevent air movement.

2 SWIP Batt:

2.1 Friction fit the SWIP Batts between the SWIP Studs ensuring the insulation zone is completely filled. There should be no gaps between the slabs and they should be installed to be in intimate contact with the SWIP vapour control layer and the wall, fully filling the space between the studs. Where insulation requires cutting, it should be cut 5mm wider than the space it is intended to fill. Once the insulation has been fitted install the SWIP vapour control layer.

3 *Installation of SWIP vapour control layer:*

3.1 The SWIP vapour control layer should be installed in accordance with the recommendations of BS5250: 2011 'Code of practice for control of condensation in buildings' and should be installed on the warm side of the insulation.

3.2 All laps in the SWIP vapour control layer and junctions at interfaces with other elements and materials in the building e.g. metal and timber studs and joists, cementitious boards and window and doorframes, should be sealed with an aluminised tape. The efficiency of the SWIP vapour control layer will be reduced unless it is effectively sealed to other elements of the building.

3.3 All joints in the SWIP vapour control layer should be lapped by a minimum of 75mm, and sealed with aluminised tape, which should be applied equidistantly over the lap.

Whenever possible, laps in the SWIP vapour control layer should be coincident with a SWIP Stud in order to aid the sealing process. The number of laps can be kept to a minimum by installing full roll widths of the SWIP vapour control layer.

3.4 Where the heads of fixings penetrate the SWIP vapour control layer they should be sealed with an aluminised tape, as should any tears, holes or cuts. The tape should overlap the damaged area by a minimum of 75mm. Where larger areas of damage occur in the SWIP vapour control layer they should be repaired with a `patch` and aluminised tape, as detailed above.

Installation of SWIP Intello PLUS Intelligent vapour control layer:

3.5 Roll out the membrane and fasten it using galvanised staples with a width of at least 10 mm and a length of 8mm at intervals of 100-150mm. Install the membrane to stop approximately 40mm short of adjacent building components so that an airtight bond can be applied here subsequently.

3.6 It is important to overlap the membranes and there should be an allowance approximately 100mm between each sheet of the membrane. The distance marking that is printed onto side of the membrane will serve as a guide for the installation.

3.7 Clean down the surface of any dust or debris that might affect the adhesion of the Tescon Vana adhesive tape.

3.8 Centre the Tescon Vana adhesive tape on the overlap of the membranes and gradually stick it down in place, ensuring that there are no folds, ripples or identifiable tension.

3.9 Using the Pro-Clima Pressfix, rub along the tape firmly ensuring that there is sufficient resistance pressure leaving a solid well adhered tape with no air gaps.

3.10 If the system requires the application of the membrane onto a masonry gable wall, then an airtight joint is required.

3.11 Place the Intello PLUS membrane onto the gable wall, allowing a small area of slackness to accommodate the relative expansion between the dissimilar components.

3.12 Remove the release film from the Contega Solido SL tape and centre the tape over the edge of the membrane and gradually stick it into place.

3.13 Using the Pro-Clima Pressfix, rub along the tape firmly ensuring that there is sufficient resistance pressure leaving a solid well adhered tape with no air gaps.

4 Installation of the plasterboard:

4.1 Once the SWIP vapour control layer has been installed then screw the plasterboard to the SWIP Studs using drywall or wood screws, at a nominal 300mm horizontal and vertical centres, reducing to 200mm centres at corners. Ensure that there is a 3 - 5mm gap between the plasterboard and the existing floor to allow space for sealing. The plasterboard sheets should be installed vertically at full height.

4.2 Seal all joints at the perimeter of the plasterboard using SWIP Multi-Purpose Sealant to prevent air movement behind the SWIP IWI System.

4.2 Mechanically fix skirting boards through the plasterboard to the horizontal EcoStuds at the foot of the wall, or fix them with a high strength instant grab adhesive to the plasterboard. Seal the skirting to the floor with SWIP Multi-Purpose Sealant as a final precaution against air leakage.

Note: The plasterboard selected should be as specified within this document as all calculations have been based around the specified products. Failure to comply with this could result in a variance in the calculations and ultimately may not apply with project / scheme requirements. SWIP will not accept any responsibility for any deviations from this specification document.

5 Wall openings:

5.1 Around openings (windows, doors etc), screw fix SWIP Studs to the wall at the edge of jambs, sills and heads as determined by on site requirements and drawings.

5.2 Line the openings with the required thickness of SWIP Reveal Board. If there are thickness constraints due to the size of the window or doorframe, install as thick a SWIP Reveal Board as is practicable. The edge of the SWIP Reveal Board should finish flush with the face of the SWIP Studs.

5.3 The SWIP Reveal Boards should be fully bedded with plaster adhesive, and additionally secured with localised mechanical fixings. Complete continuity of insulation should be achieved around the opening at the junctions of heads, jambs and sills by cutting back the plasterboard at the edge of the laminate board.

5.4 When setting out studs adjacent to openings in relation to plasterboard dimensions, make an allowance for the fact that the plasterboard needs to extend beyond the centre line of the jamb stud to cover the thermal laminate board. For example, the dimension between the centre lines of the jamb stud and the next stud needs to be 600mm, less the thermal laminate thickness (including thickness of plaster adhesive), less 25mm (half the stud width).

Stepped or check reveals

5.5 Install a new window frame towards the outside of the wall and build out head and jamb reveals with a suitably sized timber infill piece to accommodate the recommended thickness of thermal laminate board, ensuring a strip of damp proof membrane is fixed to the back of

the timber using galvanised nails or stainless steel staples, i.e. between the timber and the external wall.

5.6 Fix SWIP Studs to the face of the jambs and flush with the timber infill piece and form a continuous insulated lining around the opening with the plasterboard cut back accordingly.

6 *Internal / External corners:*

6.1 Internal corners should be installed in accordance with the detail below (Fig 1) and the corner void fully filled with SWIP Batt. The centre of the studs adjacent to the corner studs should be adjusted to accommodate the corner detail.

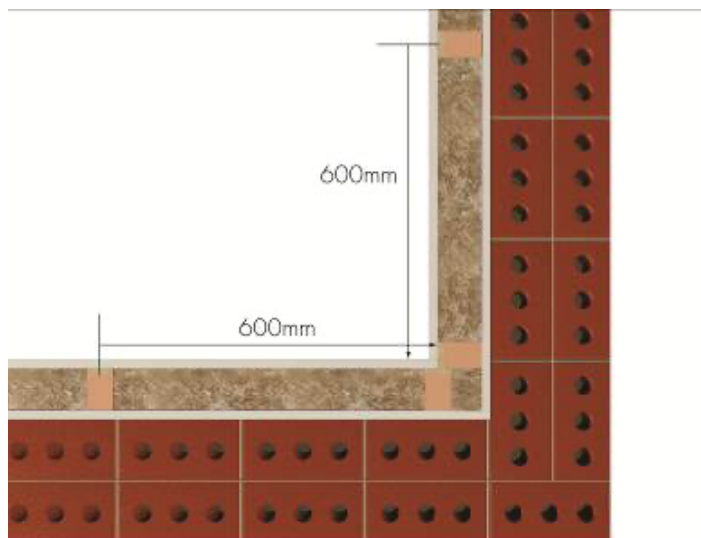


Fig 1

External corners should be installed in accordance with the detail (Fig 2). In order to provide additional rigidity at the junction of the plasterboard linings, a timber batten (minimum 25mm x 25mm) should be screw fixed into position as indicated and the corner void fully filled with SWIP Batt. The centre of the studs adjacent to the corner studs should be adjusted to accommodate the corner detail.

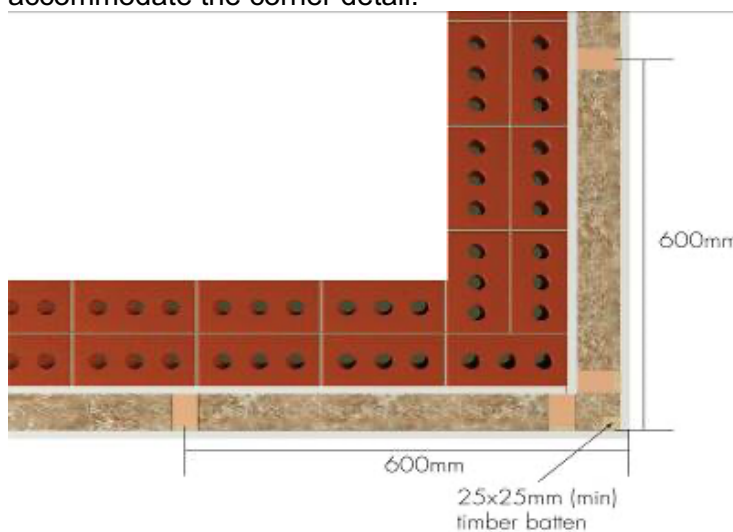


Fig 2

7.1 Electric cables

Electric cables give off heat when in use and should be routed where they will not be covered by thermal insulation, so the heat can be dissipated. If cables need to be located within insulation, they should be run in conduit and possibly increased in size. Advice on this should be sought from a suitably competent person, such as a qualified electrician. PVC-insulated cables should be located in suitable conduit to avoid being in direct contact with the extruded polystyrene content of SWIP Studs in order to prevent plasticizer migration which can cause loss of protection to the conductors.

7.2 Socket outlets

When socket outlets on the existing external wall need to be repositioned on the new SWIP Stud lining, it is likely that the existing cables will need to be extended. Extending cables in this manner is not classified as “notified work” (according to Approved Document P, 2006 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.

7.3 Socket and switch boxes

Socket and switch boxes should be fixed into the plasterboard lining in accordance with the manufacturer’s instructions. Plasterboard and drywall socket and switch boxes simply clip into place when inserted into a pre-prepared opening, when the faceplate is tightened onto the socket box, the box grips against the plasterboard. Before the faceplate is finally fixed, the boxes should be sealed against the plasterboard using SWIP Multi-Purpose Sealant to prevent air leakage

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

7.4 Radiators

Thermally upgrading the external wall in a room may provide an opportunity to have a smaller radiator and re-position it on an internal wall. Alternatively, it may be possible to replace wall-hung radiators with skirting radiators. Further information should be obtained from, for instance, a heating engineer or radiator manufacturer.

7.5 Fixing radiators

Do not fix radiators to plasterboard alone, sufficient support is provided only when radiator brackets are fixed:

- Through the plasterboard into the SWIP Studs
- To horizontal timber battens, fixed through the plasterboard to the SWIP Studs
- To horizontal timber battens, fixed between the SWIP Studs and to the masonry wall
- To Knauf Drywall Fixing Channels, screw fixed to the SWIP Studs behind the plasterboard

Timber battens are suitable for loads up to 75kg per metre run acting parallel to the plasterboard and should be used for heavier radiators. Knauf Drywall Fixing Channels are suitable for loads up to 50kg per metre run acting parallel to the plasterboard and can be used for small radiators.

7.6 Picture rails and dado rails

Picture rails and dado rails can be fixed to the new plasterboard lining using an instant grab adhesive after installation of the SWIP IWI System, or the rails can be fixed to the SWIP Studs using suitable screws.



7.7 Fixing to plasterboard

Light to medium weight items such as mirrors, pictures, shelving and curtain poles can be fixed in position using standard self drilling, winged or toggled plasterboard fixings and fixings such as Knauf Drywall anchors which are suitable for loads up to 20kg acting parallel to the plasterboard.

For heavier items (such as kitchen cupboards) fix SWIP Studs or timber battens to the walls at the relevant positions and secure heavy items to them using appropriate fixings, alternatively, specialist heavy duty cavity anchor fixings should be used. Universal wall plugs are also suitable for use with shelving and cabinets. Heavier items can also be secured by fixing back to the masonry wall using proprietary standoff fixings or a suitably sized standard screw. Alternatively, screw fixing a 10 - 18mm plywood sheet to the face of the SWIP Studs over the entire wall area (before fixing the vapour check plasterboard) provides a solution to a wide range of fixing problems.

Avoid damaging, puncturing or penetrating the SWIP vapour control layer.

When installing fixtures and fittings such as pictures, mirrors, shelves, dado rails, picture rails etc locate them (and their fixings) directly over an SWIP Stud if at all possible.

Where this is not possible and the SWIP vapour control layer will be punctured by a picture hook, bracket or mechanical fixing etc, place a piece of vapour resistant aluminised tape over the fixing position after the hole has been drilled but prior to the installation of the fitting in order to:

- Minimise damage to the plasterboard
- Minimise the amount of water vapour permeating the system
- Provide a partial seal around the fitting
- Provide additional strength locally to the penetration in the plasterboard

Note: If in any doubt as to the suitability of fixings, consult the fixings manufacturer.

7.8 Flues

Care must be taken to ensure that flues and ventilation measures for gas, oil or coal fired combustion appliances are not blocked or adversely affected by the installation of the SWIP IWI System. Where a flue penetrates the SWIP IWI System, the flue can be completely surrounded and encased by Earthwool SWIP Batt, which is a non-combustible glass mineral wool product. The extruded polystyrene content of Stud should not be subjected to temperatures in excess of 70°C.

The flue can be faced with a non-combustible board, e.g. plasterboard or cement based board, prior to the installation of the SWIP IWI System. However, if in doubt regarding the surface temperature of the flue, contact the manufacturer of the appliance under consideration.

7.9 Combustion appliances

It is imperative that ventilation requirements for gas, oil or coal fired combustion appliances are not compromised by the installation of the SWIP IWI System and the system does not interfere with the supply of fresh air to the appliance.

Recommendations, guidance and compliance with the Building Regulations for the ventilation of combustion appliances can be found in Building Regulations Approved Document J - Combustion appliances and fuel storage systems.

IMPORTANT NOTE: Please ensure that all relative inspections have been undertaken with regard to the air tightness of the building and any ventilation / gas issues that need to be



address. Care should be taken with gas appliances with a rating of 7 KW or above, and all inspections and subsequent works should be carried out by a suitably qualified gas engineer.

8 Areas of restricted thickness

In situations where a thinner insulation solution is required due to design or constructional restrictions the SWIP IWI System includes an SWIP Reveal Board.

For example, where a staircase is fixed to a gable end wall it will generally be necessary to use the SWIP Reveal Board within the SWIP IWI System to prevent encroachment on, and reduce the width of, the stair treads which could compromise the health and safety of the buildings occupants.

In this instance use the thickest SWIP Reveal Board as is practical, 27mm being ideal, however if this can be increased in thickness, this will increase the thermal performance of this area.

8.1 Ideally, the SWIP Reveal Board should be installed so as to finish flush with the face of the string line and it should not reduce the width of the existing stair treads. General instructions for installing SWIP IWI System Reveal Board boards are detailed below, however, SWIP Reveal Boards – (thermal laminate boards) must also be installed in accordance with the recommendations contained in BS 8212:1995 and BS 8000: Part 8: 1994.

8.2. Apply a full bond of plaster adhesive to the rear of the SWIP Reveal Board, ensuring that the adhesive to full to the edge of the board to prevent air movement.

8.3 Once the adhesive has been applied to the SWIP Reveal Boards, then offer up to the wall and press firmly into position ensuring that the board is installed plumb.

8.4 Modest pressure on the SWIP Reveal Board is sufficient to ensure a positive bond is achieved.

8.5 Once the adhesive has set secondary fixings typically 1.200m above floor level should be installed, typically two mid-placed fixings per board are sufficient which should penetrate into the masonry by at least 40mm. The number of fixings can be increased as required, or as dictated by the condition of the existing wall.

9 Floor Zones

9.1 Finish at the ceiling level

We recommend that the system is finished at the ceiling level, ensuring that the vapour control layer is sealed to the underside of the ceiling at the junction joint of the plasterboard. The system is to re-commence from the floor level with attention being paid to the vapour control layer, which should be sealed to the floor under the plasterboard.

10.1 Sealing to prevent air leakage

To ensure that the SWIP IWI System achieves its intended performance, it is important that the perimeter joints at the floor and ceiling are sealed with a continuous bead of SWIP Multi-Purpose Sealant. In particular, the gap between the floor and wall and the ceiling and wall should be sealed, as well as the joint between the skirting board and the floor.

Continuity of the SWIP vapour control layer should be maintained across the floor zone, and the SWIP vapour control layer should be in intimate contact with the floor joists and mechanically fixed to them with staples or timber battens. Failure to seal these joints could result in cold air entering the building, which could lead to harmful condensation occurring in the timber, and also reduce the thermal and acoustic performance of the SWIP IWI system.

11 Installation to existing walls already dry lined**11.1 Inspection of existing dry lining**

Where internal dry lining already exists on an external masonry wall it may be possible to install the SWIP IWI system. The depth of the condition of the existing battens / studs should be identified in the first instance. If there are signs of damp / decay in the battens then the recommendation would be to remove all internal linings back to the masonry before commencement of works, and identify and where possible resolve any existing damp issues.

11.2 Inspection of the plasterboard

Carry out a full inspection of the existing plasterboard and seal any gaps that may be visible.

11.3 Identify the existing stud positions

Identify the existing stud positions and ensure that the spacing of these studs is no greater than 600mm centre to centre. Where horizontal SWIP Studs are required but there is no existing batten / stud, cut through the plasterboard at the point of where the fixing for the horizontal SWIP Stud will be required and cut a flush fitting piece of the SWIP Stud to correspond. Seal around the cut with SWIP Multi-Purpose Sealant.

11.4 Installation through existing dry lining

Install the SWIP IWI system as previously stated, ensuring that the fixings being used are of the right depth to penetrate the substrate by the minimum requirement of 40mm. *The system cannot be fixed just into the existing stud.*

12 Double Studding – system thickness of 130mm or greater

12.1 Where the specification for the SWIP IWI system is for 130mm or greater then there is a need to double stud to gain the required depth.

12.2 Installation of first SWIP Stud

Please refer to section 1 of this specification for the installation instructions.

12.3 Installation of second SWIP Stud

Follow the setting out of the first SWIP Stud and fix the second SWIP Stud through the first and into the substrate by a minimum of 40mm. *it is critical the substrate is penetrated to the correct depth:*

200mm SWIP IWI fixing is required for the second SWIP Stud

Ensure that the fixings from the first SWIP Studs are missed by the second fixings.

13 Additional Information

13.1 Taping and jointing

In order to accommodate a taped and jointed finish, taper edged plasterboards should be installed. After applying a primer coat over the plasterboard and joints, a reinforced tape and jointing compound should be used to achieve a seamless finish. Knauf Drywall provides a comprehensive range of jointing compounds and tapes.

Note: In all instances follow the plasterboard manufacturer's instructions.

13.2 Skimming

A 2 to 5mm veneer coat of Knauf Multicover or Knauf Universal Board Finish can be applied to the face of the plasterboards. The board joints should be reinforced with paper or fibre tape.

13.3 Decoration

Follow manufacturer's instructions regarding priming requirements prior to the installation of wallpaper or specialist coverings.

13.4 Tiling

Face SWIP Studs with Knauf Moistureshield or Aquapanel when installed in humid or wet areas such as kitchens and bathrooms. Alternatively SWIP Reveal board can be used which will also enhance the thermal performance of the wall.

The weight of tiling (including adhesive) fixed direct to plasterboard (without plaster skim) should not exceed 32kg/m². Follow guidance and recommendations from tiling manufacturers and BS 5385 accordingly.

13.5 Coving and architectural detailing

Existing coving and architectural detailing can be replicated and installed after the application of the SWIP IWI system.

14 Ventilation

A determination should be made on the current ventilation status of the dwelling

1. Is there **No** existing background ventilation in some or all habitable rooms and extract ventilation not provided in all wet rooms.
2. Is there **existing purpose provided** background ventilation in every habitable room; and **extract ventilation not in all wet rooms**.
3. Is there Existing purpose provided background ventilation in every habitable room. Extract ventilation provided in all wet rooms.

If either points 1 or 2 s above are yes, then a requirement for additional ventilation exists.



Our recommendation is for trickle vents and or mechanical ventilation to be retro-fitted in the dwelling.

15 *Recommendations*

As with all solid wall properties it is essential to use a brick cream with a minimum guarantee of 25 years to stop any capillary action of the existing brickwork, if this is not adhered to this may void any warranties which are applied for.

The above is based on information available to us at the time of preparation and no responsibility can be accepted for errors or omissions. SWIP reserves the right to alter issued details without prior notice. SWIP have taken every consideration of the requirements of the CDM regulations 2015 in preparing the above, but remind the designer that it is their responsibility to ensure compliance. Information on health and safety is available on request. Please see our standard terms and conditions.