

SPECIFICATION & INSTALLATION GUIDANCE FOR RETROFIT ROOM IN ROOF INSULATION

March 2026



ROOM IN ROOF INSULATION

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INTRODUCTION

Dear Customer,

Retrofit room in roof insulation is established as a common energy efficiency measure in the domestic sector.

This document identifies the SWIP methodology and key components of a Room in Roof (RiR) install.

The purpose of this guide is to assist parties involved in the delivery of retrofit Room in Roof insulation to complete installations in line with the requirements of PAS2035:2023 and other relevant standards and regulations.

It is intended to complement PAS2035:2023 and is not specific to any additional requirements, which may need to be fulfilled to be compliant with specific funding schemes such as the Energy Company Obligation (ECO).



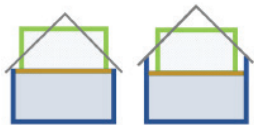
SWIP Group

ROOM IN ROOF

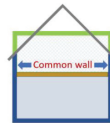
Definition of RIR

Conventions for RdSAP 2.06 amended on 01 September 2019 state that a Room in Roof must be accessed via a permanent fixed staircase such that one is able to walk down facing forwards. For a Room in Roof to be classed as such and not as a separate storey, the height of the common wall must be less than 1.8m for at least 50% of the common wall (excluding gable ends or party walls).

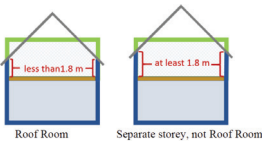
The common wall is a vertical continuation of the external wall of the storey below. If the adjacent roof space meets the Room in Roof criteria, then, in accordance with the Building Regulations, this wall area would not need any insulation treatment as it is not defined as a heat loss wall. Insulation solution for being adjacent to a cold roof.



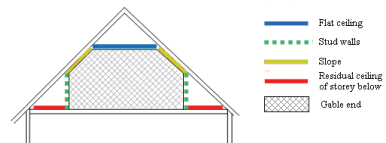
RIR fully within the roof (RIR type 1)



RIR not fully within the roof ("RIR Type 2"), where accessible common wall is part of RIR



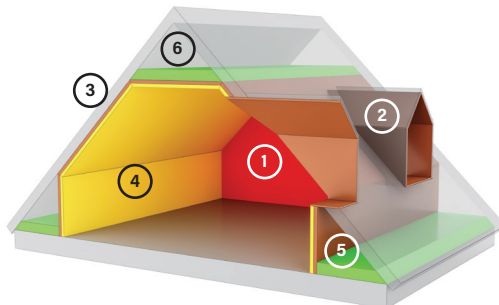
Upper storey with common wall



Different parts of roof rooms (instead of stud wall and residual ceiling there can be a common wall)

Thermal Envelope Diagram

1. Gable End
2. Dormer Window
3. Sloping Ceiling
4. Stud Wall
5. Residual Loft Space
6. Flat Ceiling



RIR System

SWIP RIR System Materials

- SWIP RIR Insulation Board (PIR Insulation bonded to 12.5mm plasterboard)
- Insulation: Unilin Thin-R (BBA cert 23/6997 - Unilin Insulation UK Ltd) 50mm thick, declared $\Lambda = 0.022\text{W/mK}$
- Plasterboard: 12.5mm Knauf Wallboard

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13165: 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance. The management system of Xtratherm UK Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001:2008, BS EN ISO 14001: 2004 and OHSAS 18001: 2007 by BRE (Certificates 718, 718EMS and 718-HS respectively).

Thermal Performance - the product has a declared thermal conductivity (OD) of 0.022W/(mK) .

Table 1 Nominal Characteristics

Characteristic (unit)	Value
Length (mm)	2400
Width (mm)	1200
Thickness (mm)	25 to 165 (in 5mm increments)
Minimum compressive strength* at 10% compression (kPa)	150
Edge profile	Square, tongue-and-groove, rebated

Plasterboard - CTEC dB Board (Gypsum Plasterboard Types D and I) 2. No. UKSI-00520-007 Intended use/es: General building construction 3. Harmonized standard: BS EN 520:2004+A1:2009.

Essential Characteristics	Performance	Harmonised Technical Specification
Flexural strength 12.5mm 15mm	Transverse: $\geq 210\text{N}$ Longitudinal: $\geq 550\text{N}$ $\geq 250\text{N}$ $\geq 650\text{N}$	EN 520:2004+A1:2009
Shear strength	NPD	
Reaction to fire	Euroclass A2	EN 520:2004+A1:2009
Airborne sound insulation	See literature	
Acoustic absorption	See literature	
Water vapour permeability (μ)	10	EN 12524:2000
Thermal resistance	0.25 W/m.K	EN 12524:2000
Impact resistance	See literature	

Please note SWIP LTD reserve the right to use alternative rigid board insulation and plasterboard manufacturers which meet or exceed the necessary standards.

RIR System



About the RIR System

The SWIP Room in Roof (RIR) system is an insulated dry lining solution for room-in-roof applications in new and existing buildings. It offers high thermal efficiency and increased airtightness, suitable for exposed semi-detached, detached, and terraced gable end walls.

The SWIP RIR Insulation system comprises of a rigid polyisocyanurate-modified polyurethane foam board, which is pre-bonded to plasterboard. The SWIP 62.5mm RIR Board is mechanically fixed through the existing plasterboard into the existing timber rafters on the sloping section of the roof and the vertical stud walls.



Cold Bridging.

To avoid cold bridging in areas of limited spaces, we have a choice of:

- SWIP 27mm Reveal Board, an insulated plasterboard.

Or

- SWIP 12.5mm Reveal Board, comprising of 10mm insulation with a 2.5mm cementitious screed.

The use of these boards should be for areas of potential cold bridging such as window reveals, dormer cheeks, ceilings, restricted staircases, and any other areas of limited space.

Loft Areas.

Loft Roll Insulation is recommended on the floor of the residual area and flat ceiling loft space (minimum of 270mm). However, flat ceilings can also be insulated from the warm side with 62.5mm RIR boards.



ROOM IN ROOF CONSIDERATIONS

Surveying and Suitability for Room in Roof Installation.

Examples of circumstances when it would not be appropriate to proceed with installation without further remedial work, when there is existing evidence of any of the following:

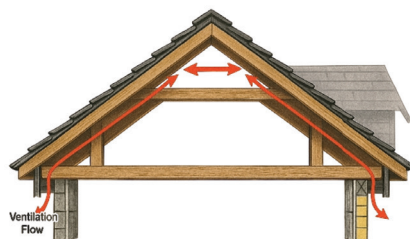
- Damp and mould on rafters and joists.
- Damp plasterboard.
- Wood Rot.
- Holes in the roof of felt.
- Signs of water penetration on timbers and wall areas.
- Timbers that are flaking and weak.
- Signs of condensation on surfaces in the cold loft space.
- Unsuitable existing cables and electrical connections.
- Bats or other protected species present in the roof space.

Ventilation

Without proper ventilation, a property could suffer from condensation issues after insulation has been installed in a Room in Roof. It is, therefore, essential that ventilation is either maintained or enhanced where required. In a Room in Roof, crossflow ventilation is achieved when air can travel up one side of a sloping ceiling, across the loft area at the top, and back down the other side. Where a ceiling is vaulted, and there is no crossflow ventilation between the two sloped areas, additional ventilation measures must be undertaken to ensure adequate ventilation.

Sloping Ceilings and Crossflow Ventilation.

It is very important to always ensure crossflow ventilation around the Room in Roof to prevent condensation. Eaves ventilation must be cleared of any old insulation that may be blocking the airflow, leaving at least a 50mm air gap. Figure 1 illustrates the air gap, ensuring the eaves are not blocked.



Example: cross flow ventilation to an untreated Room in Roof.



Figure 1.

Pre-Installation requirements: Combustion Appliances.

When installing insulation into the Room in Roof, you are responsible for the ventilation requirements for all existing fuel burning appliances within the Room in Roof. If a fuel burning appliance is present, this should be assessed by a competent person to determine whether the pre-existing ventilation and subsequent post-installation requirements are sufficient or further remedial work is required.

Works must not proceed unless a competent person has deemed the fuel burning appliance to have sufficient ventilation or any associated remedial actions (such as the installation of new vents) have been completed and approved by a person competent to do so.

ADDITIONAL CONSIDERATIONS

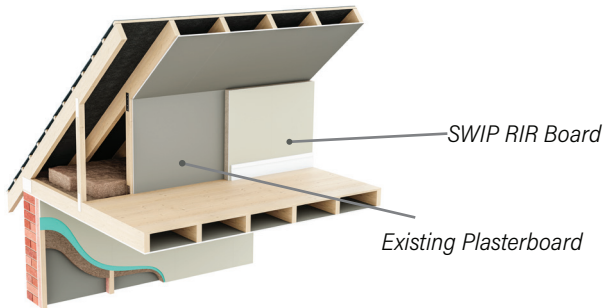
- The existence and safe operation of downlighters and other light fittings is considered and treated in line with the current guidance in the general requirements and guidance for the installation of cold roof loft insulation CITB Version 2.
- An appropriate sealing method is utilised, which does not compromise the safe use of the fitting, but allows compliance with the continuity of insulation and airtightness requirements in the Building Regulations and associated references in PAS2035:2023.
- The CITB guide should also be referred to in relation to dealing with high current carrying cables (e.g. electric shower cables and electric cooker cables which could also be present in this area).
- Before fixing the system, sufficient time must be allowed for damp proofing treatments, where applied, to dry out (see also BS 6576: 2005 for dry lining in conjunction with a chemical DPC application).
- The system can be cut using a fine-toothed saw to fit around windows, doors and air bricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured and appropriately sealed.
- Cutting should be done in a ventilated space - outside or in an area with a dust extraction system.
- A qualified technician should be consulted to make alterations to heating systems.
- A qualified electrician should be consulted to provide good electrical wiring and services.
- Identify all active or in-use balanced flues and mechanical vents. For each of these, carefully remove the flue terminal or duct cowl and then install suitable metal, PVC sleeve or trunking. This will extend the flue or ducting, so it projects beyond the surface of the proposed insulation system. It's crucial that this work is completed by a qualified and competent person.

ROOM IN ROOF

Timber Stud Walls

Option 1

SWIP RIR 62.5mm Board can be mechanically fixed with 100mm fixings through the existing plasterboard in the existing timbers at 300mm centres.



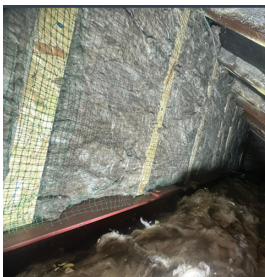
Thermal Envelope Diagram

Option 2

By accessing behind the timber studs adjacent to the residual loft space and insulating them with Glass Mineral Fibre Slab (95mm IWI EcoBatt) can be friction-fit between the rear of the timber studs and secured with insulation SWIP green netting (this should achieve the minimum U-value requirement as per Building Regulations).



Room in Roof - Sloping Ceiling

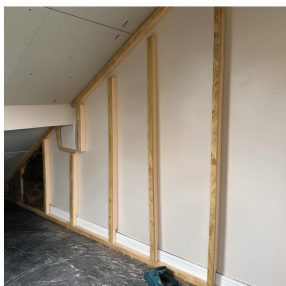


Room in Roof - Residual Area - Overboard

ROOM IN ROOF

Insulating Gable End

The solid wall elements of the heat loss perimeter should be fully insulated using the SWIP IWI method. For further information and installation guidance, please refer to the SWIP Internal Wall Insulation (IWI) Design Guide. For the installation of insulation onto a gable end wall, use the SWIP 95mm or 65mm Internal Wall Insulation system, consisting of high performance extruded polystyrene and Oriented Strand Board (OSB) studs, mineral wool insulation slab, and vapour control membranes.



Insulating Party Wall

Insulating the party wall is only necessary if the adjoining area is an unheated space.

A. If it is not adjoining a heated space, treat as an external wall and insulate in line with Building Regulations.

B. If it is a heated space, then there is no requirement for the wall to be treated with insulation, because in this scenario this is not classified as a heat loss wall.

C. If it is a solid wall, then there is no need to take any measures apart from restricting thermal bridging at the perimeter. If it is an unfilled cavity wall, then this can be insulated using party wall insulation or CWI as appropriate.

Dormer/ Sloping Window Detail

In many cases there may be space limitations on the heads, cills, and jambs in relation to dormer and sloping window sections within a Room in Roof. Where unfeasible or impractical, a 27mm or 12.5mm Insulated Reveal Board can be used to provide an uplift in thermal performance and reduce the risk of condensation by reducing the cold bridging.

TECHNICAL SUPPORT

Technical

Our expert technical team is here to support you at every stage of your project. We offer pre-installation reviews of technical survey photos to help prevent issues before work begins, as well as live video call assistance during installations.

E: Technical@swipiw.co.uk

P: 0121 384 1029 (Option 4)

Take a picture of the QR codes below to allow the details to be automatically added to your mobile contact list.



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