



RISE

Retrofit information,
support & expertise

Internal Wall Insulation: Installation phase

Supply chain advice pack

November 2025

Funded by:



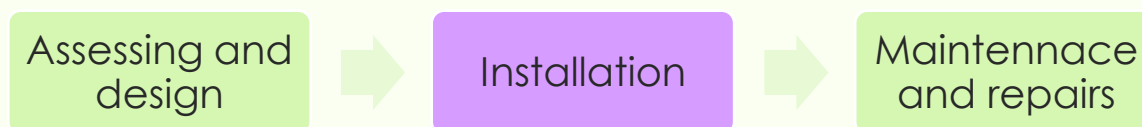
Department for
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& Net Zero

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Introduction

This pack is the second part of an Internal Wall Insulation (IWI) series. The other packs can be found [here](#).



Starting the Internal Wall Insulation (IWI) installation phase

Installing IWI to PAS 2035 and PAS 2030 standards involves several technical challenges, particularly achieving full thermal coverage of the walls while avoiding cold bridging (specific heat loss areas in the wall) e.g. junctions with ceilings and internal walls and resultant moisture risks. This advice pack supports installers by outlining the coordinated approach needed across the installation stage. Assessment and design, and maintenance and repairs are covered in other advice packs. These coordinated installation activities are undertaken by roles defined by the PAS Standards:

- **Retrofit Assessor (RA):** Visits the property to collect all the information needed.
- **Retrofit Designer (RD):** Creates the detailed design based upon the retrofit assessment and the RC's plan.
- **Retrofit Coordinator (RC):** Manages the PAS 2035 aspects of the retrofit from start to finish.
- **Retrofit Installer (RI):** The company carrying out the work in accordance with PAS 2030.
- **Client:** Decides on properties considered for Retrofit and agreeing plans presented by the RC.

Before work begins, a Retrofit Assessment of the dwelling allows confirmation by the **RD** of whether IWI is suitable for the building's type and condition and allows an evaluation by the **RC**. It identifies key risks like damp, structural issues, and ventilation.

A property specific design is produced which addresses junctions, reveals, fixings, interfaces and areas prone to failure if not properly resolved. These early stages are covered in **Internal Wall Insulation – Assessing and Design advice pack**, which provides guidance on risk identification and robust design.

It's important to recognise that even a well-designed system can be compromised by poor on-site execution and equally, good installation cannot compensate for an inadequate design.

This advice pack focuses on installation, where skilled workmanship and strict quality control are essential. Installers must follow PAS 2030 standards and manufacturer instructions, ensuring correct preparation, fixing, and detailing. Success depends on aligning design intent, materials, and the roles of the **RD**, **RC**, manufacturer, **RI** and client.

Finally, practical issues like access, sequencing, resident engagement, and service penetrations must be managed to ensure a durable, compliant outcome.

Compliance standards of PAS

Delivering compliant, high-performing IWI installations requires adherence to PAS 2030:2023, PAS 2035:2023, and supporting standards.

- Specifiers must ensure system compatibility, robust detailing, certified products, and compliance with moisture, fire, and thermal standards. PAS2030 Table B8-I1¹ outlines responsibilities including coordination with installers and provision of clear instructions and handover documentation.¹

Table B.8 – Measure-specific requirements for internal wall insulation (BFM.8)

Measure description		Internal wall insulation
Measure type		As measure description (no sub-division)
B8-I1	Additional installation requirements to those in the core of this PAS (Clause 4 to Clause 10)	The Retrofit Installer shall use methods of installation specified by the system supplier (where provided) and in accordance with the relevant retrofit design. This information shall be included in the installation method statement. In undertaking the installation, the Installers responsibilities shall include:
		a) before installation starts, confirming that the retrofit design has made provision for verifying that: • the IWI system provided for installation is that recommended in the pre-design building assessment and specified in the retrofit design; • all essential ventilation openings that require sleeving or safeguarding before installation are located and identified; • the position of all flues whether or not they are in service is determined and the measures that shall be taken to safeguard their proper functioning is determined; • any existing cables, pipework, ducting etc. that require it are removed or repositioned as/where necessary to accommodate the planned IWI system, with authorization from the relevant responsible body (where required) and undertaken by a person competent to undertake such work; • other areas of the dwelling and surrounding area that could be at risk during installation are adequately protected to confirm they are not damaged; • in solid wall structures made of porous materials, moisture movement, necessary for the managing of internal and/or external moisture loads, will not be impeded or altered to such an extent that moisture may begin to accumulate within fabric; and • in the event that any of these aspects is not adequately covered, liaising with the Retrofit Coordinator to provide for their undertaking.

Source: PAS 2030: 2023

- The Pre Installation Building Inspections (PIBIs), detailed in Table B8-I2₂, confirm readiness for works to commence and assess risks. These must be conducted by competent personnel with documented evidence. Inspectors must demonstrate technical knowledge, understanding of system compatibility, and understanding of retrofit design, as outlined in Table B8-I3₃.
- Installers must hold relevant qualifications (e.g. NVQ Level 2 or 3), the correct Construction Skills Certification Scheme certification, and system

¹ PAS 2030: 2023

manufacturer-approved training. All credentials must be documented and auditable.

Extract from PAS 2030: 2023	
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Source: PAS 2030: 2023

- At handover, installers provide a full documentation pack including warranties, maintenance schedules, and contact details. The RC ensures completeness and accuracy, with data uploaded to TrustMark Data Warehouse for funded projects.

- Additional records such as site diaries, inspection logs, and communication records, are recommended for quality assurance. These can be stored on the TrustMark Data Warehouse or Landlord's internal files. IWI systems must also comply with Building Regulations, BBA certification, and BS/EN standards for fire safety, moisture control, and insulation materials, ensuring long-term safety and performance.

TrustMark Data Warehouse – The Data Warehouse holds information about work carried out on a property which would have the potential to become a consumer-facing platform where homeowners can access a property 'logbook' and PAS 2030 documents.

Resident engagement

- Resident support is vital to successful IWI retrofit projects and required in PAS. Clear communication, respectful practices, and early engagement help build trust and ensure access.
- Residents should be informed about the benefits of IWI, improved energy efficiency, lower heating costs, and enhanced comfort, as well as the project timeline and safety measures. A Resident Liaison Officer can serve as a consistent point of contact.
- Changes to the property's internal appearance, such as new finishes or repositioned services such as radiators, as well as the loss of internal space must be explained clearly, ideally with visual aids.
- The expected disruption of the install should also be made clear to the resident such as removing anything hanging on the walls and covering items from dust.
- Change to how residents can use the homes after installation need to be clearly explained. E.g. Unable to hang shelves in the same way.
- Respecting privacy and maintaining cleanliness are essential, especially in occupied homes.
- Where wet rooms are in receipt of IWI installation, temporary provision of washing, cleaning and cooking facilities may be required.

Pre-start surveys and building inspections

- Pre-start surveys and inspections are essential to ensuring IWI works are technically appropriate, safe, and compliant with PAS 2030 and PAS 2035. The process begins with the installer reviewing the retrofit assessment to confirm system suitability and identify risks such as damp, structural movement, or ventilation issues.
- A competent person must carry out the Pre-Installation Building Inspection (PIBI), checking substrate condition, moisture levels, and structural integrity. Where needed, wall load assessments and pull-out tests confirm the structure can support the insulation system.

- Site preparation must follow CDM regulations, with a Health and Safety Phase Plan in place. Installers should plan for safe access, welfare facilities, material storage, and clear reporting lines to the site manager.

Some key aspects of installation

Manufacturer guidance

- Follow system-specific instructions for materials, fixings, and sequencing. Only approved components should be used. Installers must be trained, and quality monitored through checks and documentation.

Substrate, adhesive and primer

- The substrate must be clean, dry, stable, and free from any damp or mould. Defective plaster should be removed, and localised hammer tests may be needed. Correct thickness and application of any adhesive are critical.

Setting out and floor-level detailing

- Accurate alignment is essential to avoid gaps and uneven finishes. Skirting or protective profiles should be used to seal and finish the base. Thermal continuity and airtightness must be ensured at floor and ceiling level. Gaps where radiator pipes and electric cables penetrate the floorboards should also be sealed, as should any gaps between individual tongued and grooved floorboards.

Moisture and vapour control

- A vapour control layer should be installed where required to prevent interstitial condensation within the wall structure. All joints and penetrations should be sealed and airtight. Breathable insulation materials should be used where appropriate.

Movement joints

- Joints must align with structural breaks and be placed at internal corners, in long wall runs and junctions with other building elements. Expansion gaps around openings should be sealed with flexible, airtight materials.

Final finish

- Ensure compatibility with insulation system and vapour control strategy. Use appropriate beads and trims for clean edges and detailing. A decorative finish should be agreed upon in advance with the client.



Source: Centre for Sustainable Energy

Aspects of interfacing and detailing

Service penetrations and fixtures

- Cables and pipes must pass through sleeves or grommets and be sealed with flexible, airtight materials to maintain vapour control and thermal performance. Fixtures, e.g. radiators and shelves, should be fixed back to the substrate using load-bearing fixings or to the IWI system if allowed.

Openings and corners

- Use pre-formed beads for clean edges. Expansion gaps around frames should be sealed with backer rod and airtight sealant to prevent air leakage and maintain thermal continuity.

Thermal and features

- Downstand beams, inside cupboards, and internal recesses must be insulated or detailed to maintain thermal continuity. Reduced thickness IWI or thermal breaks may be required for difficult junctions or areas of constrained space which must be compatible with the IWI system warranty.

Trims, ceiling junctions and fire barriers

- Use purpose-made trims at all terminations. Ceiling junctions must be sealed to prevent air movement. Fire barriers must be non-combustible, continuous, and correctly positioned.

Moisture control and internal detailing.

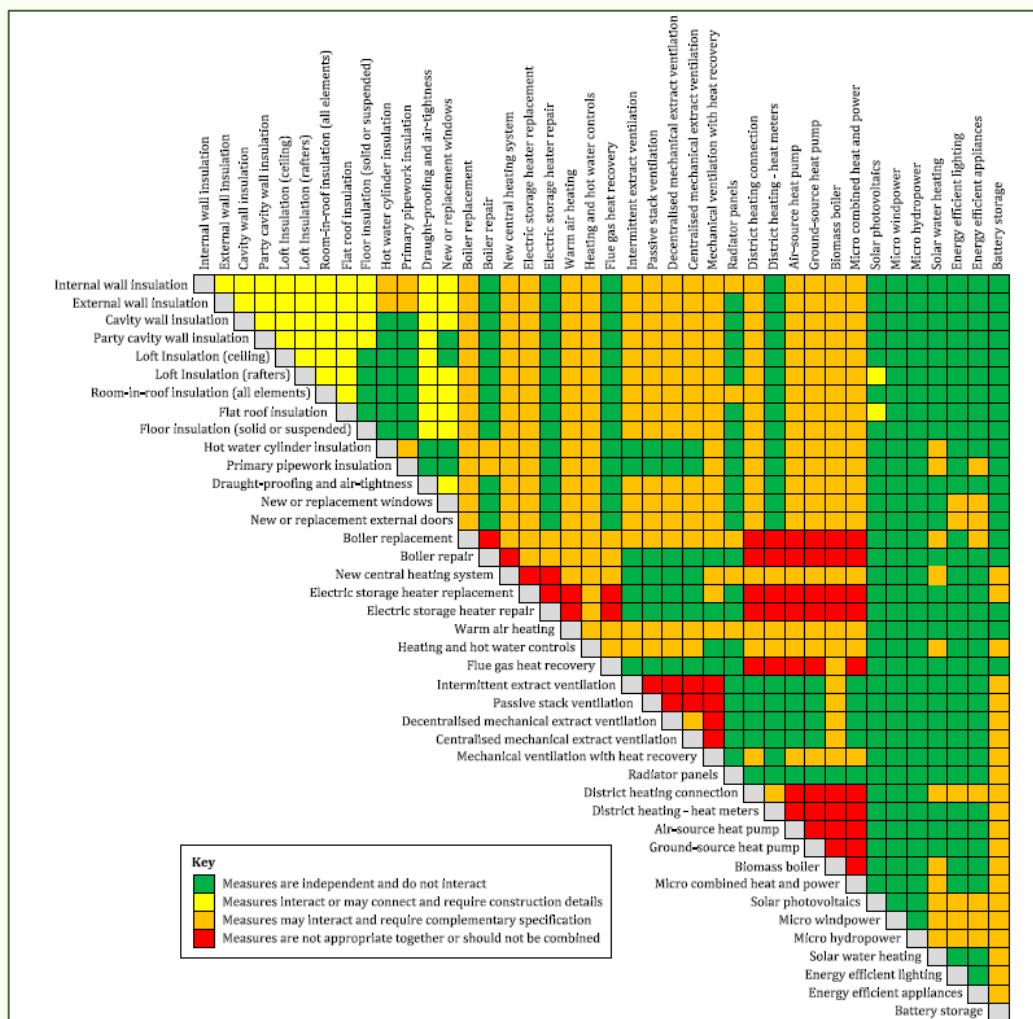
- Ensure all finishes are breathable where required on traditional properties. Windowsills and reveals should be insulated and sealed to prevent condensation. Avoid water ingress from internal sources, e.g. wet rooms, by using moisture resistant materials and ventilation.

Sequencing of IWI

Effective coordination between trades is key to a successful IWI installation. Proper sequencing maintains airtightness, thermal continuity, and system integrity, and supports compliance with PAS 2030 and PAS 2035.

IWI should be installed after structural repairs and damp remediation but precede ventilation upgrades, heating systems, or renewables (though consideration should be made for enabling works in forming penetrations so as not to undermine the IWI installation). For example, installing IWI before MVHR ensures airtightness, while sequencing it ahead of heat pumps or boilers helps reduce heating demand and improve efficiency.

The PAS 2030 Measures interaction matrix identifies to what extent measures interact with each other or where they are in conflict and should not be installed together.



Source : PAS 2030 : 2023.

Image 1 - PAS Measures Interaction Matrix Source: PAS 2030 : 2023 Table D.1 P34

- **Windows & doors:** Sequence installations to maintain airtightness and thermal continuity.
- **Mechanical & electrical:** Plan penetrations (radiators, sockets, light fixtures) early.
- **Ceiling and floor joints:** Coordinate floor and ceiling interfaces with IWI to ensure continuity, sealing joints properly to prevent thermal bypass and air leakage whilst integrating with other insulation upgrades e.g. loft or floor insulation.
- **Internal fixtures:** Fix items (radiators, cupboards, TV brackets) back to the substrate with load-bearing brackets or pattresses or to the IWI system if allowed.

Quality and supervision throughout the project

In PAS 2030 and 2035 compliant IWI projects, the **RC** works with the **RI** ensuring quality and compliance. A good source of information about quality processes is provided by DESNZ Retrofit; Internal Wall insulation - Guide to best practice, September 2021 (available [here](#)), which if followed, demonstrates compliance with PAS 2035 requirements.

Undertaking regular site audits to check workmanship, sequencing, and detailing is very helpful. Photos must be taken to document key stages like substrate preparation, fixings, insulation coverage, and finishes.

System manufacturers can also conduct audits and provide technical support, especially for complex details. Their sign-off may be required for warranties.

Conclusion

A technically sound design can still fail if the installation is poorly executed. Ensuring high-quality workmanship and rigorous oversight is essential to the long-term performance and safety of the IWI system.

Resources



Podcast: All RISE podcasts are available [here](#).

PAS podcast: "PAS for Warm Homes projects" available [here](#).



Masterclass: All RISE masterclasses are available [here](#).

PAS masterclass "PAS 2035 compliance" available [here](#).



Advice pack: All RISE advice packs available [here](#).

EWI advice pack: "Installation phase" available [here](#).



This pack aims to share insights, good practices, and lessons learned from the sector. It is intended for informational purposes only and does not constitute as recommendations or endorsements of specific suppliers, products, or services or as legal advice. Please always check the latest regulations.