



# DRY LINING SOLUTIONS

Optima Dry Lining System

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# THE OPTIMA DRY LINING SYSTEM

## What is Optima?

Isover Optima is a NSAI agrément certified internal wall insulation system designed to improve energy performance while helping to preserve the character of existing buildings. It offers a dry installation method, integrates airtightness and vapour control, and allows flexibility on-site. We provide standard guidance for typical applications, and our technical team is available to support more complex scenarios where building condition or moisture risks require specialist input.

## Why choose Optima?

Optima is often suitable for consideration in conservation of old and historical buildings where there is solid wall construction, as it uses traditional, natural materials: mineral wool insulation and gypsum board, which do not need to be glued and therefore may assist to preserve the original elements while allowing for ongoing adaptation. The system further mitigates impact on the building by accommodating new services, and is designed for circularity through deconstruction with the mineral wool, clips and steel frame highly suitable for reuse.

Additional key benefits are presented below:

- ✔ Contributes to system thermal and acoustic performance
- ✔ Thermal Bridge Mitigation
- ✔ Dry, clean, lightweight system with minimal waste, enabling rapid construction times
- ✔ Airtightness and moisture control membrane
- ✔ Economical



**NSAI**

**FIRST NSAI AGRÉMENT  
CERTIFIED INTERNAL  
INSULATION SYSTEM  
IN IRELAND**

## Where to use



Residential



Non Residential



New and Old

\*When installed in accordance with our recommendations.



# 1<sup>ST</sup> NSAI AGRÉMENT CERTIFIED INTERNAL INSULATION SYSTEM IN IRELAND - WHAT DOES IT REALLY MEAN?

The Isover Optima Dry Lining System is the 1st NSAI Agrément Certified Internal Insulation System in Ireland which is a big recognition but what does it really mean?

NSAI Agrément Certification establish proof that the certified products are 'proper materials' suitable for their intended use.

## Optima minimises the risk of condensation

Required since 2016 for internal insulation of solid walls under BS 5250, the Code of Practice for Control of Condensation in Buildings, Isover Ireland has carried out a dynamic condensation and moisture risk analysis. The study was conducted on a number of external wall typologies in two locations in Ireland (Dublin and Cork) using the method specified in I.S. EN 15026 Hygrothermal Performance of Building Components and Building Elements - Assessment of Moisture Transfer by Numerical Simulation.

Keeping in mind the potential consequences of condensation in the building such as mould growth, insulation degradation, poor air quality, health problems, construction damage; avoiding it should be one of the main considerations when reviewing Dry Lining Systems.

Better insulation, draught-proofing on doors and sealing windows minimise draughts and stop heat escaping from the building which is hugely important from the energy saving perspective. However, those actions can also reduce water vapour escaping that leads to increased condensation risk. Optima mitigates that risk due to Vario® intelligent membrane which helps with airtightness as well as moisture management and construction vapour permeability.

## Addressing Thermal Bridging in Building Construction with Optima

The linear thermal transmittance " (Psi) describes the additional heat loss associated with junctions and around openings. As part of the NSAI assessment process, the Isover Optima Dry Lining System was applied to typical external wall build-ups and both the -value and temperature factor (fRsi) were calculated for all junctions. When installed in accordance with these details thermal bridging will be minimised and local condensation problems will be mitigated.

In other system build ups, dry lining systems with metal mushroom fixings can create thermal bridging. Thermal bridging can lead to further heat losses and summer heat gains for conditioned spaces in buildings. Moreover, if the indoor environment is not adequately ventilated, thermal bridging may cause the building material to absorb humidity into the wall, which can result in patterning and mould growth (as demonstrated in the photo below).

Contact our Technical Department to obtain a copy of the NSAI certified thermal bridge details and Contractor Survey/ Installation guidance.



# OPTIMA DRY LINING SYSTEM - MITIGATING THERMAL BRIDGES

## What are thermal bridges?

The International Passive House Association describes thermal bridges as localised areas of the building envelop that experience greater rates of heat loss than surrounding areas. In practical terms, this usually means a change of orientation or junction, fixings or structural elements interrupting the building's insulation. Notable examples are the steel lintels over windows and doors in masonry construction, as well as the windows and doors themselves.

## Why do they matter?

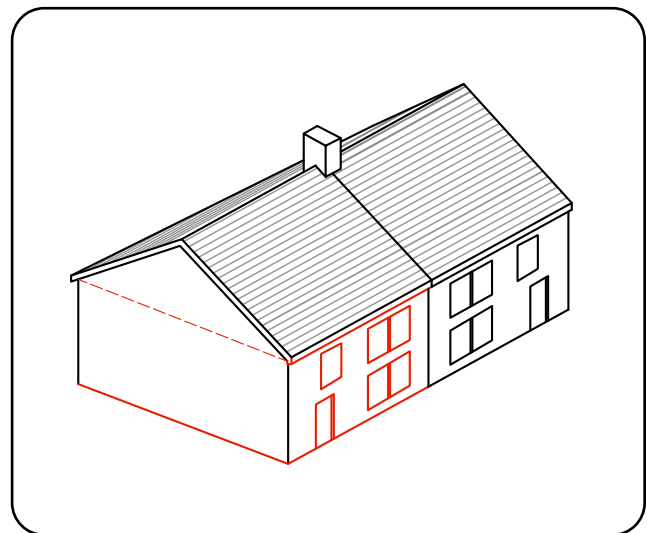
In addition to a higher energy bills, thermal bridges can create comfort complaints by reducing the mean radiant temperature, even with the heating system on. One example is the chill one experiences sitting next to a window in winter.

Further, thermal bridges can create compromise indoor air quality through mould growth, and even cause damage in capillary structural members, such as timber beams, posts, joists and studs through adsorption.

## How does this happen?

Thermal bridges create localised areas of lower temperature. This causes some areas to experience higher vapour pressure or drive, meaning more moisture will diffuse through materials. Lower temperature also means there is a lower dew point, or temperature at which vapour will change state into its liquid state (condensation). The likelihood of this occurring depends on temperature, how vapour permeable the material(s) are, and the moisture content of air. Capillary materials such as timber and some types of masonry do not exhibit condensation at the dew point, but will adsorb moisture until they reach saturation. Over time, this can damage the material or create conditions conducive to mould growth.

**Figure 1 - Typical locations; non-repeating thermal bridging**  
Locations highlighted in red



Source: SEAI



# KEY CONSIDERATIONS FOR RESPONSIBLE INTERNAL INSULATION

## Key considerations

- ☑ Talk to us, if site conditions include any key areas of risk, check-in before you proceed. These include:
  - 🚩 Signs of dampness or water ingress
  - 🚩 Poor building condition (e.g. cracked render, missing pointing, roof defects)
  - 🚩 Unrendered walls
  - 🚩 Multi-storey single leaf construction including either joists built against/into walls which may deteriorate and may also need fire protection, or concrete slabs which can cause significant thermal bridges.
  - 🚩 Basement or below-grade walls, which do not allow release of vapour to the exterior
  - 🚩 Brick or other porous elements, even rendered can allow moisture to move through the wall and cause further risk.
  - 🚩 High internal humidity environments (e.g. pools, showers)
- ☑ Undertake site specific condensation risk specialist analysis. Isover have carried out condensation risk analysis on key building typologies in Ireland, however, in instances related to the above, the project team should further risk assess the above through a specialist consultant.
- ☑ Ensure fire resistance is preserved, particularly at floor/wall junctions. E.g. floors, the plasterboard ceiling and floor boards should not typically be cut back, unless properly reinstated or fire stopped.
- ☑ Note that wall sealant technology is reputed to have had many challenges in its day, however, the project team may wish to consider use of clear hydrophobic coatings, many of which are long life (15 years before reapplication), water based and environmentally safe yet offer significant conservation benefits, to keep the wall dry while remaining vapour permeable, mitigating spalling, significantly improving the thermal conductivity of the wall and most importantly further mitigate condensation risk and thereby allowing greater levels of insulation thereby supporting the effective ongoing use of structures, critical to their life and conservation.
- ☑ Training is strongly recommended, contact our Technical Academy for further information.



Contact our technical team

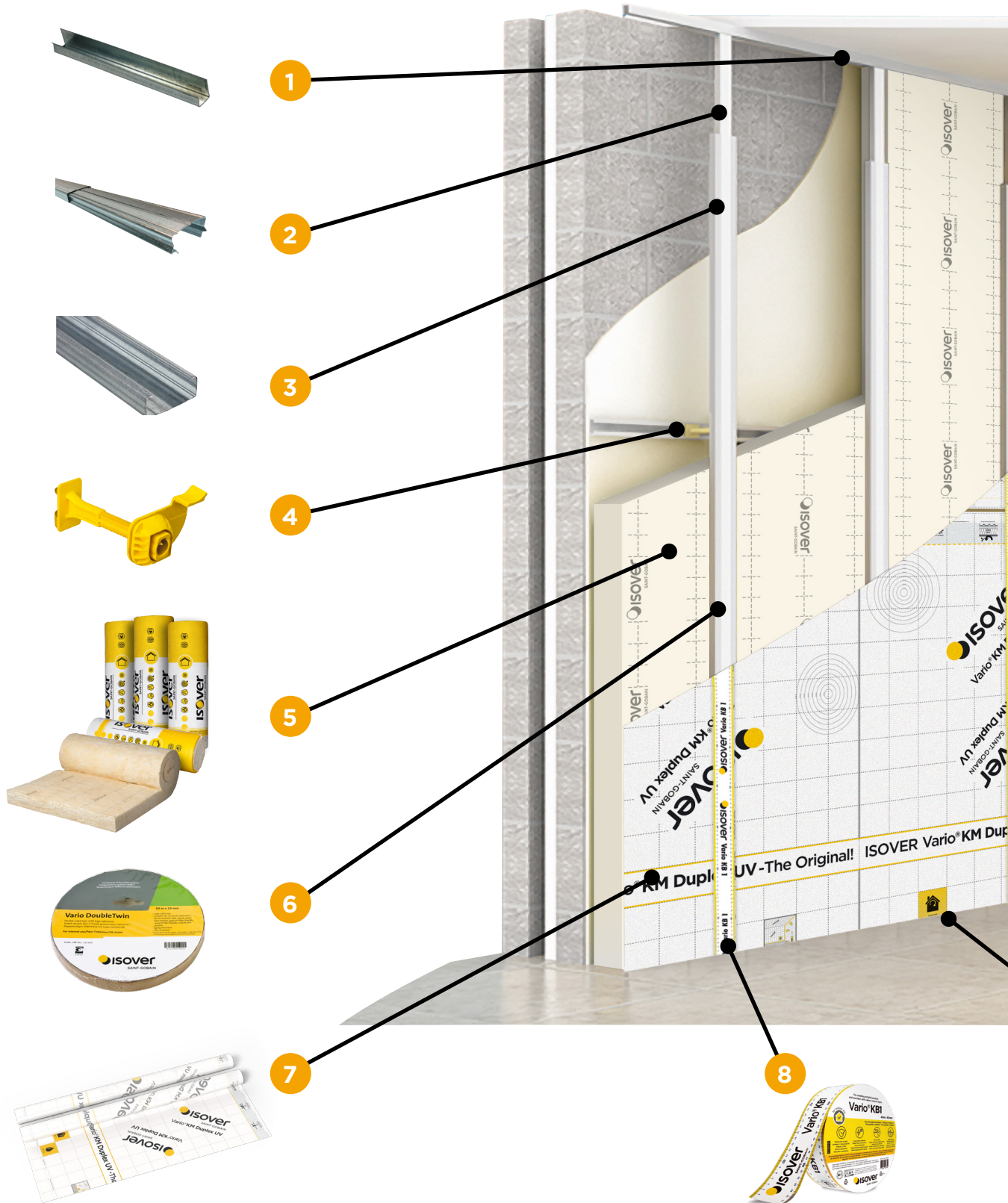
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# OPTIMA DRY LINING SYSTEM OVERVIEW





## I. Metal frame

1. Optima Floor and Ceiling U-Channel
2. Optima 500mm Extension
3. Optima 2.4m C-channel
4. Optima Support Clips for:
  - Reasonably plumb and level Optima Support
  - Very uneven Optima Direct Support (70-160)

## II. Insulation

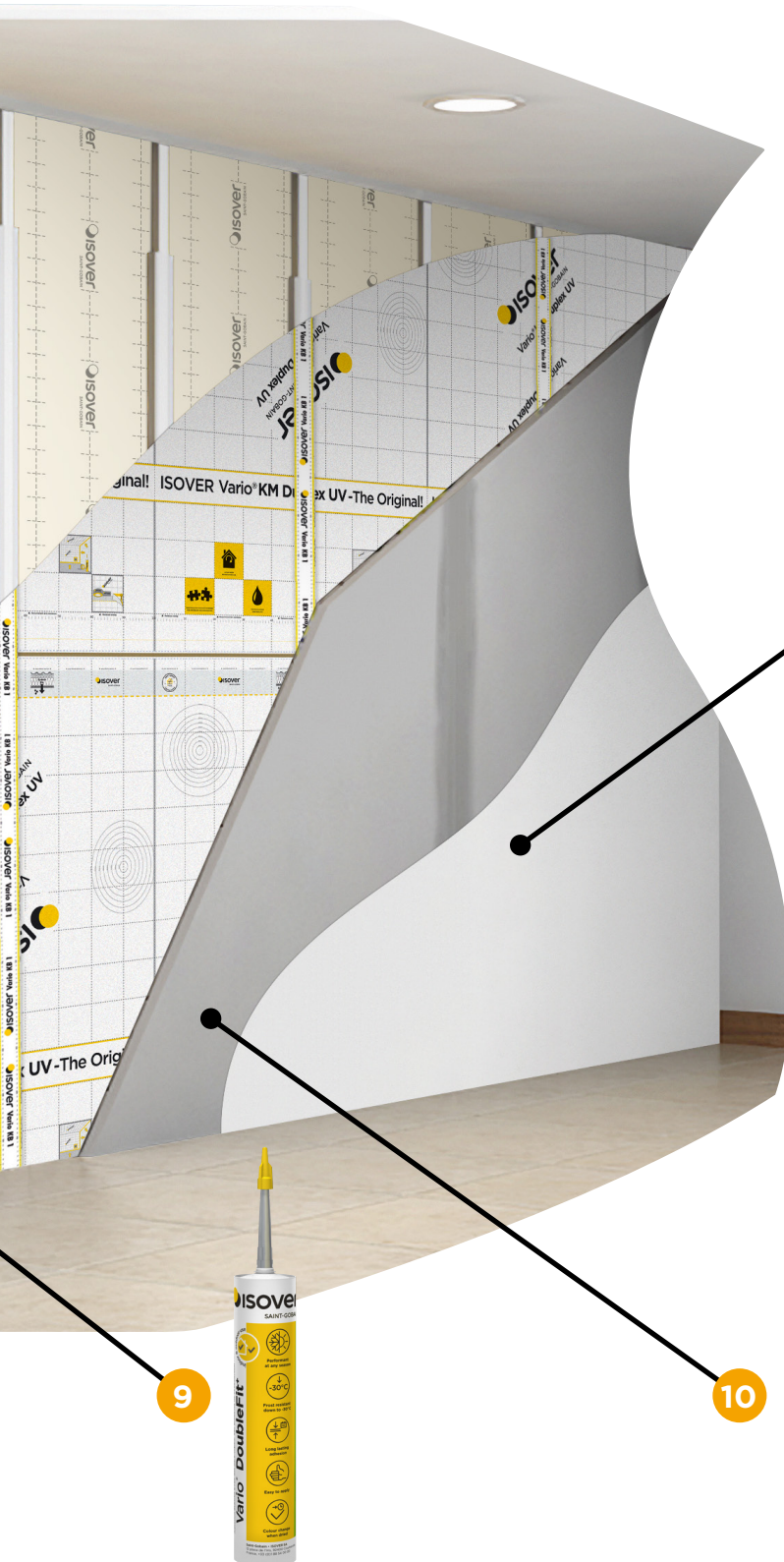
5. Isover insulation material, e.g.
  - Comfort 35 Lanaé (0.035W/mK)
  - Comfort Panel 32 (0.032 W/mK)

## III. Airtightness & Moisture control layer

6. Vario® DoubleTwin
7. Vario® KM Duplex UV airtightness and vapour permeable layer
8. Vario® KB1 one-sided adhesive tape
9. Vario® DoubleFit+

## IV. Facing

10. Gyproc Plasterboard  
(Various specifications of boards available)
11. Decorative Finish  
(Various specifications of Gyproc Finishing Plasters or Gyproc Taping and Jointing products available).



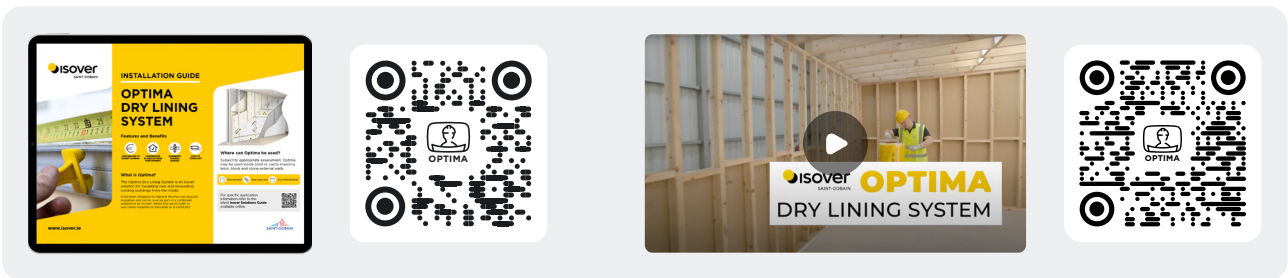


For further details view our

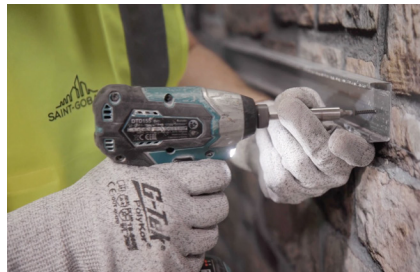
## OPTIMA INSTALLATION GUIDE

- ✔ Contributes to system thermal and acoustic performance
- ✔ Thermal Bridge Mitigation
- ✔ Dry, clean, lightweight system with minimal waste, enabling rapid construction times
- ✔ Airtightness and vapour control layer
- ✔ Economical

Visit [isover.ie](https://isover.ie) or scan QR code



## INSTALLING OPTIMA



### 1 Ceiling, Floor and Perimeter Channel

- Measure and mark the position of Optima Floor and Ceiling U-Channel. *(Generally measured as the sum of: Insulation thickness + 20mm for channel width)*
- Snap a chalk line at ceiling and at floor where the Optima U-Channel will be positioned.
- Snap a chalk line at the corresponding vertical edge perimeter. *Cut and fix Optima U-Channels along the chalk line on the ceiling, the floor and the edge perimeter.*

### 2 Horizontal Mid-Height Optima C-Channel

- Along the full length of the wall fix Optima C-Channel to form a rail, open side facing the room, half way between floor and ceiling (for walls that span up to 2700mm).
- For walls that span greater than 2700mm, space the horizontal Optima C-Channel rails at maximum 1000mm intervals.
- Secure with mechanical fixings appropriate to the substrate at maximum 600mm centres.

### 3 Support Pins

- Mark the position of the vertical Optima C-Channel centres on floor, ceiling and horizontal rail(s).
- Insert Optima Support Clip pins into the horizontal Optima C-Channel rail(s) at the marked positions.





#### 4 Insulation

- Cut and install Isover Comfort 32 Panels or Comfort 35 Lanaé insulation behind the Optima Floor and Ceiling Channels. Ensure complete wall coverage with no visible gaps between or behind the insulation.
- **Optima Support Pins should be pushed through the insulation ready to receive the pre-prepared vertical Optima C-Channel linings.**



#### 5 Vertical Optima C-Channels

- Insert the Optima 500mm Extension pieces into the top of each and every vertical Optima C-channel needed in the framework, ensuring that there will be minimum 100mm engagement with the top of each vertical Optima C-Channel when each Optima 500mm Extension piece is fully extended into the Optima Ceiling U-Channel.



- Attach the Optima Support Clips which will receive the Optima Support Clip Pins into the back of each Vertical Optima C-Channel to match the height of the Optima Support Clip pins on the rail(s).
- Ensure the Optima Support Clips are orientated to the open position. *“Open” is when the tab on the Optima Support Clip is perpendicular to the lining channel.*



- Insert each pre-prepared vertical Optima C-Channel lining into the base track where marked and push each vertical Optima C-Channel lining forward so that both halves of the Optima Support Clip(s) engage.
- For each one, slide the Optima 500mm Extension Piece from the top of the vertical Optima C-Channel lining up and into the Optima Ceiling U-Channel until it fully engages.
- Plumb Optima C-Channel lining and turn Optima Support Clip to the locked position. *“Locked” is when the Optima Support Clip’s tab is parallel with the lining channel.*





## 6 Isover Vario Membrane

- Apply Isover Vario DoubleTwin tape to the face of the vertical Optima C-Channel linings. (Approximately 100mm from head and base).



- Apply the Isover Vario KM Duplex Membrane across the entire surface of the Optima Metal Framework, overlapping the perimeter by approximately 100mm.
- A 100mm overlap should also be maintained where layers of Isover Vario KM Duplex membrane intersect.



## 7 Isover Vario Membrane

- Use Isover KB1 tape to seal all overlapping sections of Isover Vario KM Duplex Membrane.



- Seal around perimeter all penetrations as per Isover's recommended detailing principles, using Isover Vario Tapes and Sealants.



## 8 Plasterboard Lining

- Select the appropriate type of Gyproc Plasterboard based on project requirements.
- Secure the Gyproc plasterboard to the vertical Optima C-Channel linings as per Gyproc's current recommendations.



## 9 Decorative Finish

- Prepare the surface for direct decoration using a Gyproc Finishing Plaster or a Gyproc Taping and Jointing system applied in accordance with Gyproc's current recommendations.

### NOTE:

Designers must ensure the fire resistance of floor and wall junctions is maintained. The Optima system does not provide fire resistance or fire stopping.



# CRITICAL INSTALLATION AND DESIGN CONSIDERATIONS

The dwelling should be surveyed initially to identify the key characteristics of the building; most importantly the wall construction, its overall condition and penetrations. Wall features, thermal bridges, ventilation requirements, reveals, signs of damp and suitability for fixings should be assessed as key parts of the appraisal.

Certain wall types, such as single leaf solid brick or stone walls require more careful attention. The more porous the wall construction, the greater the risk of interstitial condensation (i.e. within the construction), therefore the selection and thickness of insulation are to be carefully considered. Excessive internal insulation on a porous wall can be detrimental if designed incorrectly, particularly in multi-storey solid wall buildings where joist ends may be built into the wall. Heat from the building assists in keeping the joists dry. This effect is then limited by internal insulation if it is not given special consideration as outlined below.

The intelligent characteristics of the Isover Optima internal insulation system using Vario® technology allows for summer drying of the wall which is facilitated by the vapour permeable characteristics of Isover glass mineral wool insulation and Gyproc plasterboard lining. This has been assessed on a range of wall types for application in Ireland. For more challenging scenarios such as those described below, vapour permeable water proofing treatments to the wall exterior, i.e. hydrophobic coatings can help improve the dryness while maintaining the drying capability of the wall which thereby accommodates further internal insulation of the wall.

Under normal conditions of internal humidity, Optima is highly suitable and adaptable for internal insulation (R-value up to 4.5) of hollow block, solid blockwork and cavity walls. Furthermore, it may typically be used on rendered brick walls or unrendered stone walls in good order up to one-storey with limited thicknesses of insulation (R-value up to 1.5) and rendered stone walls above one-storey (R-value up to 3.0).

Unrendered solid brick walls require treatment to the exterior as indicated above. Internal insulation to zones of higher internal humidity will require use of Isover StopVap membrane in lieu of Vario® but also the application of a suitable external wall treatment.



## Please refer to the Code of Practice for Retrofit 2014

<https://www.seai.ie/sites/default/files/documents/S.R.54-2014.pdf>

Amended in 2022, this is the key document that is the backbone of NSAI, SEAI and Building Standards for Retrofit in Ireland.

## Need regulatory advice?



Contact our technical team

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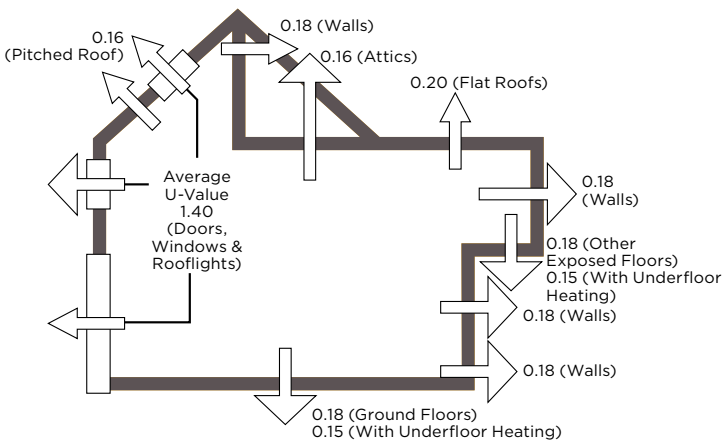
# NEW DWELLINGS

## Republic of Ireland

### Part L - Conservation of Fuel and Energy

Part L 2019 introduced the nearly Zero Energy Buildings (nZEB) which affects all new dwellings from 1st November 2019. In order to achieve this, the Maximum Permitted Energy Performance Co-Efficient (MPEPC) reduced from 0.40 to 0.30 and the Maximum Permitted Carbon Performance Co-Efficient (MPCPC) reduced from 0.46 to 0.35.

#### Technical Guidance Document Part L 2022



#### Sound Performance Levels - New Build

Separating Construction	Airborne Sound Insulation	Impact Sound Insulation
	$D_{nT,wd} B$	$L'_{nT,wd} B$
Party Walls	53 (min)	-
Floors (including stairs with a separating function)	53 (min)	58 (max)

Minimum standards for U-Values ( $W/m^2 \cdot K$ )

25% increase in overall energy efficiency (MPEPC = 0.30) Upper limit of air permeability is  $5m^3/(h \cdot m^2)$

#### Note:

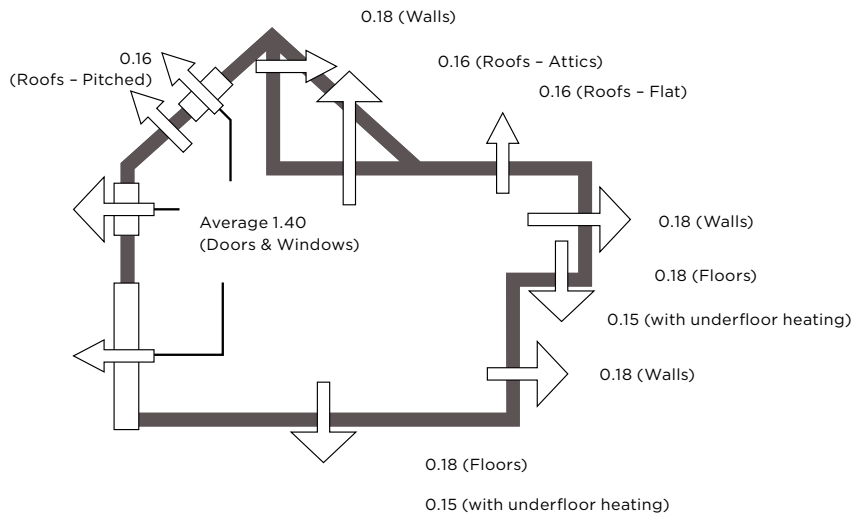
Unlike the regulations for Northern Ireland, there is no provision in the regulations for the adoption of 'Robust Details' to completely avoid on-site testing however the requirement for testing may be reduced.

## Northern Ireland

### Technical Booklet F1 - Conservation of Fuel and Power in Dwellings

The Dwelling Emission Rate (DER) for new homes must not exceed the Target Emission Rate (TER). Current standards require the DER to be at least 40% below the TER for houses and 25% below for flats, reflecting the 2022 regulations.

#### Technical Booklet F1:2022



Minimum standards for U-Values ( $W/m^2 \cdot K$ )  
Upper limit for air permeability is  $10m^3/(h \cdot m^2)$

#### Note:

A twin frame party wall has a default U-Value of  $0.50 W/m^2 \cdot K$  which may be reduced to  $0.20$  where effective edge sealing is provided around all exposed edges and in line with insulation layers in abutting elements. This may be further reduced to zero where the cavity is also fully filled.

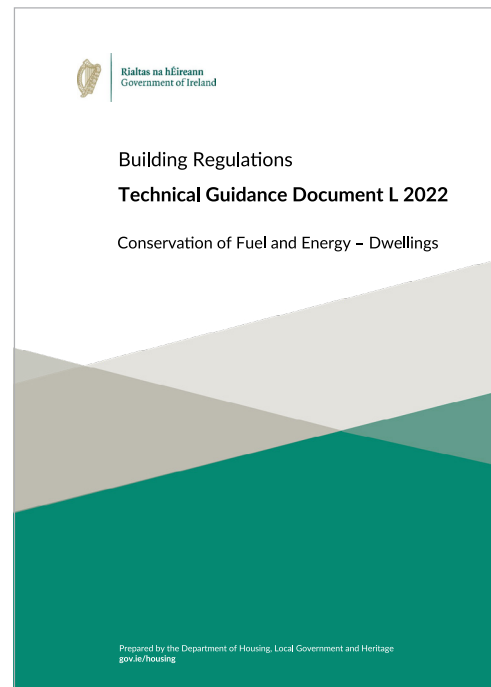


# AIRTIGHTNESS REGULATIONS

## Republic of Ireland

The airtightness of a dwelling, or its air permeability, is expressed in terms of air leakage in cubic metres per hour per square metre of the dwelling envelope area when the building is subjected to a differential pressure of 50 Pascals ( $\text{m}^3/(\text{h}\cdot\text{m}^2)\text{@}50\text{Pa}$ ).

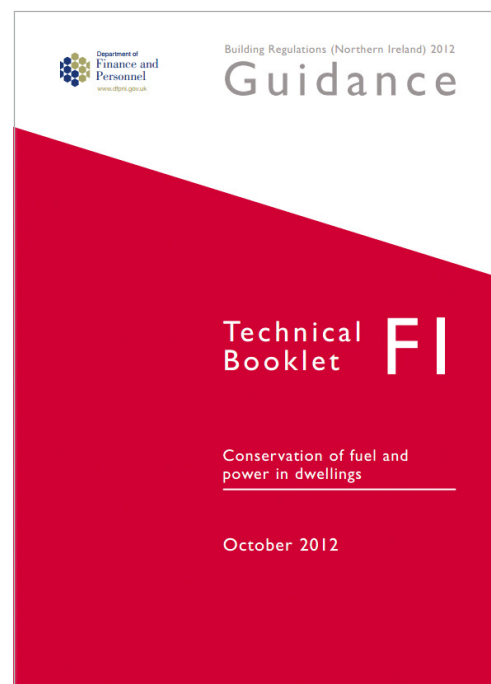
The Building Regulations 2022 TGD L Dwellings indicates that reasonable provision for airtightness is to achieve a pressure test result of no worse than  $5\text{m}^3/(\text{h}\cdot\text{m}^2)\text{@}50\text{Pa}$  in a new build. Current good practice for energy efficient dwellings includes achieving airtightness of better than  $3\text{m}^3/(\text{h}\cdot\text{m}^2)\text{@}50\text{Pa}$  and best practice is less than  $0.6\text{m}^3/(\text{h}\cdot\text{m}^2)\text{@}50\text{Pa}$ . The airtightness appropriate for a particular dwelling design will depend upon the Building Energy Rating the builder is aiming to achieve. Care should be taken to ensure compliance with the ventilation requirements and permanent air supply of Part F and of Part J of the Building Regulations respectively.



## Northern Ireland

The DFPNI Technical Booklet F1 for new dwellings will require, type-testing of all new dwellings to an airtightness standard of no greater than  $10\text{m}^3/(\text{h}\cdot\text{m}^2)$  at 50Pa. For some dwellings where the carbon emission rate is difficult to meet, the airtightness target may also need to be reduced to meet the overall carbon emission rate required by the Regulations.

The DFPNI Technical Booklet F2 for work in buildings other than dwellings requires all commercial and industrial buildings with a gross floor area greater than  $500\text{m}^2$  to be tested for air permeability to a minimum standard of  $10\text{m}^3/(\text{h}\cdot\text{m}^2)\text{@}50\text{Pa}$ .





# MOISTURE CONTROL PERFORMANCE

Ireland’s high levels of humidity make it essential to ensure that condensation risks within the construction are carefully assessed by the project team.

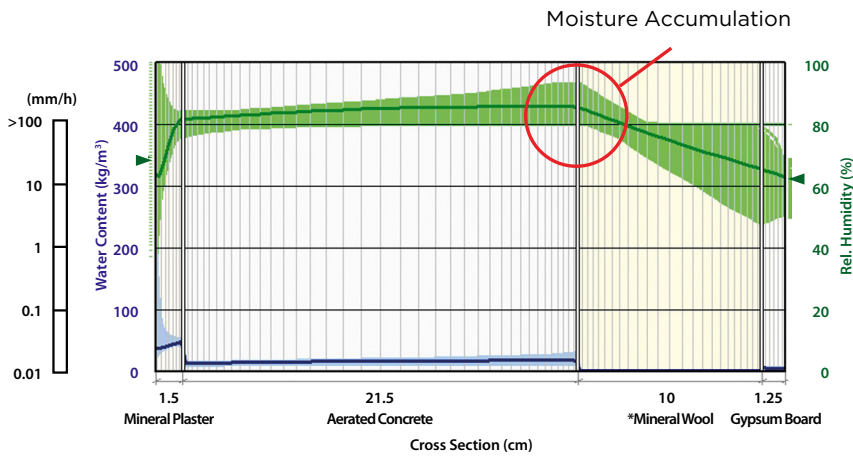
Simulating the Optima Dry Lining System on 215mm Aerated Concrete using WUFI\*, we can see that moisture accumulation is not an issue in this scenario due to the performance of the Vario® vapour control membrane.

The example shown is a 3 year simulated model of a 215mm aerated concrete block that is insulated internally with worst case scenario conditions i.e. North orientated with a high internal moisture load.

Without Vario®, a moisture accumulation on the internal face of the concrete wall can be seen in Fig 1, however when Vario® is introduced not only is the structure airtight but you are also protected from moisture Fig 2.

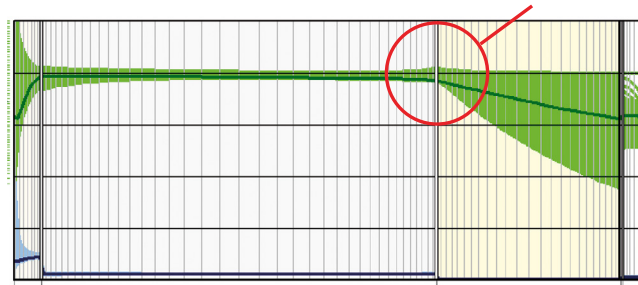
\*WUFI-ORNL/IBP is a menu-driven PC program which allows realistic calculation of the transient coupled one-dimensional heat and moisture transport in multi-layer building components exposed to natural weather.

**Fig 1: WUFI chart - without Vario® layer**



**Fig 2: WUFI chart - with Vario® layer**

Vario® ensures drying out of structure



**NOTE:**

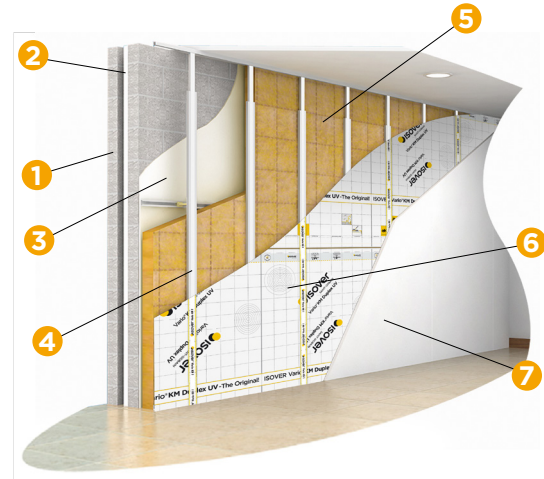
**We strongly recommend that Designers and Contractors attend Optima training with the Saint-Gobain Technical Academy prior to specification and installation due to the complexity of use of internal insulation on solid wall construction in particular.**

# WHERE CAN THE OPTIMA DRY LINING SYSTEM BE USED?

**Ideally in rendered stone, block or cavity walls and single storey rendered brick walls.**

## Cavity Wall Partial Fill

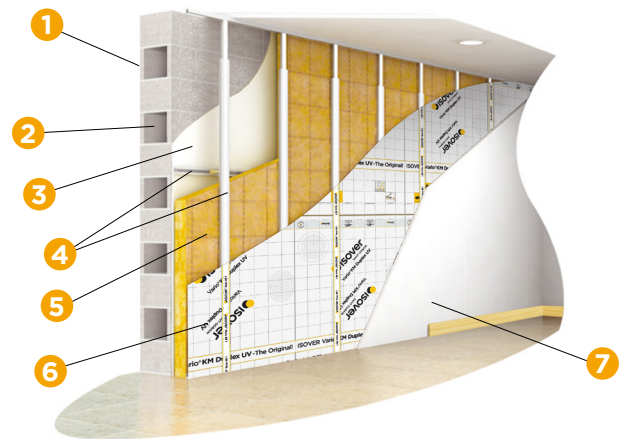
1. 15mm external render + 100mm block
2. 50mm cavity + 50mm foam (0.038)
3. 100mm block + 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat
4. Optima metal studs + fixing
5. Isover insulation
6. Vario® membrane + tapes
7. Gyproc Habito® Plasterboard



Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic roll	0.35	57.5
50mm Metac Roll	0.27	82.5
60mm Comfort 32	0.25	92.5
100mm Metac Roll	0.20	132.5
140mm Comfort 35 Lanaé	0.16	172.5
150mm Metac Roll	0.15	182.5

## Hollow Block

1. 15mm external render
2. 215mm hollow block
3. 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat
4. Optima metal studs + fixings
5. Isover insulation
6. Vario® membrane + tapes placed on studs
7. Gyproc Habito® Plasterboard



Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic roll	0.76	57.5
50mm Metac Roll	0.47	82.5
60mm Comfort 32	0.40	92.5
100mm Metac Roll	0.28	132.5
140mm Comfort 32*	0.21	172.5
150mm Metac Roll	0.20	182.5



### Concrete Wall

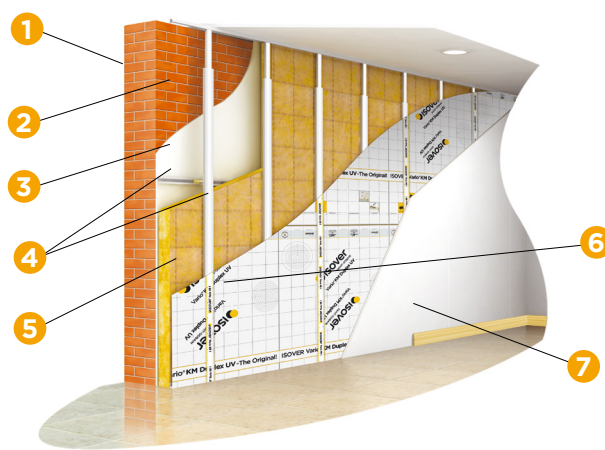
1. 15mm external render
2. 200mm concrete
3. 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat
4. Optima metal studs + fixings
5. Isover insulation
6. Vario® membrane + tapes
7. Gyproc Habito® Plasterboard



Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic roll	0.72	57.5
50mm Metac Roll	0.46	82.5
60mm Comfort 32	0.39	92.5
100mm Metac Roll	0.27	132.5
140mm Comfort 35 Lanaé	0.21	172.5
150mm Metac Roll	0.19	182.5

### Rendered Single Storey Brick Walls

1. External Render
2. 215mm brick
3. 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat
4. Optima metal studs + fixings
5. Isover insulation
6. Vario® membrane + tapes placed on studs
7. Gyproc Habito® Plasterboard



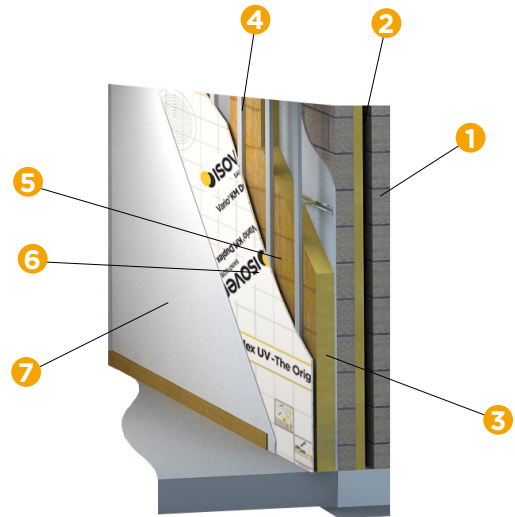
Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic roll	0.72	57.5
50mm Metac Roll	0.45	82.5
60mm Comfort 32	0.38	92.5

**For greater thicknesses of insulation, please contact our technical department**

For unrendered brick walls or multi-storey rendered brick walls, a suitable hydrophobic coating should be used.

## Partial / Full Fill + Optima

1. 15mm external render + 100mm block
2. Cavity + Isover Hi-Cav32
3. 100mm block + 11mm Gyproc Hard Coat + 2mm Gyproc Skimcoat
4. Optima metal studs + fixings
5. Isover insulation
6. Vario® membrane + tapes
7. Gyproc Habito® Plasterboard



Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic roll	0.20	57.5
50mm Metac Roll	0.17	82.5
60mm Comfort 32	0.16	92.5
100mm Metac Roll	0.14	132.5
<b>140mm Comfort 35 Lanaé</b>	<b>0.12</b>	<b>172.5</b>
150mm Metac Roll	0.11	182.5

## Stone Wall Single Storey\*

1. 18mm lime render
2. 600mm limestone wall
3. 18mm lime plaster
4. Optima metal studs + fixings
5. Isover insulation
6. Vario® membrane + tapes
7. Gyproc Habito® Plasterboard



Insulation	U-value (W/m <sup>2</sup> K)	Total Thickness Of Dry Lining System (mm)
25mm Acoustic Roll	0.59	57.5
50mm Metac Roll	0.40	82.5
60mm Comfort 32	0.35	92.5

**For greater thicknesses of insulation, please contact our technical department**

### Note:

\*Please note that for rendered multi-storey or unrendered wide single storey stone walls, the insulation should be limited to 50mm Metac Roll. For insulation greater than 100mm or on unrendered stone walls a suitable hydrophobic coating should be used.



# ACOUSTIC PERFORMANCE

Indoor acoustic comfort should be provided by the building envelope to protect against noises from outside and adjoining properties.

When applied to existing wall constructions, the Optima Dry Lining System can significantly increase the sound insulation performance of a building, providing an increased level of personal privacy in the home.

The acoustic insulation of a construction in-situ is determined by the Apparent Weighted Sound Reduction Index:  $R_w$ . This index is expressed in decibels (dB), whereby the higher the  $R_w$  value the better the sound insulation performance. and the Maximum Permitted Carbon Performance Co-Efficient (MPCPC) reduced from 0.46 to 0.35.

**The table below lists some examples of estimated  $R_w$  values for common construction types in Ireland and the expected improvement following the installation of the Optima Dry Lining System to one side.**

Base Construction	Thickness of Isover glass wool	Total Thickness Of Dry Lining System (mm)	In-situ Sound insulation Performance $R_w$ dB		
			Base Construction	Base Construction + Optima	Gain in Sound Insulation Performance, dB
215mm solid blocks with 12.5mm sand/cement render on both sides	50mm	57.5	54	63	9
	100mm			64	10
	160mm			65	11
200mm precast concrete	50mm	82.5	55	64	9
	100mm			65	10
	160mm			66	11
215mm concrete block	50mm	82.5	53	65*	12
	100mm			66*	13
	160mm			67*	14
Two leaves of 100mm dense concrete blocks with 100mm cavity	50mm	82.5	58	67*	9
	100mm			68*	10
	160mm			68*	10

\*This level of sound insulation performance is based on a construction comprising the described base construction only. Any compound elements to the overall construction, e.g. windows, doors etc., will result in a significant reduction in the overall performance.

For best results overall, consider treatment of flanking elements such as ceilings and using insulated vents.



# GET THE KNOW-HOW WITH THE SAINT-GOBAIN TECHNICAL ACADEMY

With purpose built academy facilities in Kingscourt and Dublin, along with our suite of online and digital courses, Saint-Gobain Technical Academy offers a wide range of FREE face-to-face and online training to upskill and educate construction industry professionals.

Our training portfolio includes a blend of webinars, seminars, and digital tutorials via our **E-Learning Hub**, and via our **Build Hub**, we deliver practically orientated face-to-face, often hands-on, training courses at our Dublin and Kingscourt Technical Academies.

## E-LEARNING HUB

- A Brief but Detailed Look at Airtightness
- Internally Insulating Existing External Walls
- Understanding ShaftWall
- Gyproc Partition Performances
- Not Just Skimming Over the Surface
- Papering Over the Cracks
- Controlling Reverberation in Buildings with Plasterboards
- What Does it Take to Achieve Peace and Quiet?
- Installing Compliant Fire-Resistant Gyproc Partitions
- Dry-lining Requirements for Compliance in Dwellings
- Just Encase You're Not Sure
- Apartments Made Simple

## BUILD HUB

- How to Construct: Isover Optima
- A practical approach to Airtightness
- nZEB in Practice
- How to Construct: GypWall partitions
- How to Construct: Gyproc ShaftWall partitions
- How to Construct: CasoLine MF Ceilings
- How to Construct: Gyproc Encasements
- A practical dry-lining guide to Part B's Supplementary Guidance
- Acoustics in Buildings
- Fire Performance in Buildings
- N.I. Building Regulations & Compliance
- R.O.I. Building Regulations & Compliance

# STEP INTO THE HUB OF KNOWLEDGE AND SKILL ENHANCEMENT

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At the Saint-Gobain Technical Academy we have a wide range of regular training courses to upskill and educate all within the construction industry.





# OPTIMA DRY LINING SYSTEM COMPONENTS - METAL FRAME & INSULATION

## Metal frame

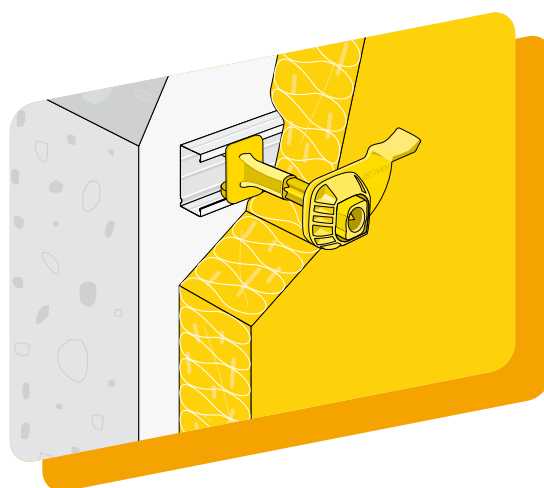
### Optima Metal frame - light, robust, adaptable

The standard elements that make up the Optima frame ensure the system is both mechanically stable and economical. The structure can be adapted to fit many building types and manage any discrepancies in the existing wall surfaces.

For the facing support, the Optima C-channel (a 2.4m metal stud) together with Optima 300 and 500 extension pieces can be used to extend or adjust to the required height.

### Summary of benefits

- ✔ Avoids thermal bridges, as the insulation layer is continuous
- ✔ Precise, easy and practical installation and adjustment
- ✔ Plastic clip locking system ensures studs are firmly secured in position



Plastic Clip Locking System

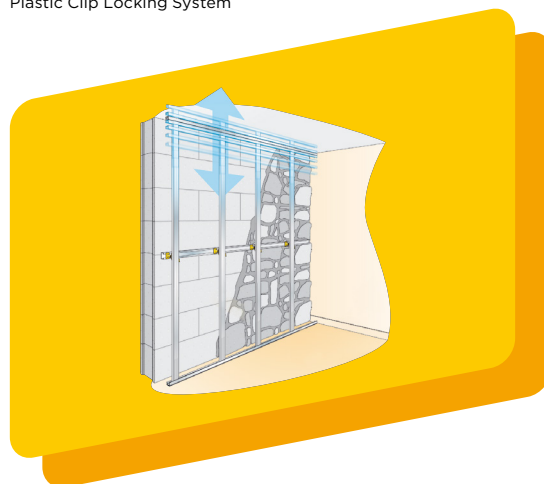
## Insulation

### Isover insulation for Optima

Choose between various Isover insulation such as Metac Roll  $\lambda 34$  ( $\lambda = 0.034$  W/mK), Comfort 35 Lanaé ( $\lambda = 0.035$  W/mK) or Comfort Panel 32 ( $\lambda = 0.032$  W/mK) metal stud together with Optima 300 and 500 extension pieces can be used to extend or adjust to the required height.

### Summary of benefits

- ✔ Mineral wool insulation contributes to thermal and energy performance
- ✔ Soft tissue facing on the Comfort range for easy handling, with gridlines to aid installation
- ✔ Compressed products save space and time, both for transport and distribution on site
- ✔ A1 Reaction to Fire classification in accordance with EN 13501-1



Height adjustable metal studs



# OPTIMA DRY LINING SYSTEM COMPONENTS - VARIO®

## Airtightness & Moisture control

Vario® is Isover's solution to airtightness and protection against moisture.

The Isover Vario® System is an intelligent airtightness and moisture control system. The Vario® membranes adapts and reacts naturally, changing its permeability according to humidity conditions, allowing closed building systems to increase their drying potential.

This means Vario® is multifunctional, acting as a barrier in winter and a vapour permeable membrane in summer.

Vario® is compatible with the Optima Dry Lining System, meaning you can contribute to airtightness performance, whether on a new or renovation project.



## Isover Vario® KM Duplex UV

Variable  $s_d$  membrane used as a vapour retarder and airtight barrier in ventilated and non ventilated roofs and walls, in conjunction with suitable adhesive tape, sealing tape, sealant and joint sealing strip.



**CONTRIBUTES TO AIRTIGHTNESS PERFORMANCE**



**VAPOUR PERMEABLE**



**CONTRIBUTES TO ENERGY SAVINGS**



### 1 Vapour Tight (winter)

In winter, if uncontrolled, water vapour typically moves from the warmer internal living spaces into the cooler construction materials, the Vario® KM Duplex UV membrane slows vapour passage, thanks to a high  $s_d$  value in winter.

### 2 Drying Function (summer)

In summer, water vapour movement typically occurs in both directions. The Vario® KM Duplex UV membrane facilitates this natural circulation of vapour to help reduce moisture in the construction materials thanks to lower  $s_d$  value in summer.



# OPTIMA DRY LINING SYSTEM COMPONENTS - FACINGS

## Facings

Gyproc plasterboards are the modern way to provide linings for today's buildings. Available in an unrivalled range of types and sizes.

Choose from:



**Gyproc Habito®** - Is a plasterboard that provides enhanced acoustic performance, impact resistance and direct fixing capabilities. Optima has been tested for suitability with Habito® and offered superior fixing strength and low movement.



**Gyproc SoundBloc** - Has a higher density core than standard plasterboard and is designed for use in Gyproc wall and partition systems where greater levels of sound insulation are required.



**Gyproc Moisture Resistant** - Contains a water repellent additive in the core and paper liners and is best used as a base for ceramic tiling and in areas of intermittent high humidity.



**Gyproc WallBoard** - Is a general purpose plasterboard suitable for most applications.

## Summary of benefits

- ✓ Quick assembly
- ✓ Smooth and level surface
- ✓ Robustness
- ✓ Wide choice of boards to suit specific performance requirements



Compatible with Gyproc Habito® Plasterboard for added fixing capability, acoustic performance and impact resistance








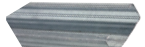

# ISOVER OPTIMA DRY LINING SYSTEM




For use in walls internally insulated



Optima Dry Lining system is an NSAI Agrément certified system that is often suitable for internally insulated walls and contributes to thermal and airtightness performance. The system is adaptable to a variety of wall types and mitigates thermal bridges.

 CONTRIBUTES TO ENERGY SAVINGS	 MITIGATES THERMAL BRIDGES	 CONTRIBUTES TO AIRTIGHTNESS PERFORMANCE	 EASY TO TRANSPORT
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Product	Order Code	Bundles Per Pallet	Units Per Bundle	
Optima Floor and ceiling U-channel	5200425735	12	20	
Optima C-channel	5200425740	48	10	
Optima 500mm extension	5200425741	48	10	

Product	Order Code	Pallet	Units Per Pack	
Optima Connector	5200537462	252 packs	23	
Optima Support 75mm	5200544332	126 packs	50	
Optima Support 100mm	5200544335	126 packs		
Optima Support 120mm	5200544337	126 packs		
Optima Support 140mm Vario*	5200544354	126 packs		
Optima Direct Support (70mm - 160mm)	5200544358	126 packs	40	



**FIRST NSAI AGRÉMENT CERTIFIED  
INTERNAL INSULATION SYSTEM  
IN IRELAND**



# CASE STUDY

## The Glebe, Johnstown Co Kilkenny, Ireland

### Project Overview

Parochial House Restoration in Kilkenny

### Overview

This parochial house required a building fabric that consisted of a vapour permeable wall lining system both internally and externally. The house dates back to 1828, and was built as a one off residential building. Prior to the renovation, the existing walls were extremely cold and needed to be upgraded thermally. Because the building was a listed building by the Local Authorities, it was exempt from BER certification. The walls could not be sealed due to the conservation policies. Therefore, a vapour permeable internal dry-lining was installed internally using the Optima System.

This solution provided three key performances:

- ✓ Thermal upgrade to external walls
- ✓ Vapour permeability
- ✓ Contributing to sound insulation

### Challenges

The house is a 3-storey building and because the walls were 3.5 metres high, this was challenging for contractor Sean Moore and his team. This was resolved by installing the Optima Dry Lining System C-channels at 400mm centres, with an accompanying horizontal C-channel at every 1 metre height. The Optima channels were adapted by the project team to accommodate those areas of the house that had curved details and needed to be dry lined.

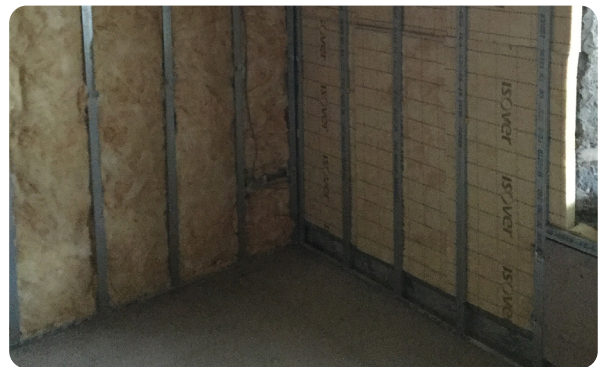
The shutter windows in the building had deep reveals, which also needed to be lined. This was tricky but was solved by using a thinner acoustic insulation. Because the building structure needed to be maintained and restored close to its original state, the team had to ensure that they were limiting impact on the structure. Sean and his team researched a number of products and systems prior to undertaking the restoration and determined that Optima provided for the least impact and most adaptable solution, easily accommodating services. Value for money was also a key aspect of this research and Sean found that the Optima Dry Lining System was the most suited option for their budget; as it helped speed up installation and reduce the installation cost for the dry lining of the project.

### Results

Optima Dry Lining System gave the team the flexibility the restoration required, and allowed for easy removal and refit, which can sometimes be needed on renovation projects of historical buildings – unlike a sprayfoam system, where application cannot be redone.

Sean said himself that, “The Optima Dry Lining System is very user friendly to install. Along with the help of the Isover team, who came on site to carry out site demonstrations, we put the system together with ease. The system is extremely cost effective when compared to other vapour permeable systems. All in all, the Optima Dry Lining System ticks all of the boxes for dry lining old stone walls.”







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