IndiNature®

Bio-based construction systems

IndiTherm
Install Guide

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INUKSD003_InstallGuideIT_01/092022. Technical Details subject to change.

1. Timber Frame New Build

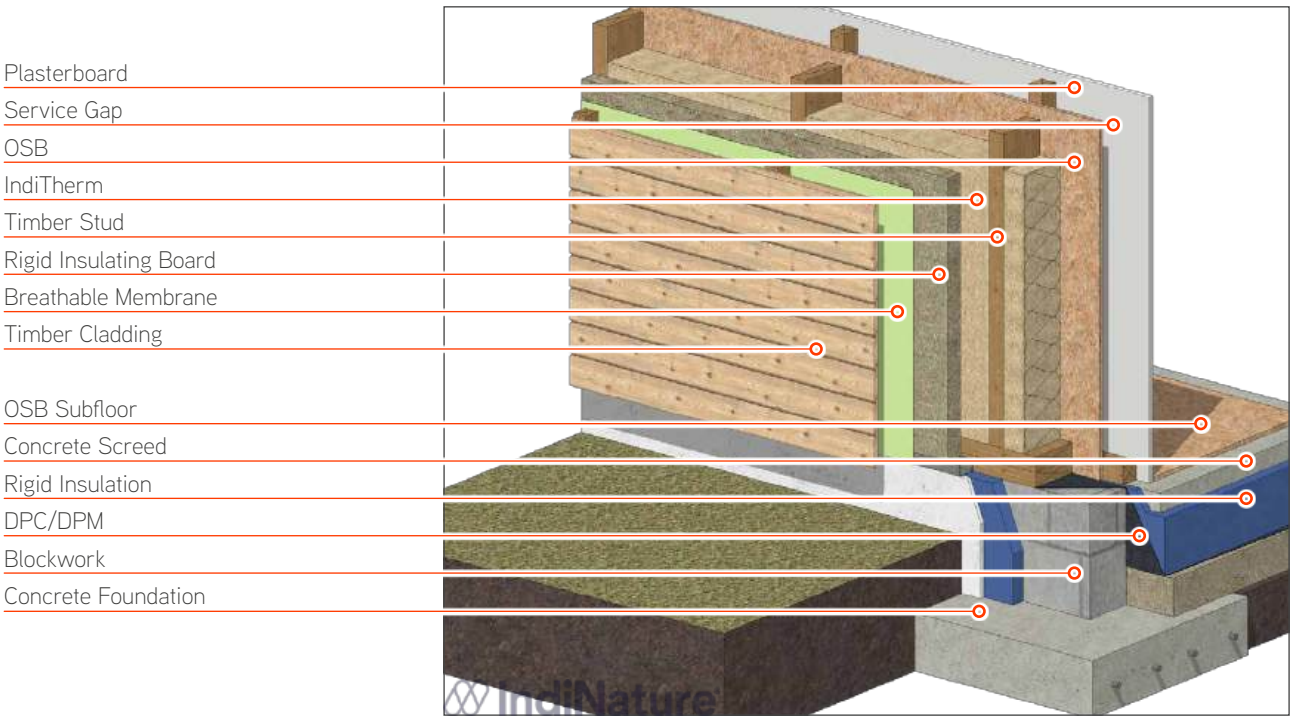
1 Timber Frame New Build

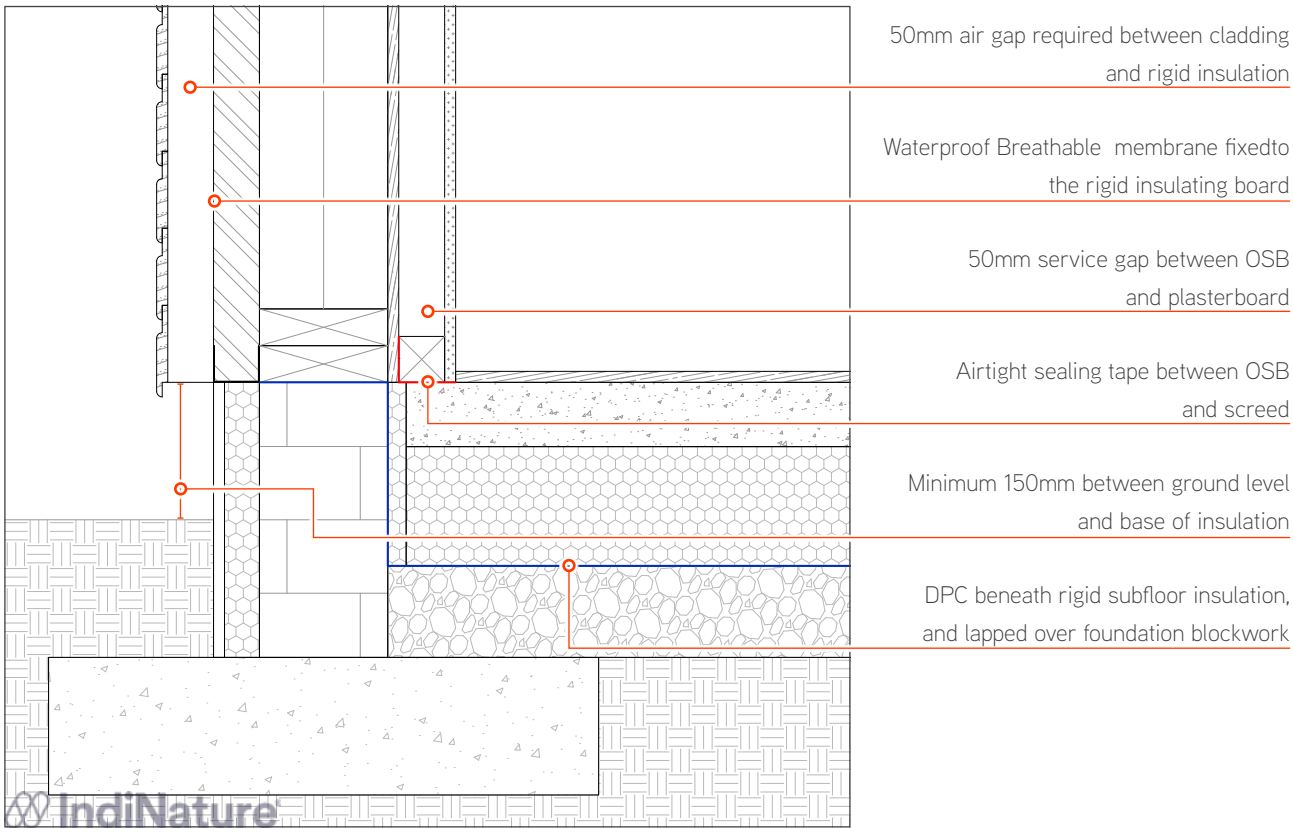
This chapter provides the detailing guidelines to ensure the correct installation and optimal performance of IndiTherm insulation in timber frame buildings with timber cladding.

Contents

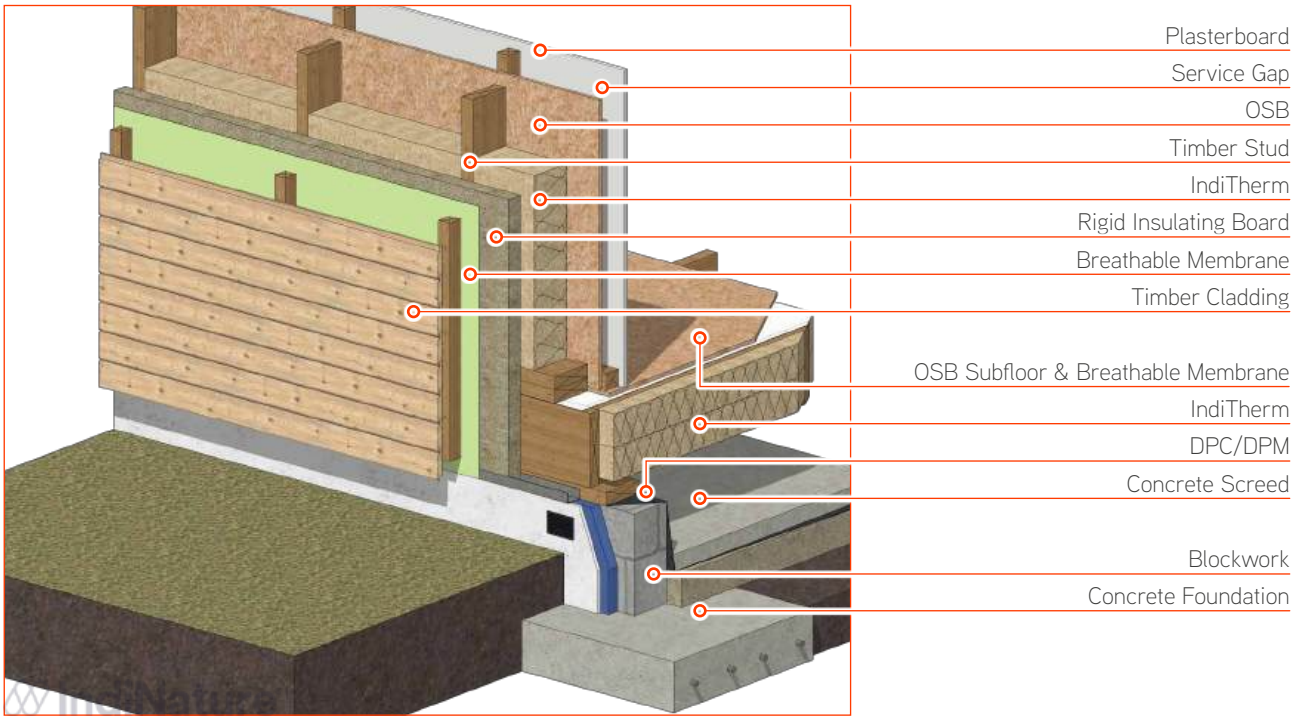
1.1 Foundation - Slab Floor

Conventional timber frame house foundation, using concrete strips and a solid slab floor





Conventional timber frame house foundation, using concrete strip, and a suspended floor with a crawl space



50mm air gap required between cladding and rigid insulation

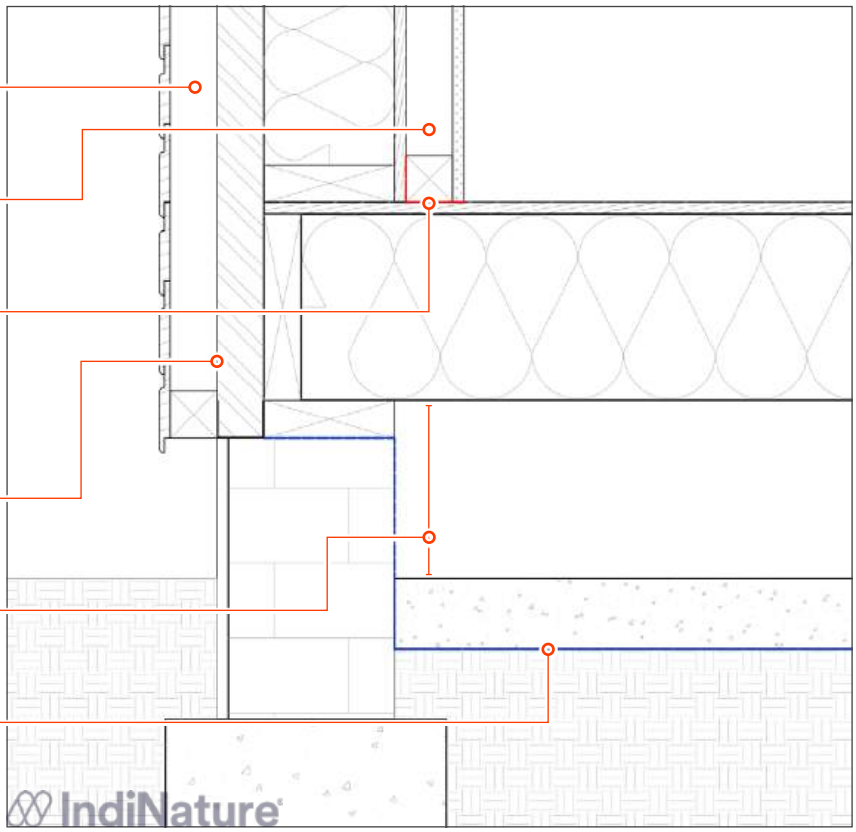
50mm service gap between OSB and plasterboard

Airtight sealing tape between OSB and screed

Waterproof membrane affixed to the outside of the insulation should be breathable to allow vapour passage through the wall

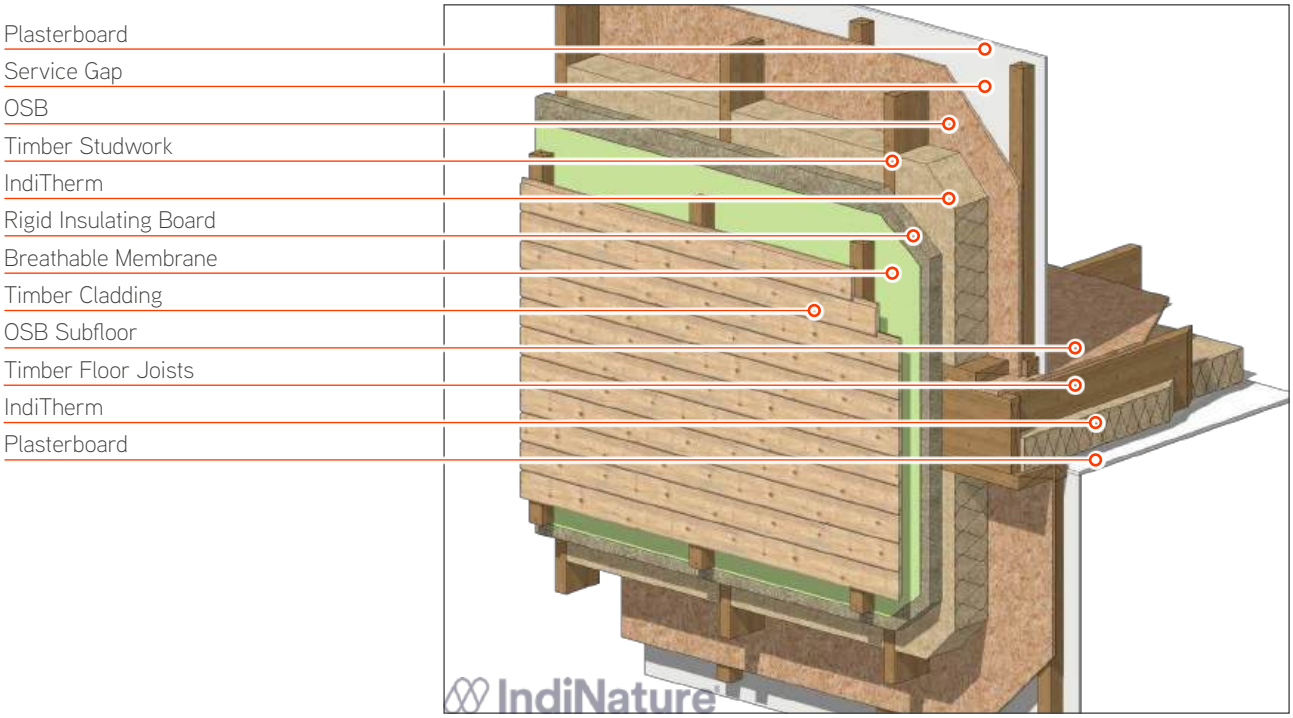
Minimum 150mm between ground level and base of insulation

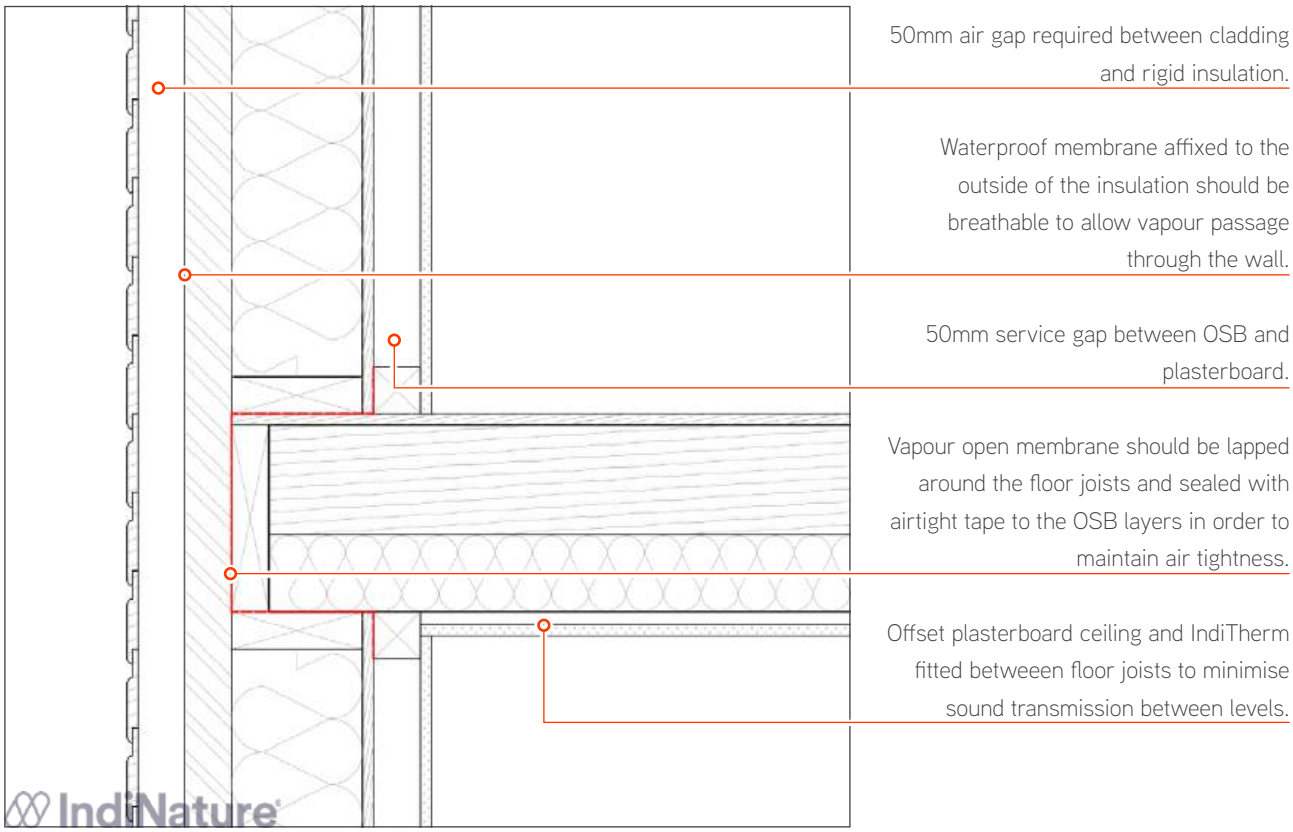
DPC beneath the solum screed and lapped over the foundation blockwork

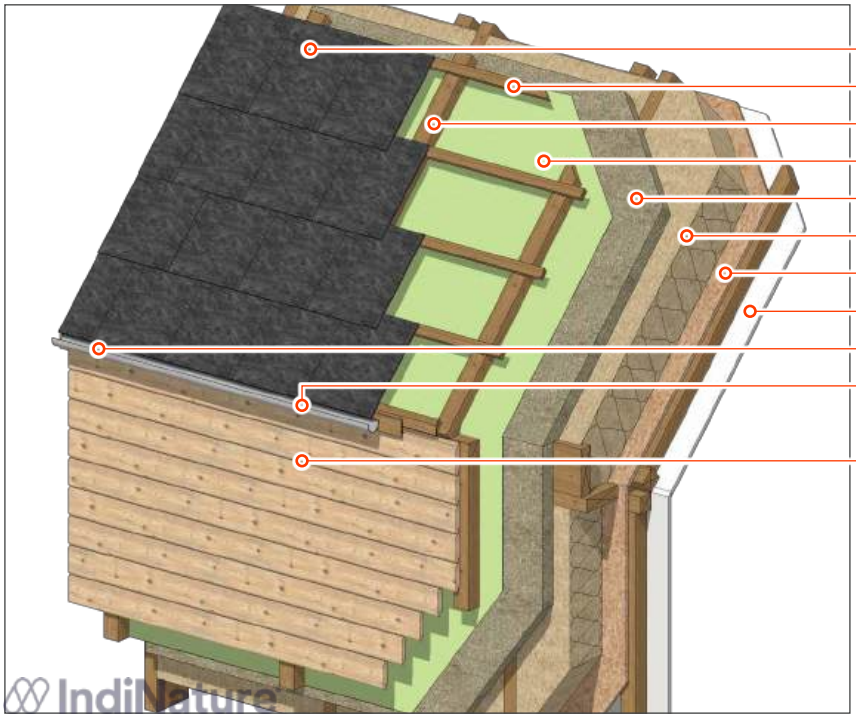


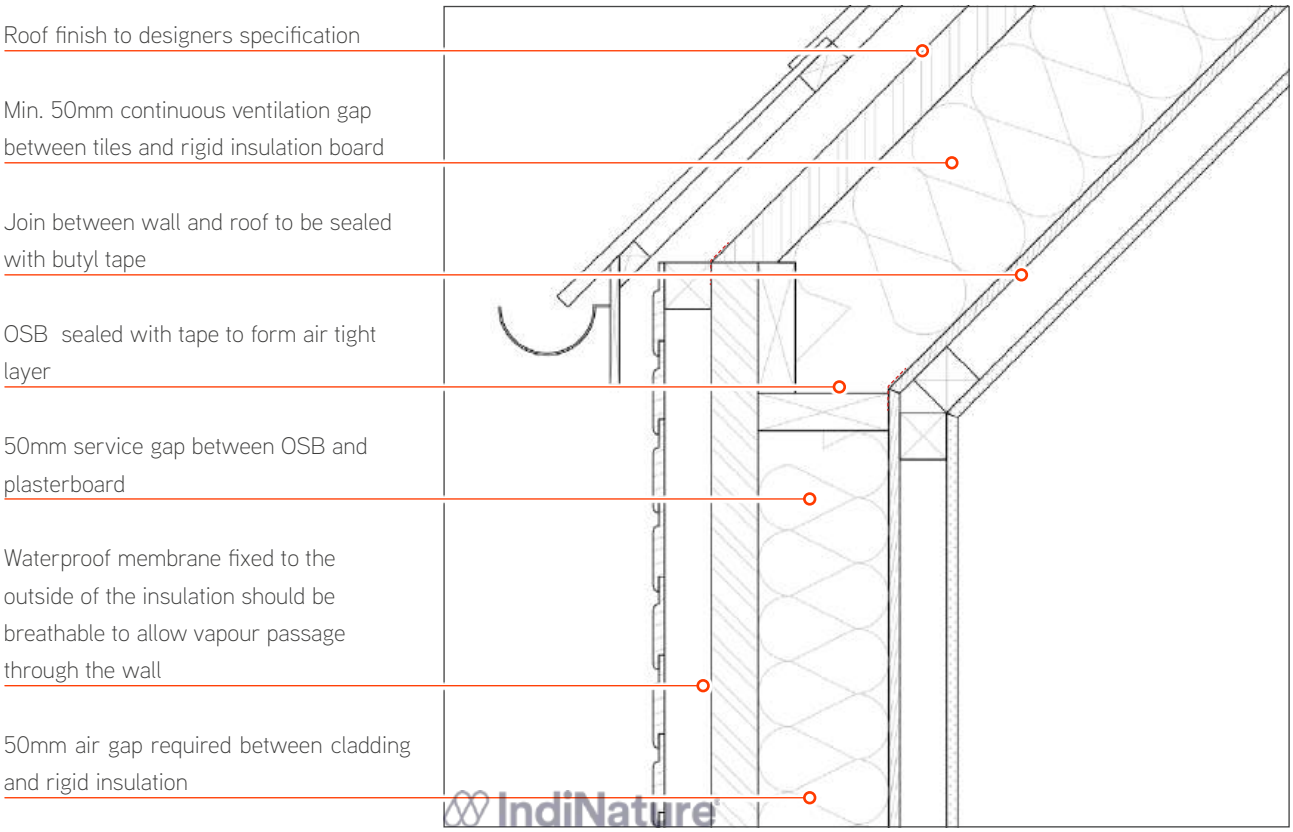
1.3 Insualting and sealing around an intermediate floor

Intermediate Floor



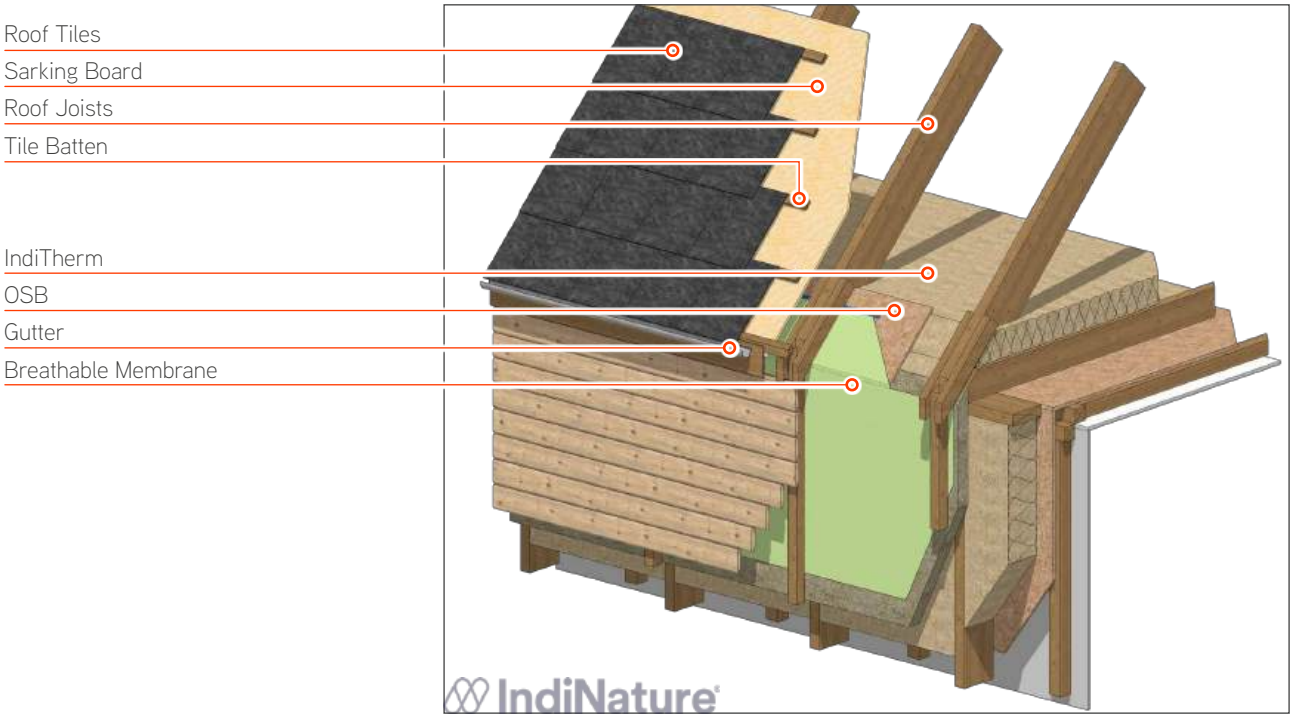


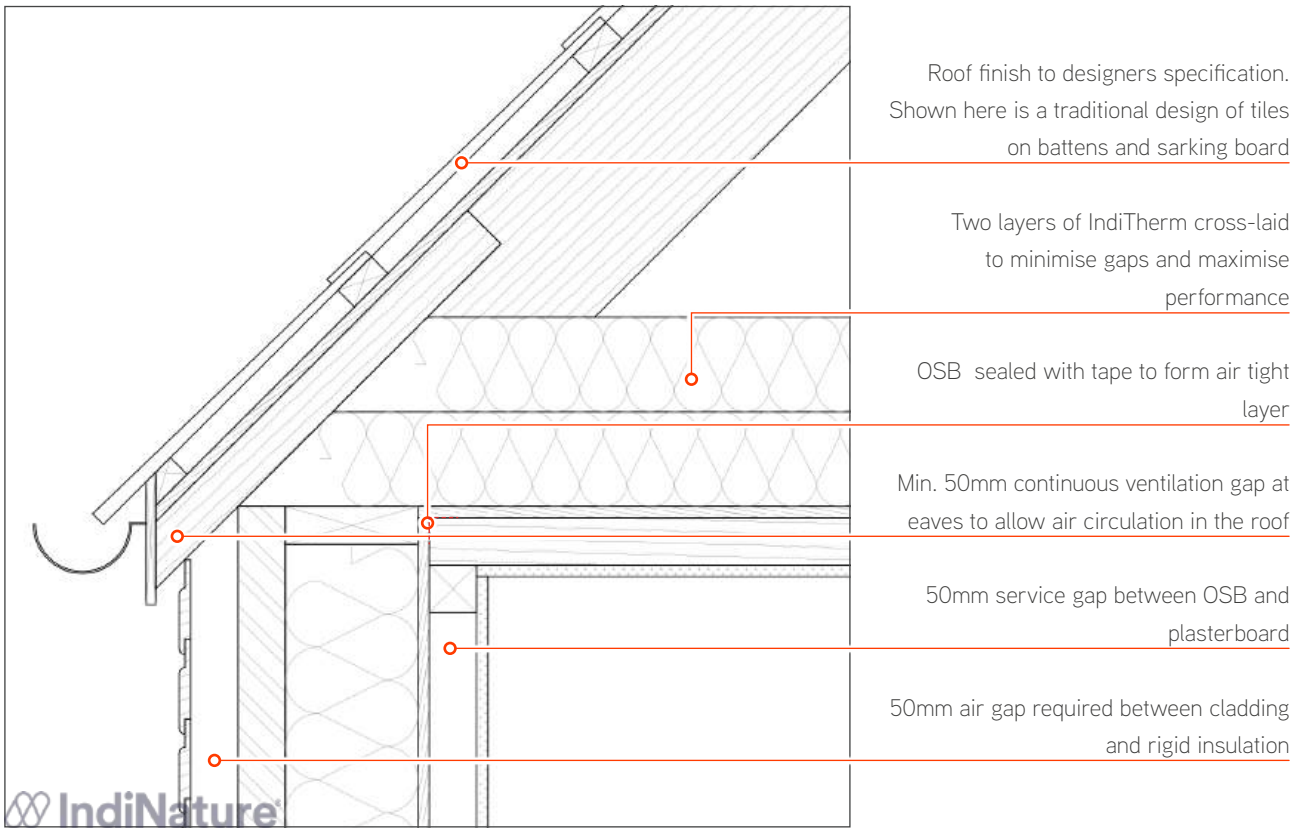

Roof Tiles
Counter-Batten
Batten
Breathable Membrane
Rigid Insulating Board
IndiTherm
OSB
Plasterboard
Gutter
Weatherboard
Timber Cladding

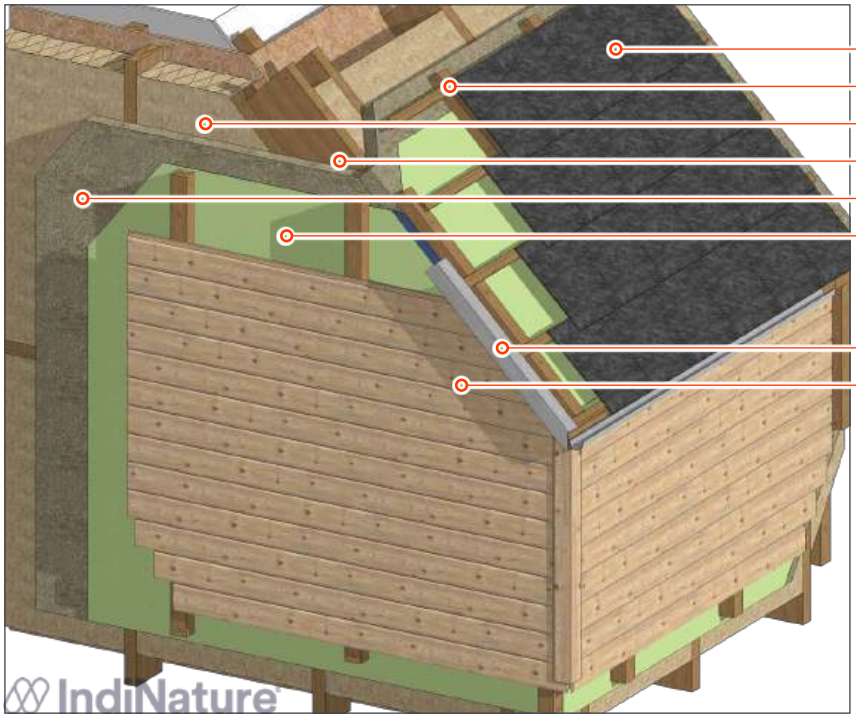

Roof finish to designers specification
Min. 50mm continuous ventilation gap between tiles and rigid insulation board
Join between wall and roof to be sealed with butyl tape
OSB sealed with tape to form air tight layer
50mm service gap between OSB and plasterboard
Waterproof membrane fixed to the outside of the insulation should be breathable to allow vapour passage through the wall
50mm air gap required between cladding and rigid insulation

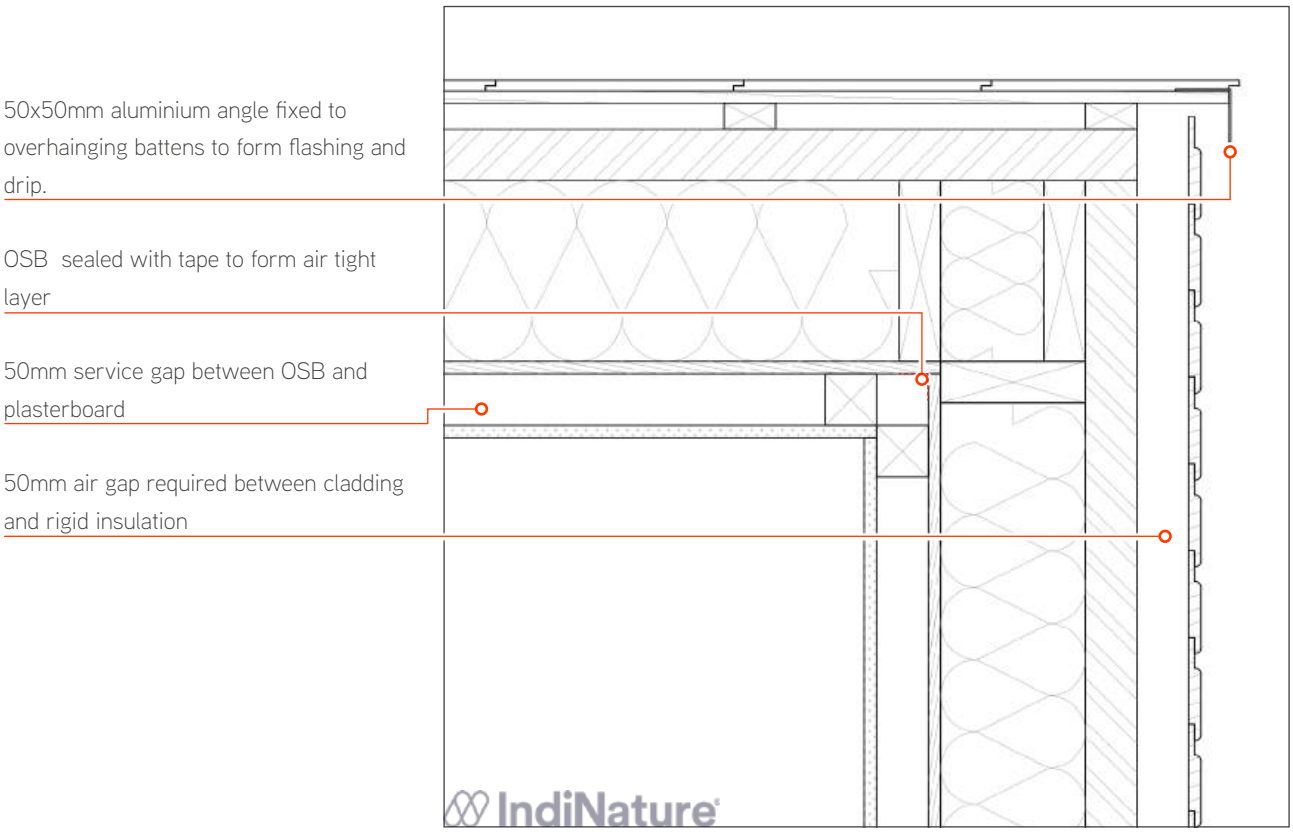
1.5 Insulating the roof to create a cold loft space

Loft - Cold Roof






Roof Tiles
Battens and Counter-battens
IndiTherm
Roof Joists
Rigid Insulating Board
Breathable Membrane
Aluminium Flashing
Timber Cladding
IndiNature


50x50mm aluminium angle fixed to overhainging battens to form flashing and drip.
OSB sealed with tape to form air tight layer
50mm service gap between OSB and plasterboard
50mm air gap required between cladding and rigid insulation
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1.7 Window Details

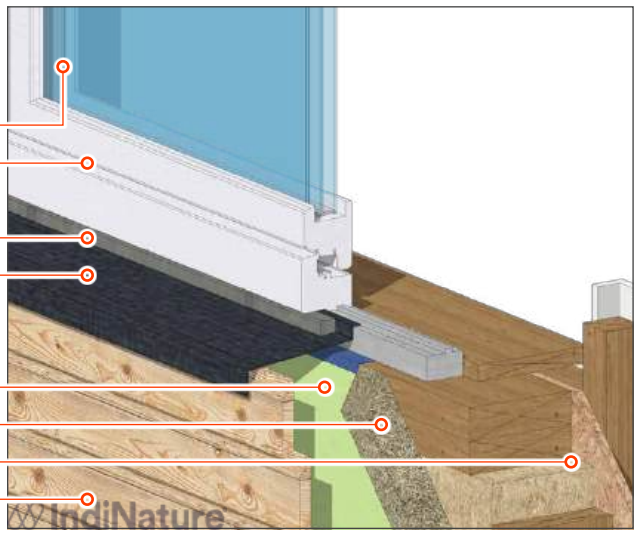
Insulating and sealing around window openings

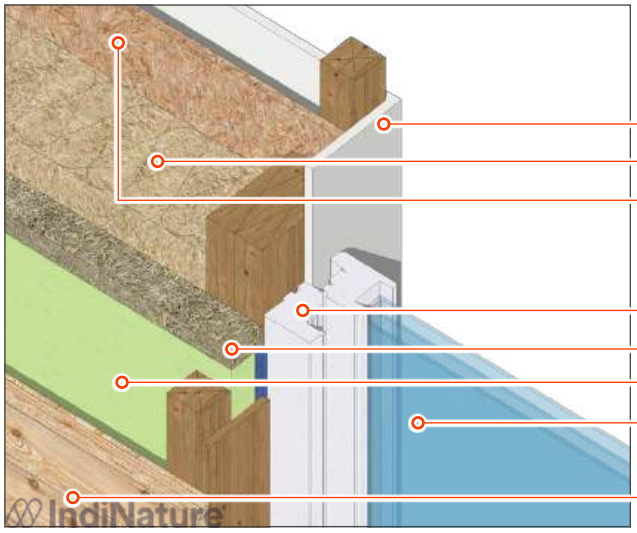
Window Sill

Triple Glazing
Window Frame

Silicone Sealed Fixing
Aluminium Sill

Taped Breathable Membrane
Rigid Insulating Board
IndiTherm
Timber Cladding





Window Jamb

Plasterboard
IndiTherm
OSB

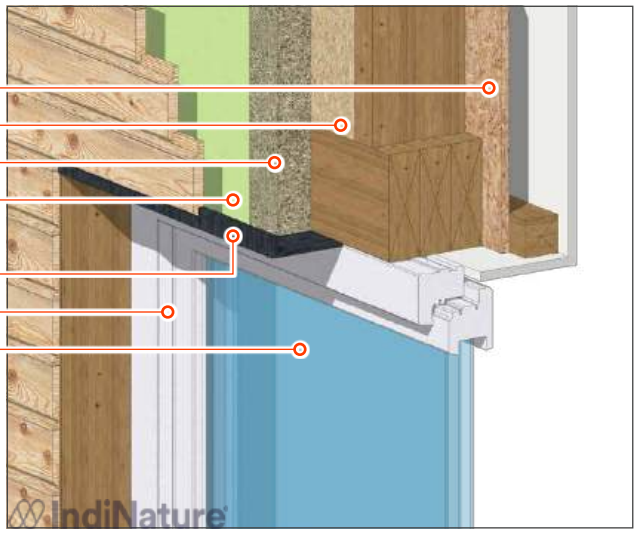
Window Frame
Rigid Insulating Board
Breathable Membrane
Triple Glazing

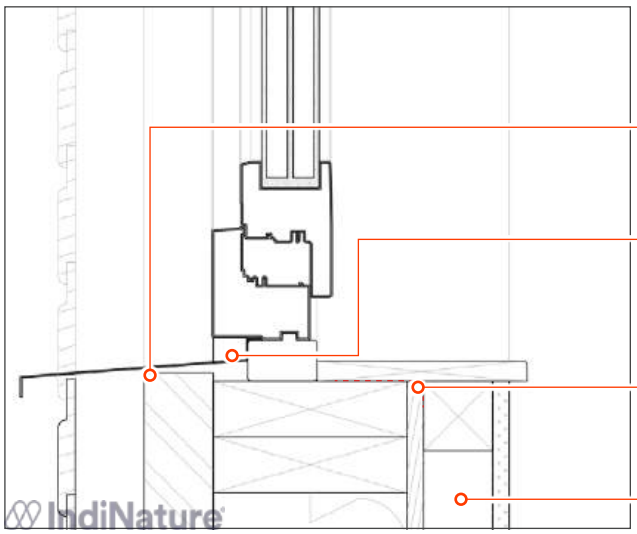
Timber Cladding

Window Head

OSB
IndiTherm
Rigid Insulating Board
Breathable Membrane

Aluminium window head
Window Frame
Triple Glazing





Window Sill

Double sided tape to externallyseal insulation to window sill

Silicone sealed sill fixings

Airtight membrane taped to OSB to maintain airtight layer

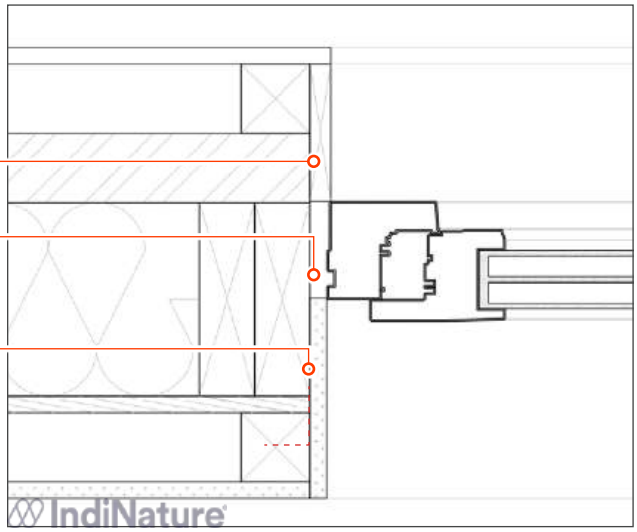
50mm service gap between OSB and plasterboard

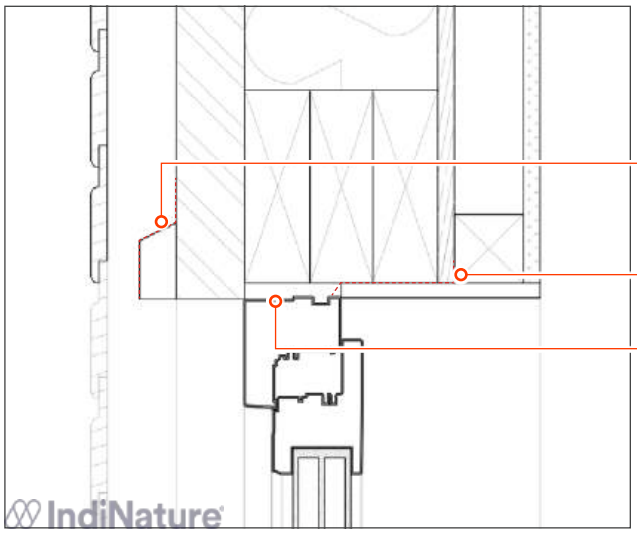
Window Jamb

Timber board matching cladding to protect the wall insulation

Expanding foam to fully fill shim space

Airtight membrane taped to OSB to maintain airtight layer





Window Head

Breathable DPM membrane drip fixed to 25mm x 50mm batten

Airtight membrane taped to OSB to maintain airtight layer

Expanding foam to fully fill shim space

2. Traditional Building Retrofit

2 Traditional Building Retrofit

This chapter provides detailing and advice for using IndiTherm to retrofit traditional solid masonry buildings

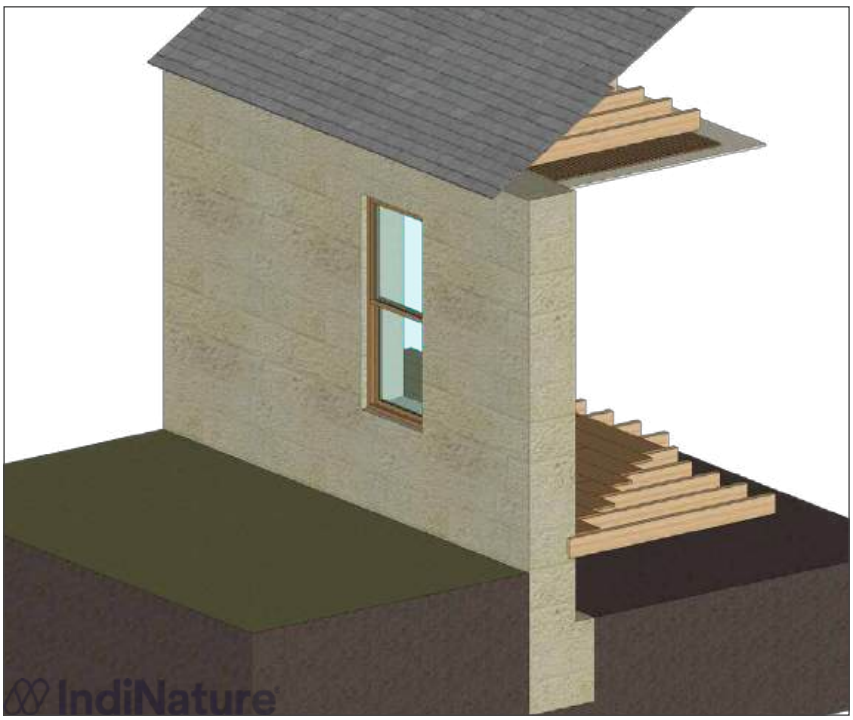
Contents

Traditional Building Characteristics

2.1 Traditional Building Characteristics

IndiTherm will be best suited for floor and loft insulation where there is already a structure in place for the insulation to be installed between. For Internal wall insulation (IWI) IndiTherm will require a stud structure to be built in order to be fitted. IndiTherm is not suitable for insulating window reveals, for this location a rigid insulating board would be ideal.

Customers are encouraged to contact our technical team should they have any queries, or require context specific guidance. Additionally, we advise the use of WUFI (or other building performance modelling) to ensure minimising the risk of interstitial condensation.



Key Characteristics:

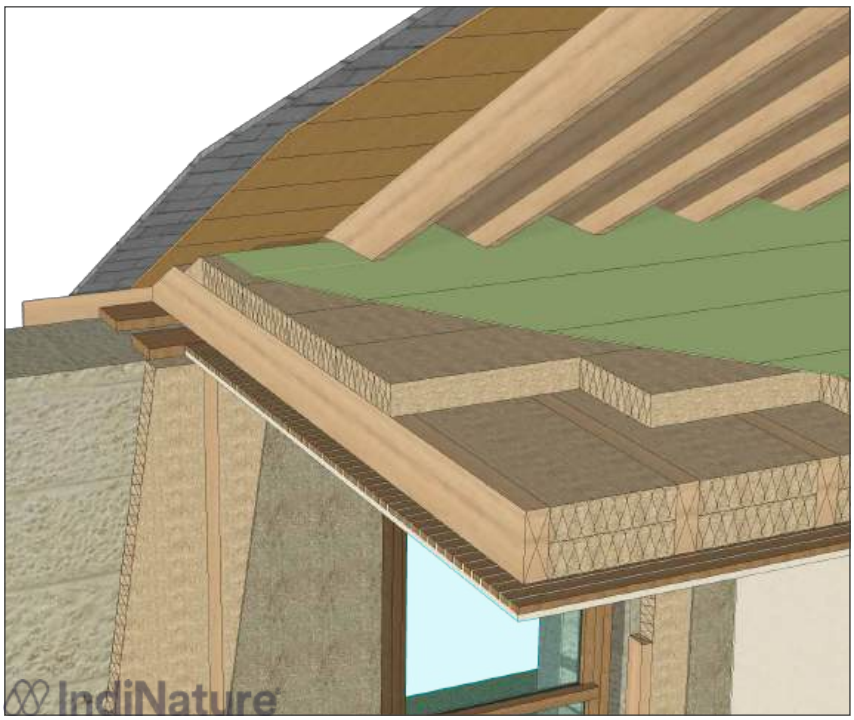
- Solid masonry walls, typically between 500mm and 600mm thick, with a sandstone exterior face. These walls are typically vapour open, although interior finishes may reduce the permeability.

- Timber stud interior walls with lath and plaster. Ceiling is also lath and plastered

- Ceiling joists on the top floor sit on top of the masonry wall, and the attic space is ventilated ceiling joists in intermediate floors are seated in the masonry wall.

- Roof joists meet ceiling joists, and the roof is made up of sarking board below (typically) slate tiles.

- Ground floor is suspended on timber joists with a ventilated crawl/solum space below.



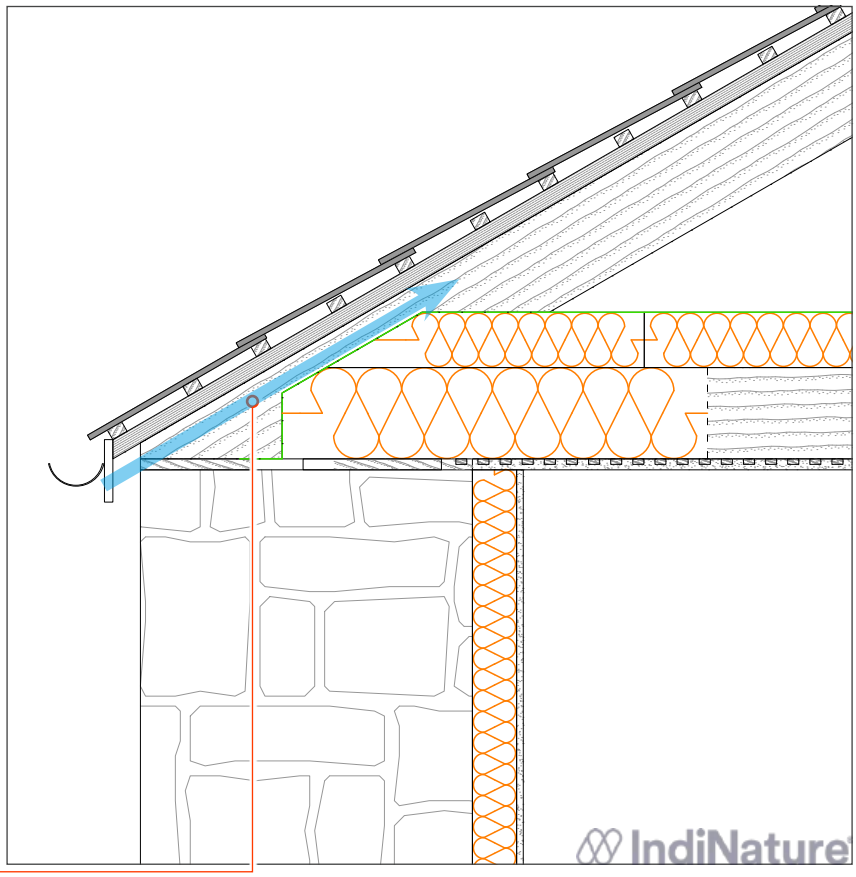
Cold roof loft insulation is one of the most effective ways to reduce heat loss through the building fabric. Batting should be at least 300mm deep to achieve maximum performance. Batting should be layered perpendicularly to perform most effectively. A vapour permeable membrane can also be laid on top to prevent air circulation through the batting which can draw heat through the insulation and reduce it's efficacy.

- Insulation should be friction fit between ceiling joists. Care and attention to detail are important here to eliminate gaps between batts and joists as much as possible.

- The layer of insulation on top of the joists should be perpendicular to the joists.

- An air tight breathable membrane can be laid on top of the insulation as this will reduce 'wind-washing' which draws heat from the outer layer of the insulation. The membrane joints should be taped and the edges should be taped to the wall to ensure air-tightness

- Insulation should be extended as far over the wall head as possible, but a 50mm gap should be left betweeen the top of the insulation and the bottom of the sarking to allow ventilation air flow.



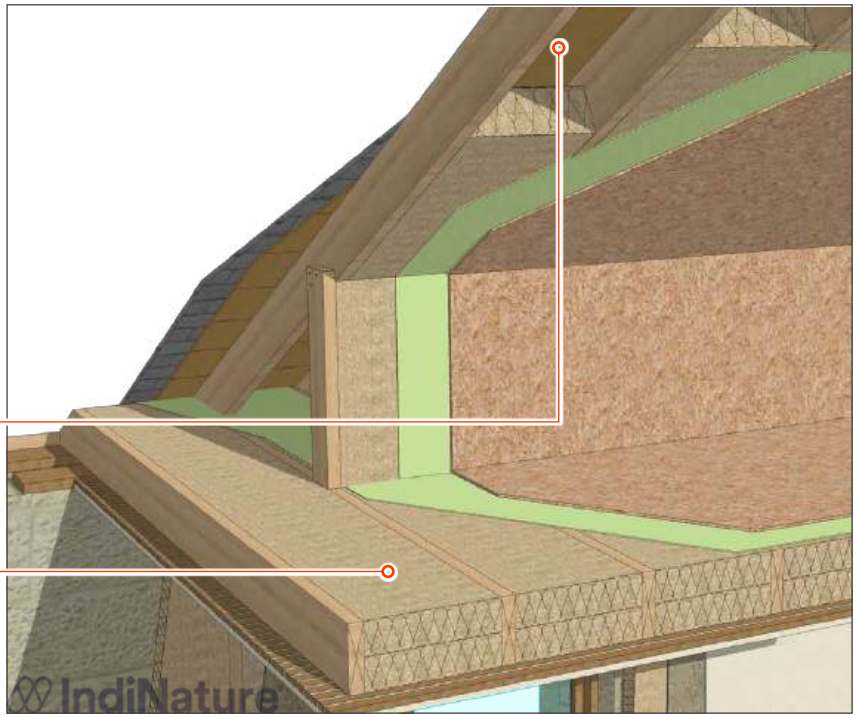
Loft Insulation - Warm Loft

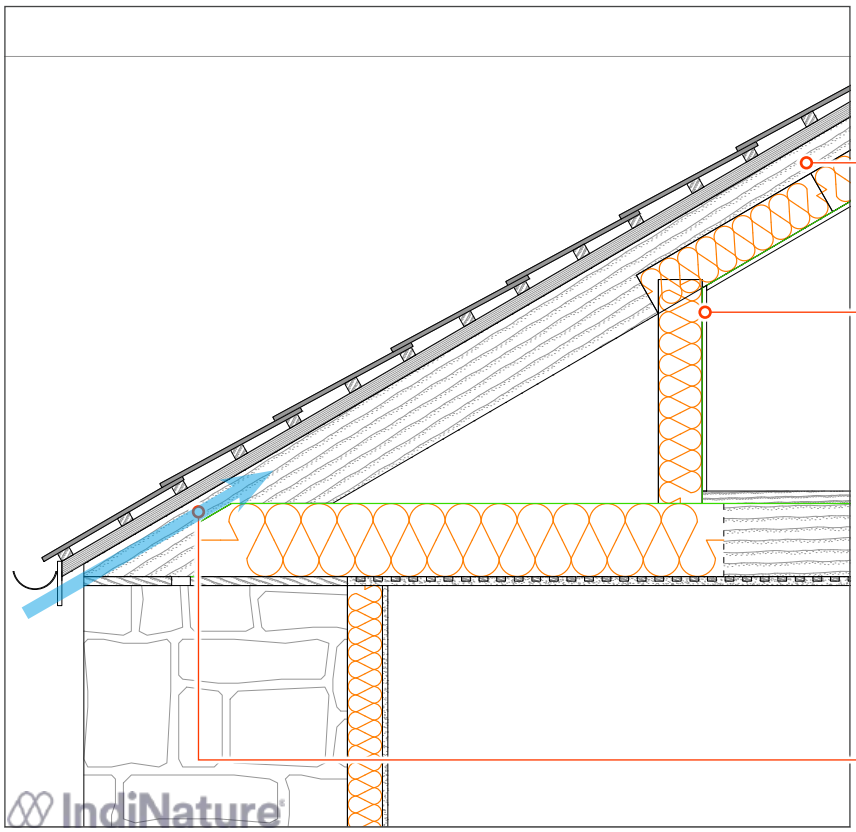
2.3 Insulating to create a warm attic/loft space

When creating a warm loft space, insulation should be placed both in between the ceiling/floor joists and the roof joists.

There should be a 50mm gap betwen the insulation and the sarking board/roofing felt so that there is plenty of airflow to allow any moisture to evaporate. Insulation butted tight to the sarking/felt can lead to 'sweating'/moisture build up.

The full depth of the ceiling/floor joists should be filled with insulation for maximum performance.



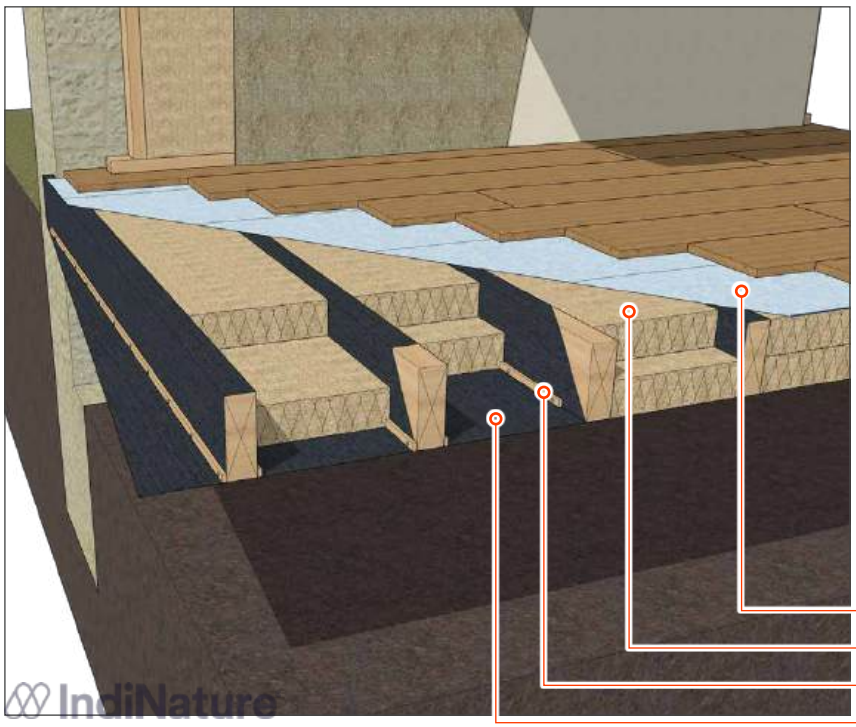


Ensure there is a 50mm ventilation gap between the sarking board and IndiTherm between the roof joists.

IndiTherm should be fit **snugly** between the roof joists, floor joists and any stud-work.

Minimum 50mm gap atthe perimeter so as not to block the ventilation under the sarking

Methods for fitting insulation in between the floor joists of a suspended floor



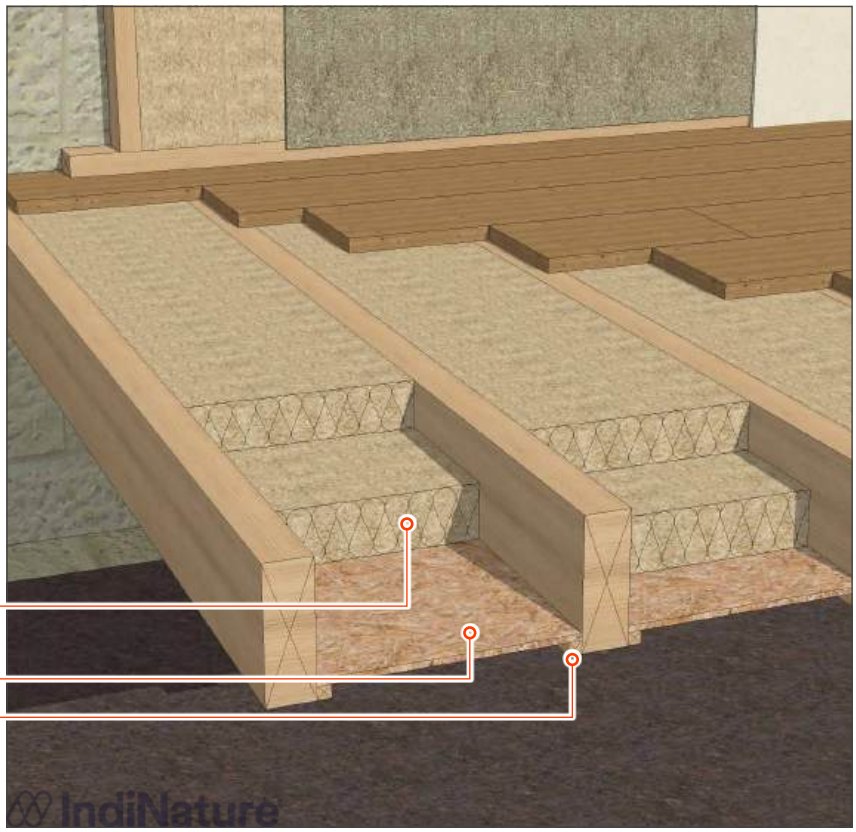
Retrofitting From Above

Floor retrofits can be approached from two ways, from above or below. If retrofitting from above, a vapour-open membrane can be lapped over the joists or OSB support panels can be fitted. Small battens should be tacked in the corner of the membrane to tension it evenly. A breathable air membrane can be laid on top of the insulation and floor joists in order to stop downward draughts forcing heat through the floor, insulation and potentially into the joist ends, where moisture can collect.

Air Membrane
IndiTherm
Tension Batten
Support Membrane

Retrofitting from Below

If retrofitting from beneath the floor, boards such as OSB should be used to support the insulation. Memebranes, netting or stainless steel mesh, can also be used, however if not installed with adequate tension the insulation can sag, which could lead to a reduction in performance. Creating a snug fit between the batting and floor joists will minimise thermal bypass and the load on the supporting membrane/board.



IndiTherm
Rigid board such as OSB fixed with battens to support the Insulation
Fixing Battens

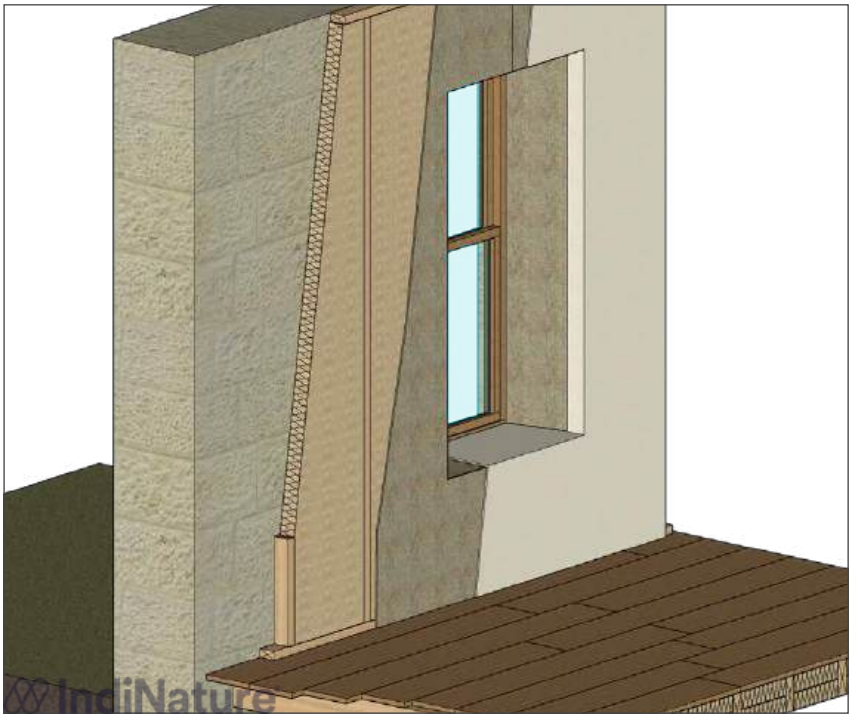
2.5 Insulating on the inside face of external, solid masonry walls

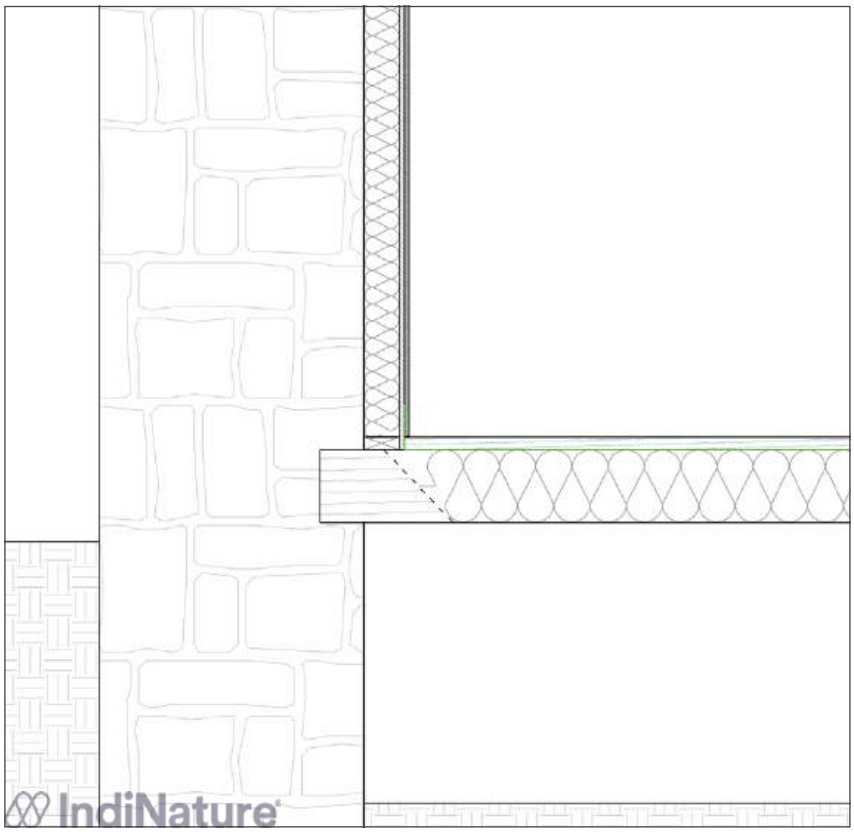
Wall Insulation

Current best practice guidelines advise that natural insulation be installed directly on the wall without an air gap.

Stripping back the original finish/ plaster may be advisable if the aim is to maximise the breathability of the wall. If a vapour control membrane is to be used on the inner face of the insulation then stripping the original finish is not necessary. Note that using a VCL will eliminate the benefits of brathable walls.

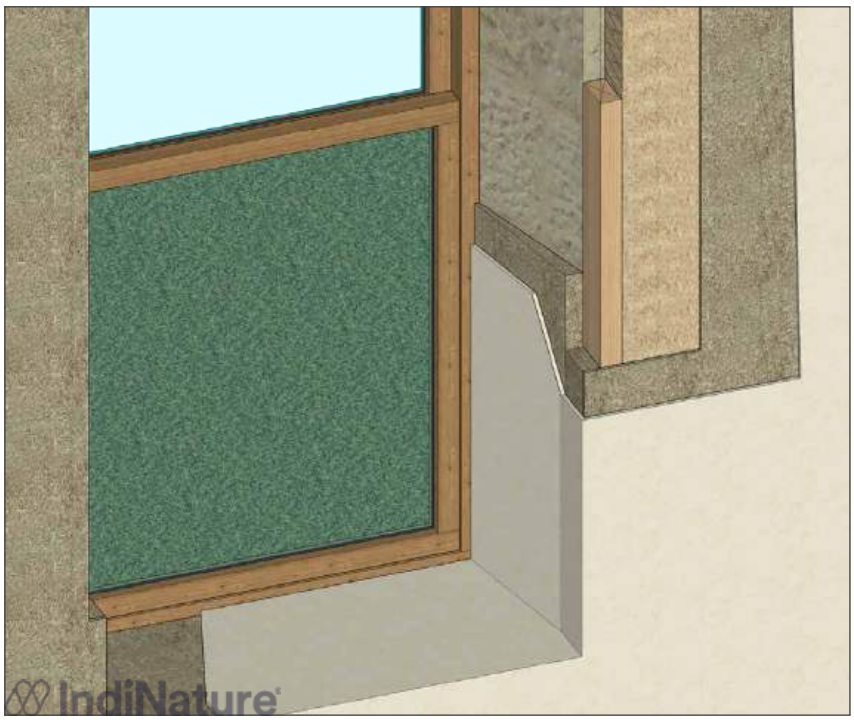
Window reveals are an expecially tricky point to insulate as there is very limited space. Stripping back the original finish will provide extra space in which a rigid insulating board may be fitted.





IndiTherm should be installed in between studwork which can be finished in a number of ways.

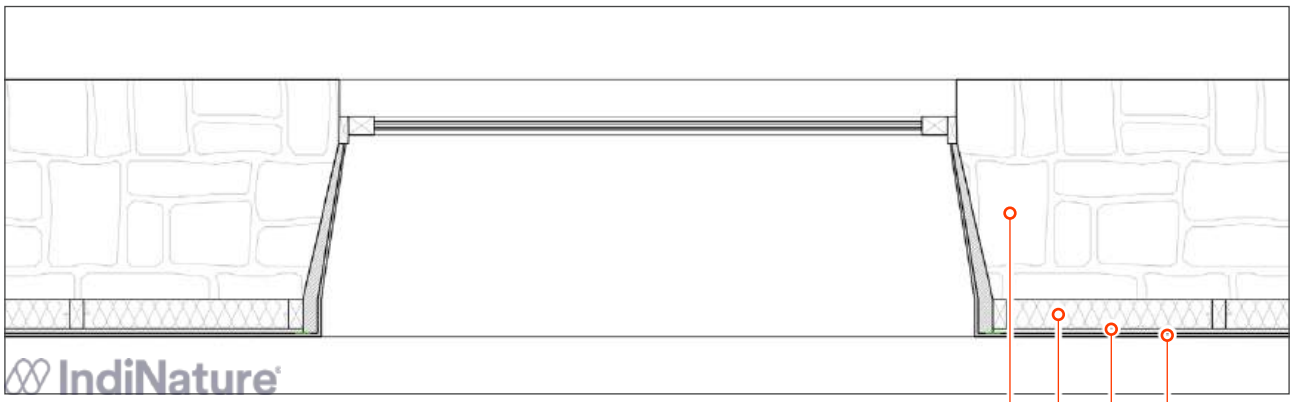
The studwork can be finished with plasterboard and a plaster skim. This will have limited breathability. Alternatively, an additional layer of natural fibre insulating **board** can be fixed to the studwork, and then a lime plaster finish can be applied. This second option has the double benefit of being both breathable, and more insulative.



Window reveals are an especially tricky point to insulate as there is very limited space. Stripping back the original finish will provide extra space in which a rigid insulating board may be fitted. Tapered rigid insulation boards are provided by other manufacturers which are ideal for this situation.

Vapour open adhesives can be used to fix the reveal insulation in place.

The window frame should be fully taped and sealed to the masonry prior to installing the new insulation.



Original plaster should be removed and insulation installed directly on stone wall

IndiTherm, thickness to client's specification

Rigid natural fibre insulating board, that can be plastered on

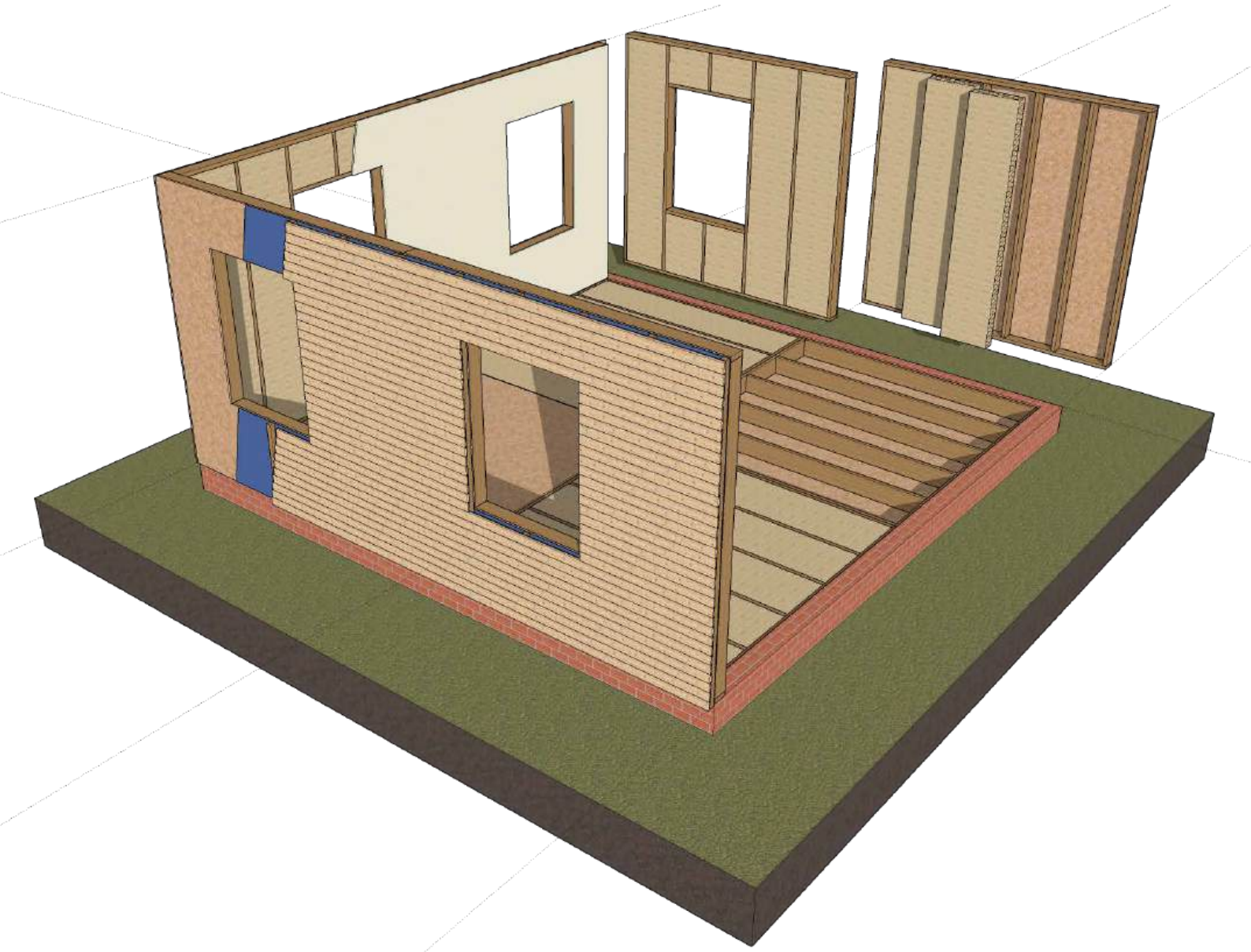
Lime plaster finish

3. Prefab Timber Frame

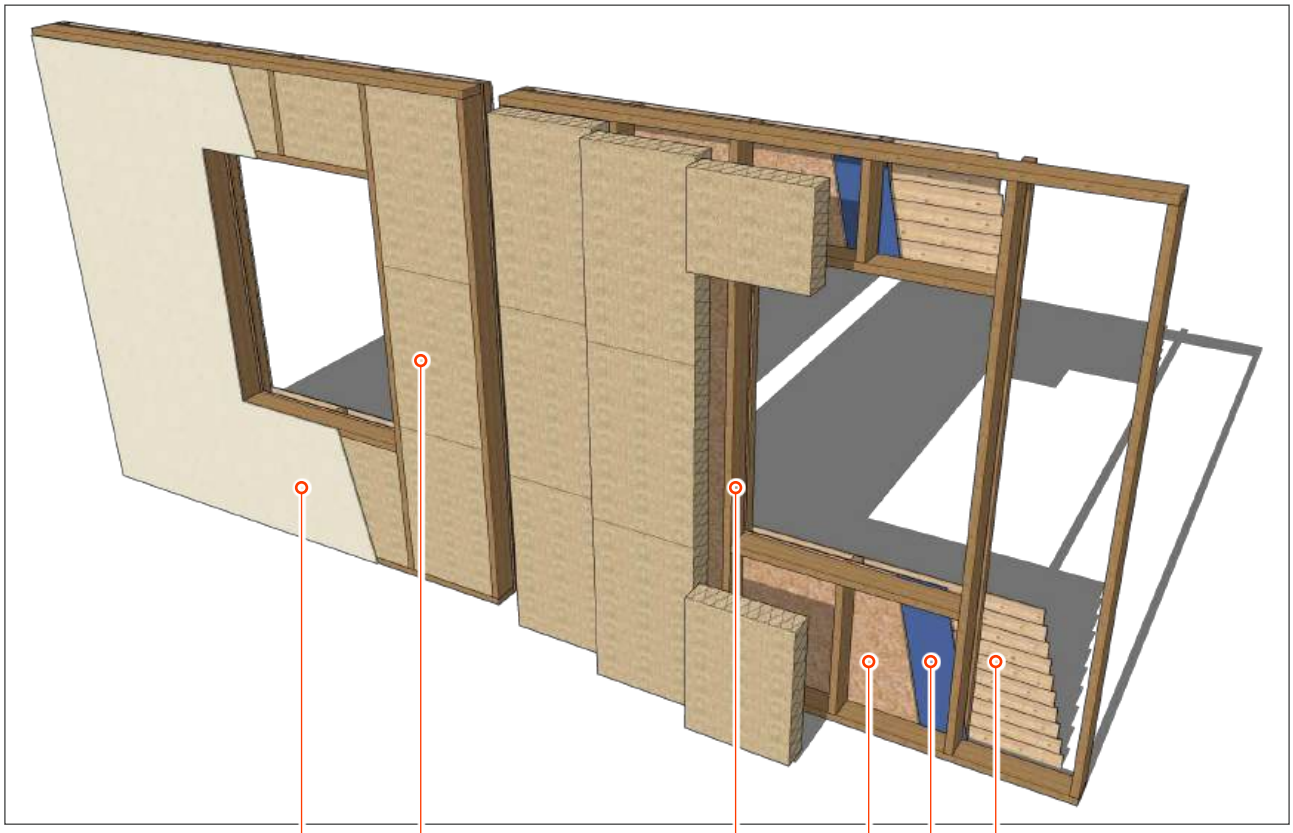
3 Prefabricated Timber Frame

This chapter provides the detailing guidelines for installing IndiTherm in timber cassettes for prefabricated timber frame construction.

Contents

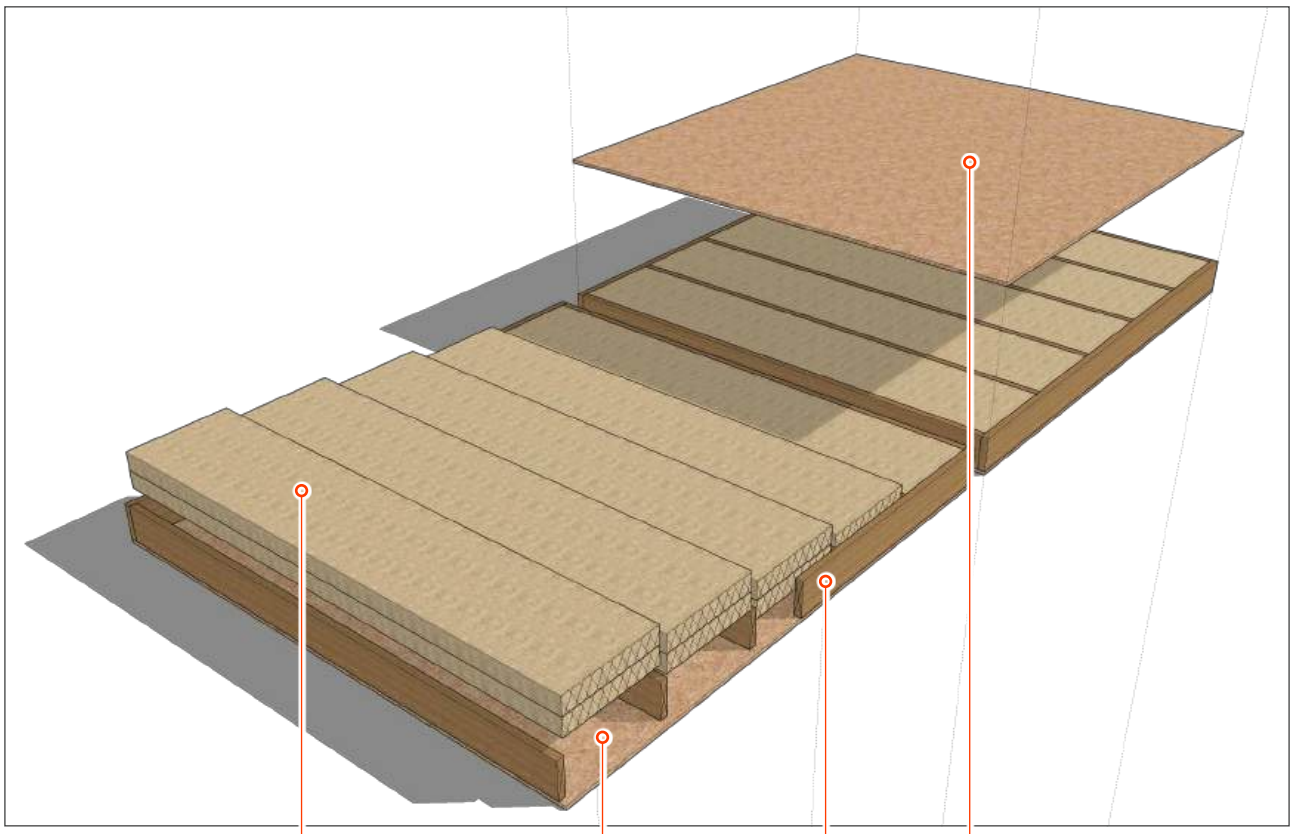


3.1 Wall Units



Interior Face Material
IndiTherm
Timber Framework
OSB
Breather Membrane
External Cladding

IndiTherm should be installed in the same was as most other insulation materials, snugly fitted between the timber casette framework. the diagram above is representative of a 'typical' timber casette system. If the system being used has more unique features and due to that there is some uncertainty as to the suitability of the use of IndiTherm in the system, then the technical support team should be contacted.

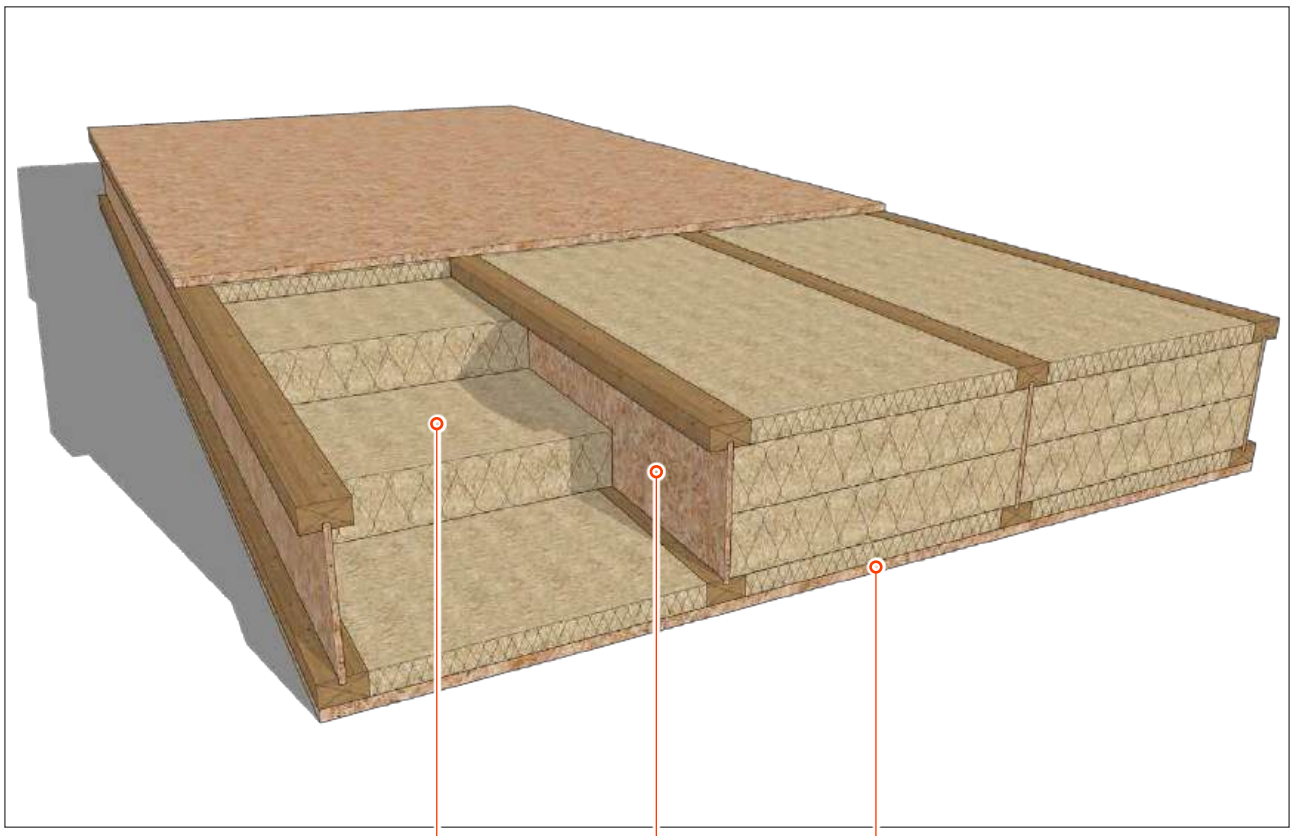


IndiTherm
OSB Backing
Timber Framework
OSB Subfloor

Likewise for floor casettes, IndiTherm should be installed in the same was as most other insulation materials, snugly fitted between the timber casette framework. the diagram above is representative of a 'typical' timber casette system. If the system being used has more unique features and due to that there is some uncertainty as to the suitability of the use of IndiTherm in the system, then the technical support team should be contacted.

3.3

I-Beam Guidance



Insulating I-Joists can be tricky to insulate because of their non-uniform profile. We recommend using up to four layers of IndiTherm to partially or completely insulate the void. The choice for how many layers of insulation depends on the desired U-Value and the which element of the building the joists are a part of. For example, joists located between floors may require less insulation and so only two layers of insulation may be required; on the other hand, for joists located between the top floor and a cold loft space, the full 4 layers may be beneficial as this will provide the lowest U-value.

IndiTherm comes in 50mm, the thinnest standard size, for this reason we recommend using I-Joists with a flange depth of between 45mm and 50mm to match this. This will allow the next layer of insulation to sit on top of the first without any gaps.

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Please refer to the latest safety guidance, terms and conditions online.
Technical Details subject to change.