Section 7.0

Construction Details

Masonry

- Window and door heads - open back steel lintel
- Window sill
- Window and door jamb
- Ground floor junction with an external wall
- Junction with an external wall and an intermediate floor within a dwelling
- Junction with an external wall eaves, insulation at ceiling level
- Junction with an external wall gable, insulation at ceiling level
- Junction with an external wall – normal corner
- Junction with an external wall – inverted corner
- Junction with an external wall and a party wall between dwellings
- Junction with a party wall and ground floor
- Junction with a party wall gable, insulation at ceiling level

Timber Frame

- Window and door heads – timber lintel
- Window sill
- Window and door jamb
- Ground floor junction with an external wall
- Junction with an external wall and an intermediate floor within a dwelling
- Junction with an external wall eaves, insulation at ceiling level
- Junction with a party wall gable, insulation at ceiling level
- Junction with an external wall – normal corner
- Junction with an external wall – inverted corner
- Junction with an external wall and party wall between dwellings
- Junction with a party wall and ground floor
- Junction with a party wall gable, insulation at ceiling level

Construction details

Linear thermal transmittance values (psi values) and temperature factors

Introduction

In order to assess the thermal performance of a building the total heat loss through the fabric envelope of the building needs to be established, this entails calculating the heat loss through the plane elements of the construction along with the heat loss through the thermal bridges.

Thermal bridges have the effect of reducing the internal surface temperature and increasing heat loss which in turn can result in an increased risk of condensation and mould growth forming at the thermal bridge.

There are two types of thermal bridge:

1. Repeating thermal bridges, such as mortar joints in aircrete blockwork, timber ceiling joists and timber studs in timber frame walls etc, are taken into account in U-value calculations in accordance with the methodology detailed in BS EN 6946.

2. Non-repeating thermal bridges such as the junctions of the walls with the roof and floor and window jambs, sills and heads etc are calculated by numerical modelling in accordance with the methodology detailed in BS EN ISO 10211.

Heat loss through thermal bridging is commonly referred to as the `linear thermal transmittance value` or the psi value (Ψ-value).

In order to prevent localised surface condensation the temperature factor (known as the f-factor) should also be established.
BRE IP 1/06 provides guidance and limitations on the types of buildings and the f-factor required in order to prevent surface condensation and mould growth from occurring. Generally, an f-factor of no less than 0.75 is adequate for the internal environment in dwellings. Non residential values vary between 0.30 and 0.90 dependent on the activity within the building.

Building Regulations

In accordance with Approved Documents L1A and L2A in England and Wales, Scottish Technical Standard 6 and Technical Booklet F in Northern Ireland, the effect of thermal bridging at junctions and openings in the building should be limited so that localised condensation and excessive heat loss are avoided.
In order to prevent localised condensation and mould growth from occurring on the plane areas of roofs and floors a U-value of 0.35W/m^{2}K should not be exceeded, for walls its 0.70W/m^{2}K. For non-repeating thermal bridges the guidance in BRE IP1/06 should be followed. Calculations should be compiled in accordance with BR 497 - `Conventions for calculating linear thermal transmittance and temperature factors`.

Table 1 - Avoiding surface condensation and mould growth

	f-factor
Dwellings; residential buildings; schools	0.75
Swimming pool (including a dwelling with an indoor pool)	0.90

Table 2 - Avoiding surface condensation and mould growth

	f-factor
Storage buildings	0.30
Offices, retail premises	0.50
Sports halls, kitchens, canteens, buildings with un-flued gas heaters	0.80
High humidity buildings such as swimming pools, laundries and breweries	0.90

The overall heat loss from dwellings is measured using SAP 2009, and SBEM for all other buildings, both of which require the heat loss from the total amount of linear thermal bridging to be taken into account.

Generally, there are three ways of providing psi values for a construction detail:

1. Use Accredited Details (ACD`s) and psi values as published by the relevant statutory body
2. Use non-accredited details and psi values that do not have independent third party approval
3. Use non-accredited details and psi values that do have independent third party approval

Construction Details Schemes

Currently there are no independent third party approval schemes in operation, however, when they are available it is Knauf Insulation`s intention to take up membership of one (or several of the schemes) thereby allowing us to be able to provide proprietary construction details which have not only been assessed and validated as being accurately compiled and calculated but also (and most importantly) to confirm that the details can actually be built on site.

Independent schemes will aim to deliver consistent, transparent and reliable psi value calculations that deliver performance over and above that of the relevant Accredited Details, thus reducing heat loss and providing beneficial results in SAP and SBEM calculations. An additional benefit is that the punitive penalties associated with the creation of `non-scheme details` are negated whilst compliance with the relevant national thermal regulations is also shown.

Accredited Details (ACD`s) and associated psi values

When specifying the use of Accredited Details in England and Wales psi values from Appendix K in SAP 2009 should be used, for Scotland psi values from the `Accredited Construction Details Scotland 2010` are appropriate.

Significant improvements in Accredited Detail psi values can be achieved by adapting or amending existing details and the insulation materials that have been specified.

Providing a psi value calculation (created by an approved thermal modeller) can deliver significant improvements in the thermal performance that can be legitimately assigned to construction details. For instance, a normal masonry corner, fully filled with Earthwool Cavity Slab 34 Super can be improved from an `Accredited` value of 0.09 to 0.058, an improvement of over 43% by providing an accredited `Construction Details` calculation rather than relying on an Accredited Detail default psi value.

This level of improvement can obviously have an even more significant impact on heat loss (and compliance with the Building Regulations) when it is applied to the total length of all of the normal corners associated with the building being assessed via SAP 2009 or the SBEM.

This detail also has an f-factor of 0.904 which means that it can be specified for use in all types of buildings, with any internal activity, with confidence that surface condensation and mould growth will not occur.

Knauf Insulation Construction Details

The construction details on the following pages have been compiled by Knauf Insulation `thermal modellers` and are typical of the construction details that we will be promoting and providing when independent third party approval schemes are available.

Specifiers of our construction details can then be confident that our declared psi values and f-factors will be accurate, consistent, robust and the detail has been proven to be buildable on site after undergoing independent assessment.

A range of the most common construction details in dwellings and their relative psi values and f-factors are shown on the following pages.

The psi values contained within the Construction Details section have been applied to the whole-house specification models as detailed in our "Thermal Efficiency Standards in New Dwellings" brochure and enable the achievement of a thermal bridging `Y` value of 0.05.

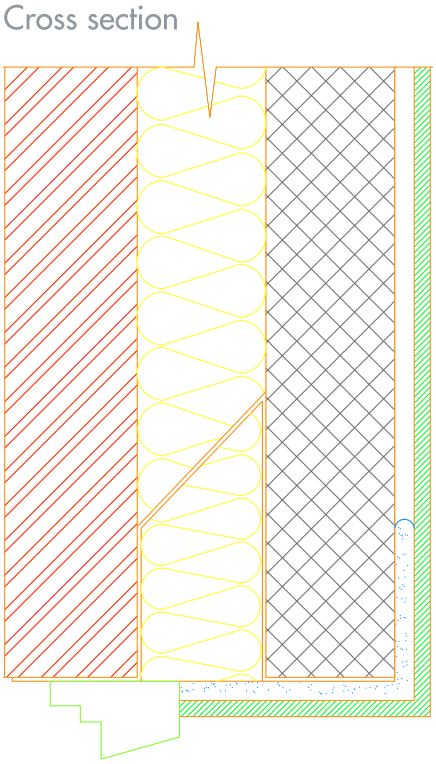
`Thermal Efficiency Standards in New Dwellings - A guide to Approved Document L1A 2010` (England and Wales) can be downloaded at knaufinsulation.co.uk

Construction details

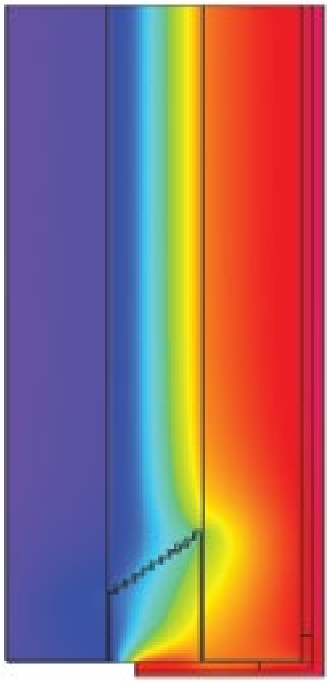
Masonry

Window and door heads - open back steel lintel

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.224

Accredited Detail psi value
Ψ = 0.30

Temperature factor
f = 0.967

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ = 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs
5. Open backed steel lintel filled with insulation with a thermal conductivity no worse than 0.038 W/mK

Thermal performance

1. Ensure lintel thickness is no greater than 3mm
2. For built-in applications, ensure Earthwool DriTherm Cavity Slab 34 Super is in intimate contact with the lintel
3. Window/door frame to overlap insulation component of the lintel by no less than 30mm
4. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
5. Ensure insulation within the lintel is undamaged and in contact with the window or door frame
6. Seal the internal joint between the window or door frame and the internal finish

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

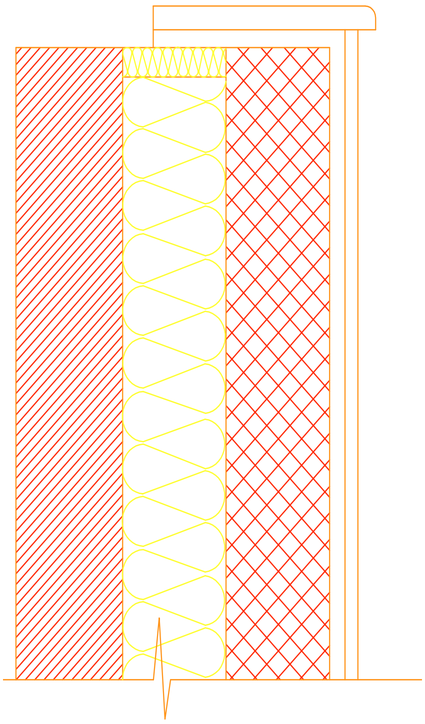
   a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof
   b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate
   c. Every penetration in the plasterboard to be sealed
   d. All mortar joints in the masonry should be fully filled

Construction details

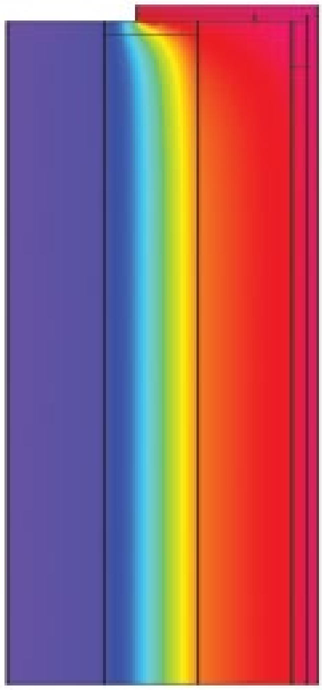
Masonry

Window sill

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.009

Accredited Detail psi value
Ψ = 0.04

Temperature factor
f = 0.965

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs
5. Cavity closer, minimum thermal resistance path of 0.45 m^{2}K/W

Thermal performance

1. Cavity closer to have a minimum thermal resistance path through the closer of no less than 0.45 m^{2}K/W
2. Window frame to overlap cavity closer by no less than 30mm
3. For built-in applications, ensure Earthwool DriTherm Cavity Slab 34 Super is in intimate contact with the full length of the cavity closer
4. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
5. If a window board is present seal the joint between the window board and window frame and the window board and the air barrier with a flexible sealant
6. If there is no window board the internal air barrier will also form the window sill, in this instance seal between the air barrier and the window frame with a flexible sealant

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

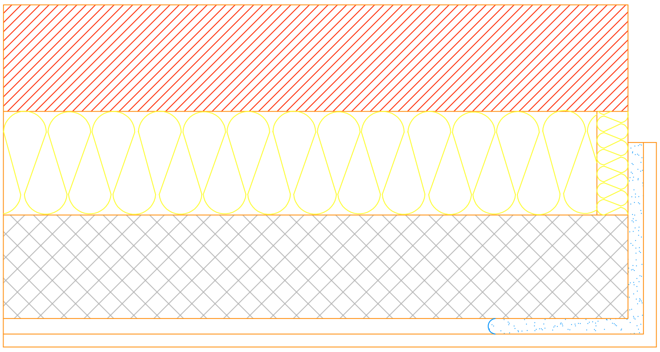
a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof
b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate
c. Every penetration in the plasterboard to be sealed
d. All mortar joints in the masonry should be fully filled

Construction details

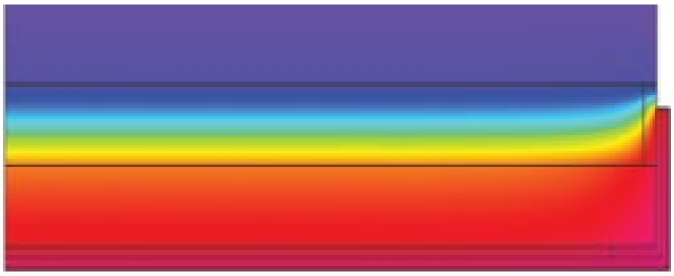
Masonry

Window and door jamb

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.014

Accredited Detail psi value
Ψ = 0.05

Temperature factor
f = 0.969

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs
5. Cavity closer, minimum thermal resistance path of 0.45 m²K/W

Thermal performance

1. Cavity closer to have a minimum thermal resistance path through the closer of no less than 0.45 m²K/W
2. Window or door frame to overlap cavity closer by no less than 30mm
3. For built-in applications, ensure Earthwool DriTherm Cavity Slab 34 Super is in intimate contact with the full length of the cavity closer
4. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
5. Seal the joint between the air barrier and the window or door frame with a flexible sealant

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

   a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

   b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

   c. Every penetration in the plasterboard to be sealed

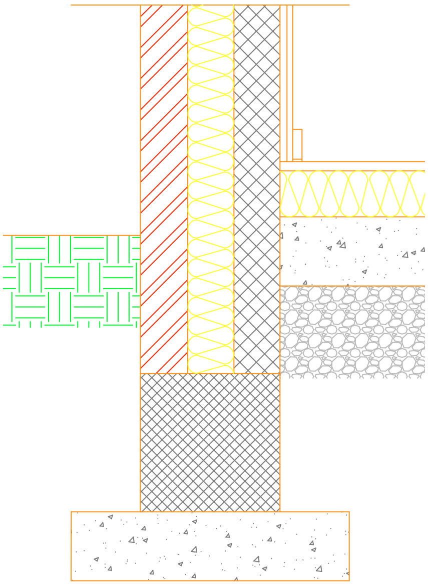
   d. All mortar joints in the masonry should be fully filled

Construction details

Masonry

Ground floor junction with an external wall

Cross section



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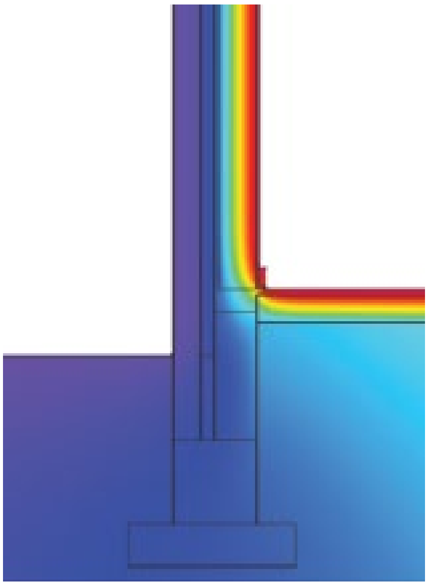


Linear thermal transmittance (psi value)
Ψ = 0.021

Accredited Detail psi value
Ψ = 0.16

Temperature factor
f = 0.895

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs

Ground floor

1. 100mm Polyfoam ECO Floorboard Standard
2. Vapour control layer
3. Chipboard deck

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled with installation commencing at the foot of the cavity
2. Ensure that there are no gaps in the Polyfoam ECO Floorboards and that they are in intimate contact with each other with all joints closed
3. Ensure Polyfoam ECO Floorboards are in intimate contact with the inner block leaf and for the full length of the floor perimeter
4. Seal the joint at the junction of the floor deck and wall lining

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

b. Every hole cut in the plasterboard to be fully sealed at its perimeter with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

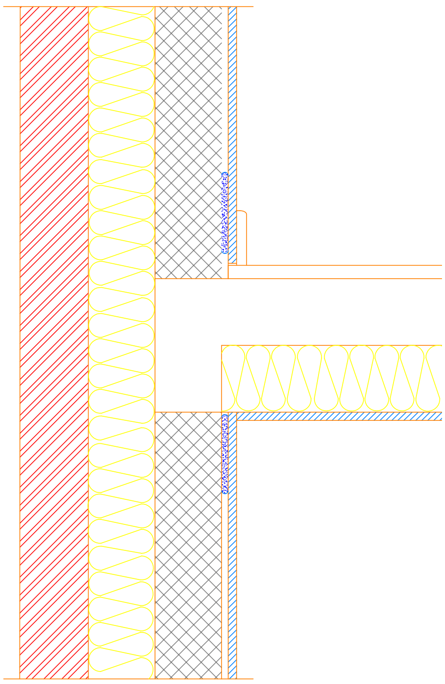
d. All mortar joints in the masonry should be fully filled

Construction details

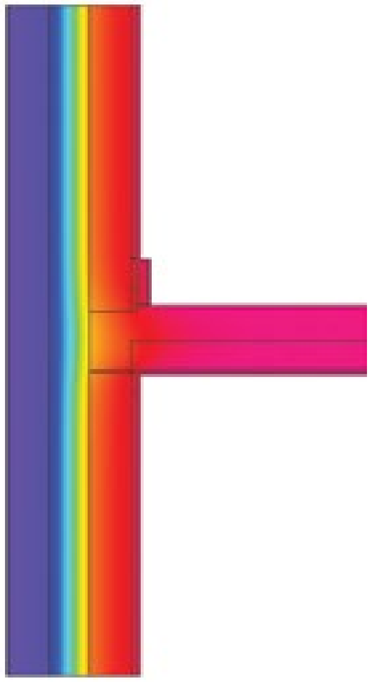
Masonry

Junction with an external wall and an intermediate floor within a dwelling

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.005

Accredited Detail psi value
Ψ = 0.07

Temperature factor
f = 0.967

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs
5. 100mm of Earthwool Acoustic Roll between 200mm timber floor joists

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. Ensure the space between the internal wall and adjacent floor joist is completely filled with Earthwool Acoustic Roll and to the same depth as the joist

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

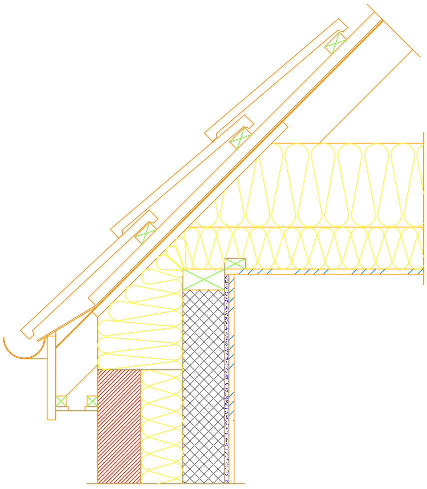
d. All mortar joints in the masonry should be fully filled

Construction details

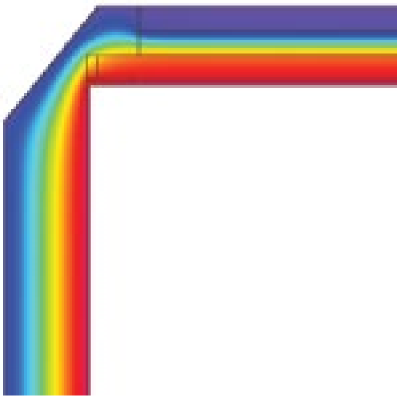
Masonry

Junction with an external wall eaves, insulation at ceiling level

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.046

Accredited Detail psi value
Ψ = 0.06

Temperature factor
f = 0.968

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs
5. Ceiling 100mm Earthwool Loft Roll 44 between 100mm timber joists overlaid with 2 layers of 170mm Earthwool Loft Roll 44
6. Ceiling finished with 12.50mm standard plasterboard

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. For built-in applications, ensure Earthwool DriTherm Cavity Slab 34 Super is in intimate contact with the Earthwool Loft Roll 44 over the head of the wall/eaves box compartment in order to maintain continuity of the insulation envelope
3. Ensure Earthwool Loft Roll 44 is in intimate contact with the Earthwool Loft Roll 44 within the eaves box
4. Ensure Earthwool Loft Roll 44 is in intimate contact with the eaves ventilator and the thermal resistance between the wall plate and the eaves ventilator is a minimum of 1.20 m^{2}K/W

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

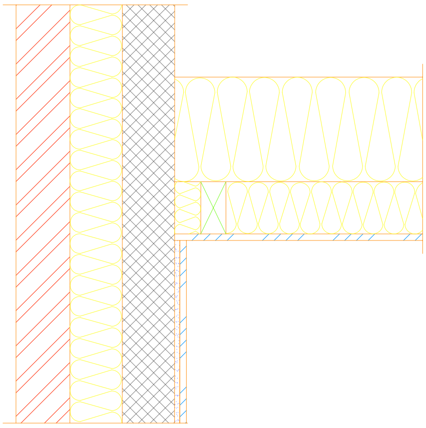
d. All mortar joints in the masonry should be fully filled

Construction details

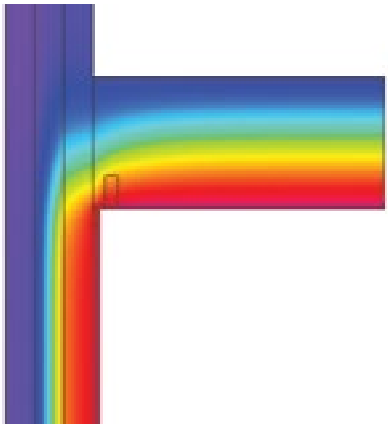
Masonry

Junction with an external wall gable, insulation at ceiling level

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.052

Accredited Detail psi value
Ψ = 0.24

Temperature factor
f = 0.968

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs

Floor

1. 100mm Earthwool Loft Roll 44 between 100mm timber joists, overlaid with 2 layers of 170mm Earthwool Loft Roll 44
2. Ceiling finished with 12.50mm standard plasterboard

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. Ensure that the space between the internal wall and adjacent ceiling joist is fully filled with Earthwool Loft Roll 44, and to the same depth as the ceiling joist
3. Ensure that both layers of Earthwool Loft Roll 44 are in intimate contact with the internal block leaf

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

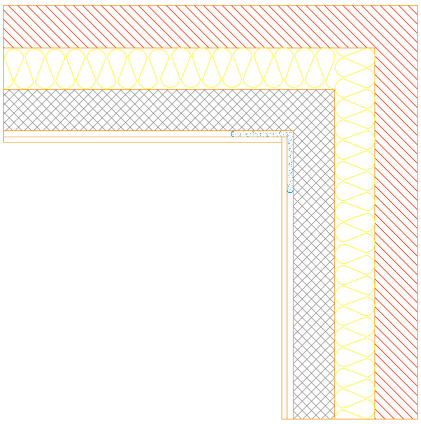
a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof
b. Every hole cut in the plasterboard to be fully sealed at its perimeter with plasterboard adhesive to the masonry substrate
c. Every penetration in the plasterboard to be sealed
d. All mortar joints in the masonry should be fully filled

Construction details

Masonry

Junction with an external wall – normal corner

Cross section



Isothermal image

Linear thermal transmittance (psi value)

Ψ = 0.058

Accredited Detail psi value

Ψ = 0.09

Temperature factor

f = 0.906

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. For built-in applications, ensure that the Earthwool DriTherm Cavity Slab 34 Super completely fills the corner and is in intimate contact with the internal and external masonry leaves at their junctions

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

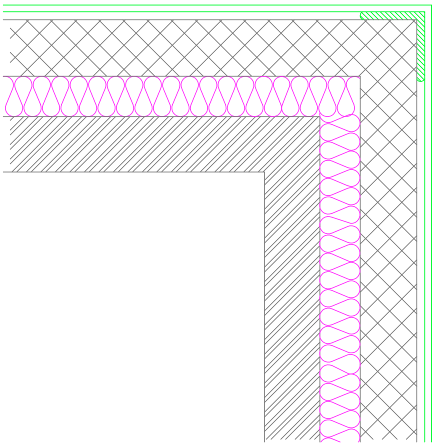
d. All mortar joints in the masonry should be fully filled

Construction details

Masonry

Junction with an external wall – inverted corner

Cross section



Isothermal image

Linear thermal transmittance (psi value)
Ψ = 0.091

Accredited Detail psi value
Ψ = 0.090

Temperature factor
f = 0.968

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal wall finished with 12.50mm standard plasterboard on dabs

Thermal performance

1. For built-in applications, ensure that there are no gaps in the Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. For built-in applications, ensure that the Earthwool DriTherm Cavity Slab 34 Super completely fills the corner and is in intimate contact with the internal and external masonry leaves at their junctions

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof

b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

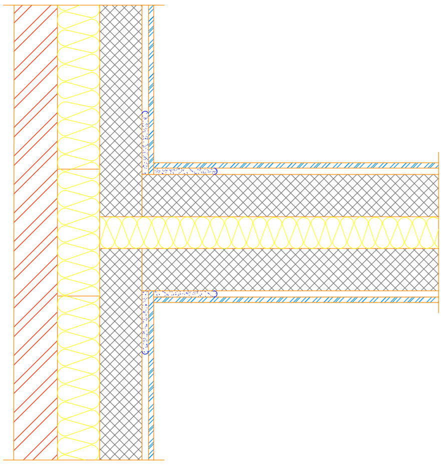
d. All mortar joints in the masonry should be fully filled

Construction details

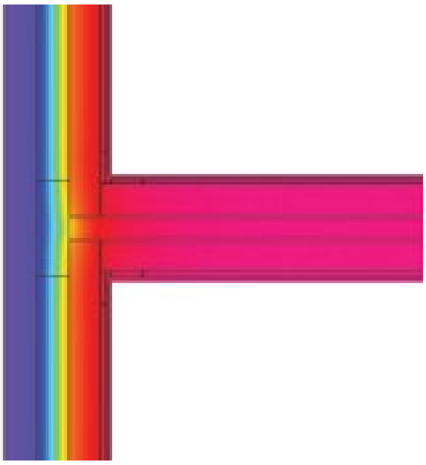
Masonry

Junction with an external wall and a party wall between dwellings

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.041

Accredited Detail psi value
Ψ = 0.06

Temperature factor
f = 0.942

Construction details

1. 103mm brick external leaf
2. 100mm cavity fully filled with Earthwool DriTherm Cavity Slab 34 Super or Supafil 34
3. 100mm block internal leaf (λ= 0.15 W/mK)
4. Internal leaf finished with 12.50mm standard plasterboard on dabs

Party Wall

1. 100mm block internal leaf (λ=0.49 W/mK)
2. 75mm cavity fully filled with Supafil Party Wall
3. Internal wall finished with 12.50mm standard plasterboard on dabs

Thermal performance

1. For built-in applications, ensure that there are no gaps in Earthwool DriTherm Cavity Slab 34 Super and the cavity is fully filled
2. For built-in applications ensure that Earthwool DriTherm Cavity Slab 34 Super is in intimate contact with the for the full height of the junction

Cavity barrier

1. Ensure cavity barrier is in intimate contact with the internal and external masonry leaves for the full height of the junction
2. Ensure cavity barrier is held in compression for the full height of the junction
3. Ensure all joints in cavity barriers are fully closed

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were, able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

a. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate

b. Every hole cut in the plasterboard to be fully sealed at its perimeter with plasterboard adhesive to the masonry substrate

c. Every penetration in the plasterboard to be sealed

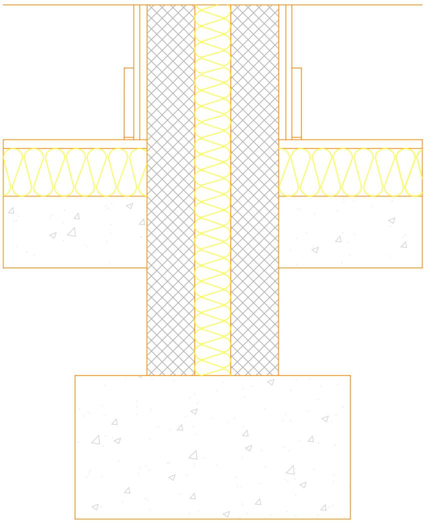
d. All mortar joints in the masonry should be fully filled

Construction details

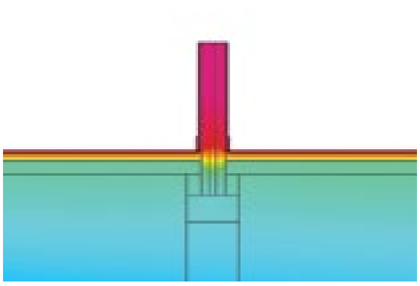
Masonry

Junction with a party wall and ground floor

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.053

Accredited Detail psi value
Ψ = 0.08

Temperature factor
f = 0.995

Construction details

Party Wall

1. 100mm block internal leaf (λ=0.49 W/mK)
2. 75mm cavity fully filled with Supafil Party Wall
3. Internal wall finished with 12.50mm standard plasterboard on dabs

Ground floor

1. 100mm Polyfoam ECO Floorboard Standard
2. Vapour control layer
3. Chipboard deck

Thermal performance

1. Ensure that the foot of the party wall cavity is clean and free from mortar droppings prior to installation of Supafil Party Wall
2. Ensure that there are no gaps in the Polyfoam ECO Floorboard Standard boards and that they are in intimate contact with each other

Air barrier

1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:

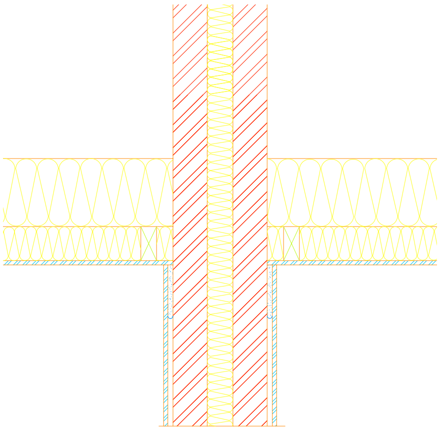
   a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof
   b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate
   c. Every penetration in the plasterboard to be sealed
   d. All mortar joints in the masonry should be fully filled

Construction details

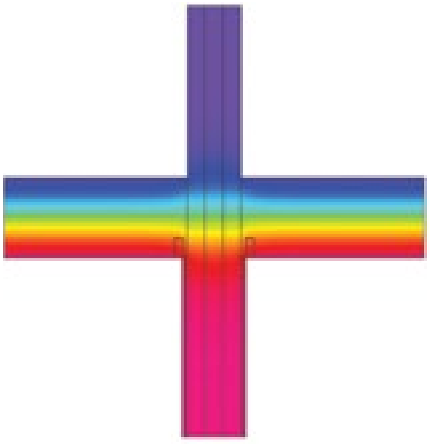
Masonry

Junction with a party wall gable, insulation at ceiling level

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.072

Accredited Detail psi value
Ψ = 0.12

Temperature factor
f = 0.991

Party Wall

1. 100mm block internal leaf (λ=0.49 W/mK)
2. 75mm cavity fully filled with Supafil Party Wall
3. Internal wall finished with 12.50mm standard plasterboard on dabs

Roof

1. 100mm Earthwool Loft Roll 44 between 100mm timber joists, overlaid with 2 layers of 170mm Earthwool Loft Roll 44
2. Ceiling finished with 12.50mm standard plasterboard

Thermal performance

1. Ensure the space between the wall and adjacent ceiling joist is completely filled with Earthwool Loft Roll 44 and to the same depth as the ceiling joist
2. Ensure that the Earthwool Loft Roll 44 layer over the ceiling joists is in intimate contact with the party wall and for the full length of the party wall
3. Seal the joint at the junction of the wall and ceiling finish with a flexible sealant

Air barrier

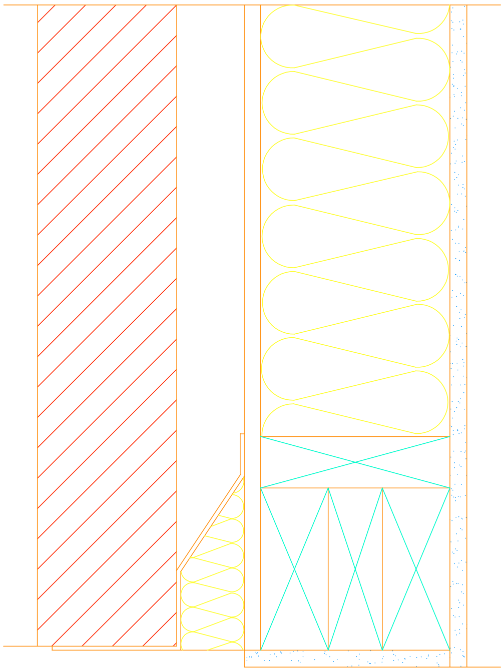
1. For preference an air barrier on masonry should be either wet plaster or plasterboard finish with a sealing render or parge coat on the masonry. It is extremely difficult to achieve a satisfactory and durable air barrier by using plasterboard on dabs alone
2. This advice is different to the recommendations currently given in Accredited Construction Details (ACD's) which place plasterboard on dabs as an equally effective air barrier to wet plaster and render finishes. This recommendation is given following experience of extensive air leakage testing on masonry dwellings which suggests that if plasterboard on dabs were able to form an effective air barrier, it is very rarely achieved in practice
3. However since ACD's allow the usage of plasterboard on dabs and this is the most common form of construction currently used we have illustrated it here
4. To maximise effectiveness in reducing air leakage the following steps should be undertaken:
   a. Continuous ribbons of adhesive, around the perimeter of each board, particularly at the junctions with the roof
   b. Every hole cut in the plasterboard to be fully sealed (at its perimeter) with plasterboard adhesive to the masonry substrate
   c. Every penetration in the plasterboard to be sealed
   d. All mortar joints in the masonry should be fully filled

Construction details

Timber frame

Window and door heads – timber lintel

Cross section



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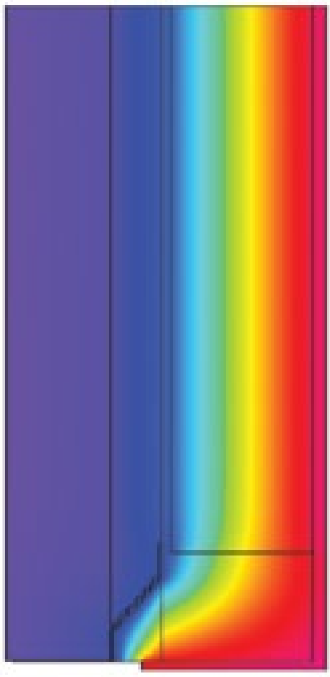


Linear thermal transmittance (psi value)
Ψ = 0.085

Accredited Detail psi value
Ψ = 0.30

Temperature factor
f = 0.972

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal finish of 12.5mm standard plasterboard
8. Steel external lintel
9. Timber internal lintel
10. 50mm wide cavity closer (λ=0.035 W/mK) to suit height of steel lintel

Thermal performance

1. Ensure metal lintel thickness is no greater than 3mm
2. Ensure insulation with a thermal conductivity value of no worse than 0.035 W/mK fully fills the space within the lintel and overlaps the timber lintels in the internal wall it should also be in intimate contact with the window/door frame
3. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is intimate contact with the timber lintels in the internal wall
4. Window/door frame to overlap insulation component of the lintel by no less than 30mm

Air barrier

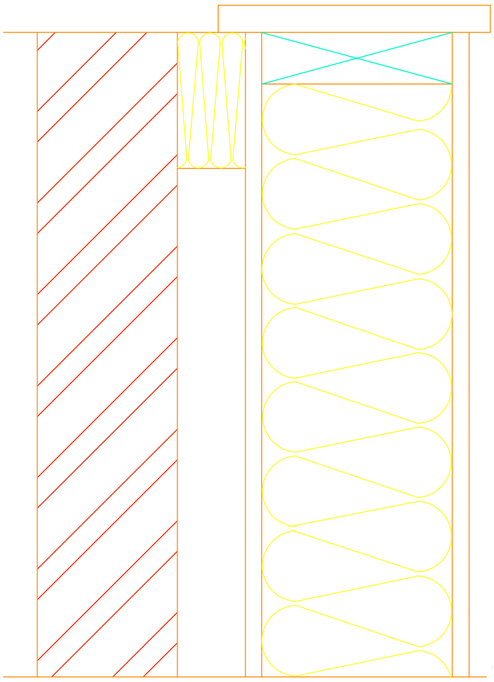
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the internal joint between the window or door frame and the lintels and cover with double sided tape
3. Install vapour control layer and overlap onto double sided tape
4. Ensure all interfaces between the door or window frame and the air barrier/vapour control layer are sealed with a flexible sealant
5. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

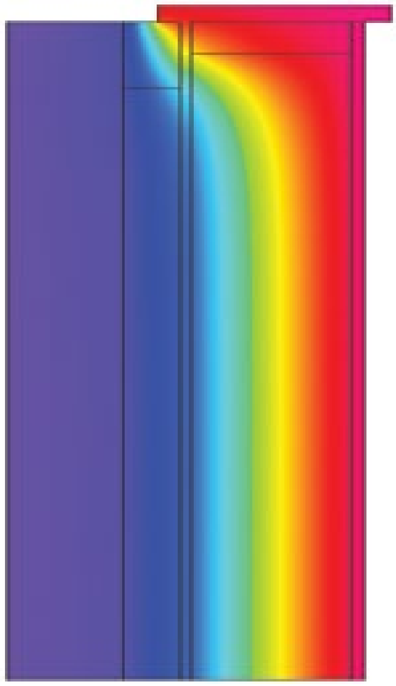
Timber frame

Window sill

Cross section



Isothermal image



Linear thermal transmittance (psi value)

Ψ = 0.034

Accredited Detail psi value

Ψ = 0.04

Temperature factor

f = 0.972

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal finish of 12.5mm standard plasterboard
8. 100mm x 50mm wide cavity closer (λ=0.035 W/mK)

Thermal performance

1. Install a cavity closer with a thermal resistance path through the closer of no less than 0.45 m²K/W, it should be in intimate contact with the window sill
2. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is intimate contact with the sill support rail
3. Window/door sill to overlap cavity closer by no less than 30mm
4. Ensure cavity closer protrudes slightly above the head of the cavity to enable it be in intimate contact with the window frame

Air barrier

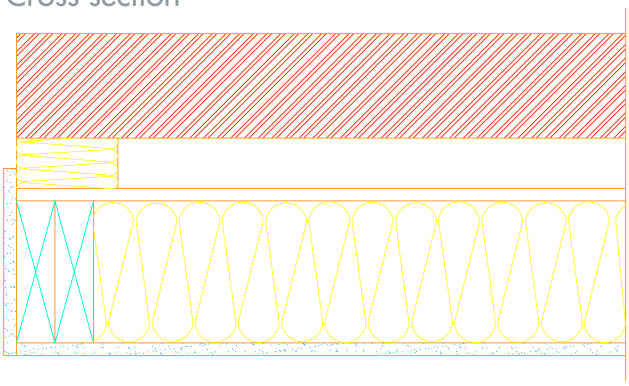
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Maintain continuity of the air barrier by overlapping it onto the breather membrane, finishing at the junction of the cavity closer and the cavity face of the masonry leaf
3. Seal the junction between the window sill and the sill board with a flexible sealant
4. Seal the junction between the plasterboard and the sill board with a flexible sealant
5. Ensure all interfaces between the door or window frame and the air barrier/vapour control layer are sealed with a flexible sealant
6. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

Timber frame

Window and door jamb

Cross section



Linear thermal transmittance (psi value)
Ψ = 0.039

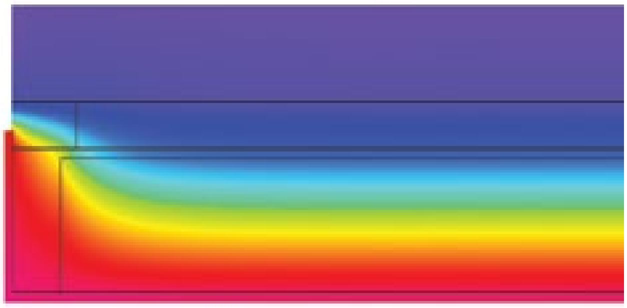
Accredited Detail psi value
Ψ = 0.05

Temperature factor
f = 0.972

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal finish of 12.5mm standard plasterboard
8. 100mm x 50mm wide cavity closer (λ=0.035 W/mK)

Isothermal image



Thermal performance

1. Install a cavity closer with a thermal resistance path through the closer of no less than 0.45 m²K/W
2. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is intimate contact with the cripple studs
3. Window/door frame to overlap cavity closer by no less than 30mm

Air barrier

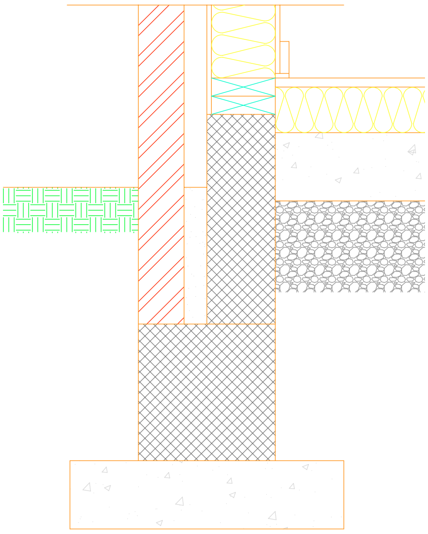
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Maintain continuity of the air barrier by overlapping it onto the breather membrane, and taping it to the window/door frame
3. Seal the junction of the plasterboard and window/door frame with a flexible sealant
4. Ensure all interfaces between the door or window frame and the air barrier/vapour control layer are sealed with a flexible sealant
5. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

Timber frame

Ground floor junction with an external wall

Cross section



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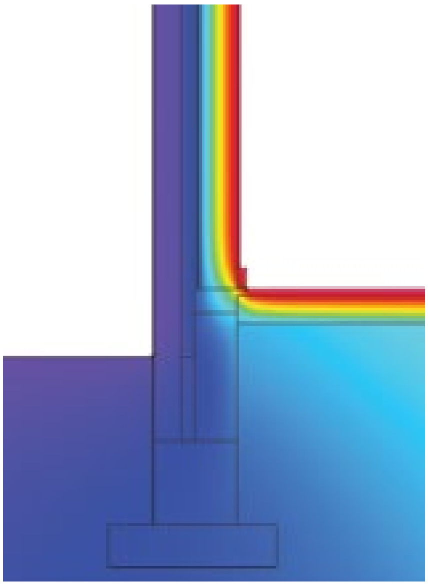


Linear thermal transmittance (psi value)
Ψ = 0.040

Accredited Detail psi value
Ψ = 0.16

Temperature factor
f = 0.864

Construction details

1. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
2. Vapour control layer
3. Wall finish of 12.50 + 19mm standard plasterboard

Ground floor

1. 100mm Polyfoam ECO Floorboard Standard
2. Vapour control layer
3. Chipboard deck

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer
2. Ensure that there are no gaps in the Polyfoam ECO Floorboards and that they are in intimate contact with each other with all joints closed
3. Ensure Polyfoam ECO Floorboards are in intimate contact with the sole plates and for the full length of the floor perimeter
4. Seal the joint at the junction of the floor deck and wall lining

Air barrier

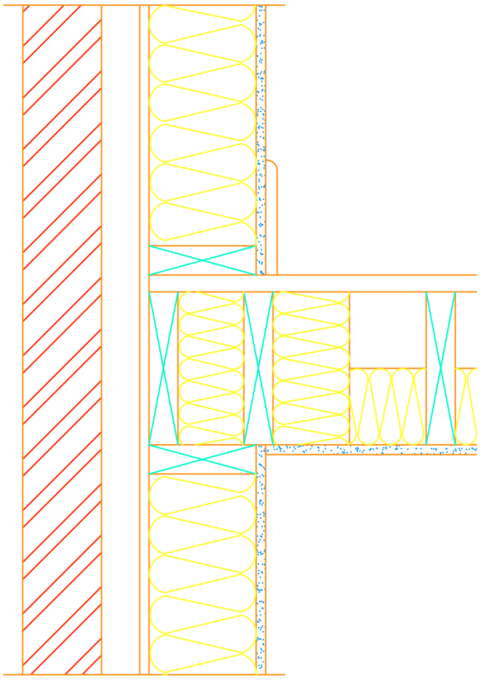
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the corner joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

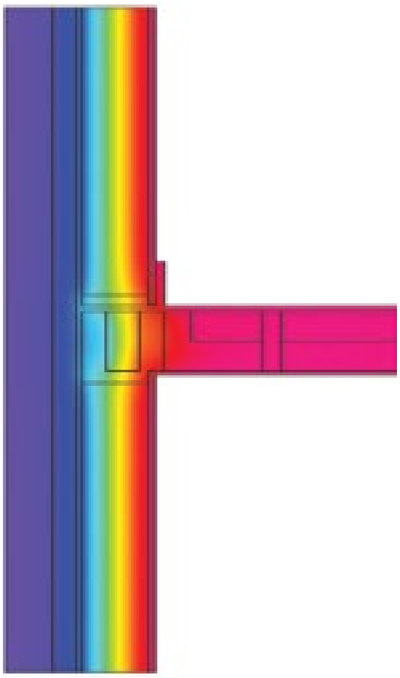
Timber frame

Junction with an external wall and an intermediate floor within a dwelling

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.027

Accredited Detail psi value
Ψ = 0.07

Temperature factor
f = 0.972

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer

Ceiling

1. 100mm Earthwool Acoustic Roll laid on ceiling between timber floor joists
2. Internal wall finish of 12.5mm standard plasterboard
3. Internal ceiling finish of 12.5mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members
2. Install 100mm of Earthwool Acoustic Roll around the perimeter of the floor, ensure insulation is the same depth as the floor joists and is intimate contact with the ceiling, soffit of the floor deck and the header/blocking
3. Insert Earthwool FrameTherm Roll 40 in the space between the wall head beams

Air barrier

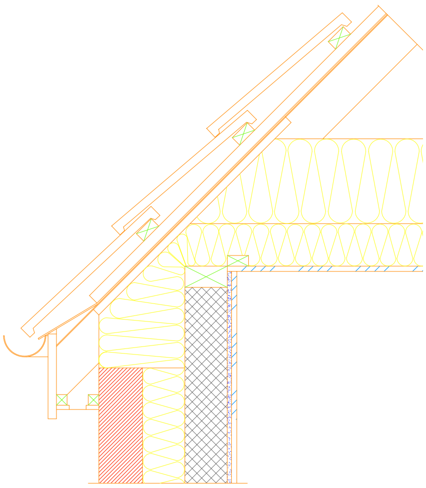
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the gap between the plasterboard and floor deck and the skirting board and floor deck with a flexible sealant
3. Maintain the continuity of the vapour control layer/air barrier through the floor zone
4. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape ealed with an aluminised tape

Construction details

Timber frame

Junction with an external wall eaves, insulation at ceiling level

Cross section



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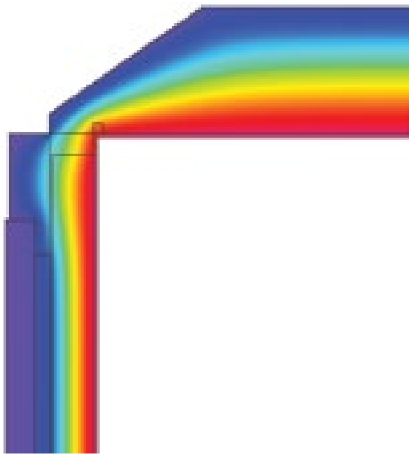


Linear thermal transmittance (psi value)
Ψ = 0.059

Accredited Detail psi value
Ψ = 0.06

Temperature factor
f = 0.968

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal wall finish of 12.5mm standard plasterboard

Roof

1. 100mm Earthwool Loft Roll 44 between 100mm timber joists, overlaid with 2 layers of 170mm Earthwool Loft Roll 44
2. Ceiling finished with 12.50mm standard plasterboard
3. 100mm x 50mm wide cavity closer (λ=0.035 W/mK)

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with head plate
2. Ensure Earthwool Loft Roll 44 covers the wall plate/head binder
3. Ensure Earthwool Loft Roll 44 is in intimate contact with the eaves ventilator and the thermal resistance between the wall plate and the eaves ventilator is a minimum of 1.20m²K/W

Air barrier

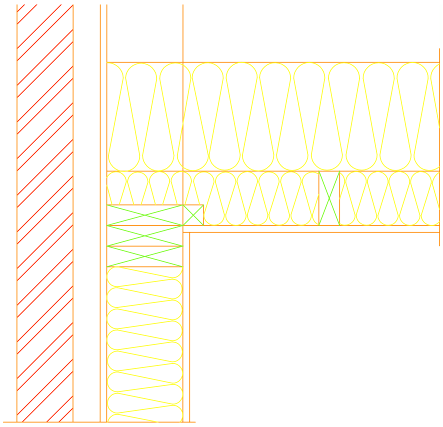
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the joint between the vapour control layer/air barrier with a flexible sealant to maintain the continuity of the air barrier
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

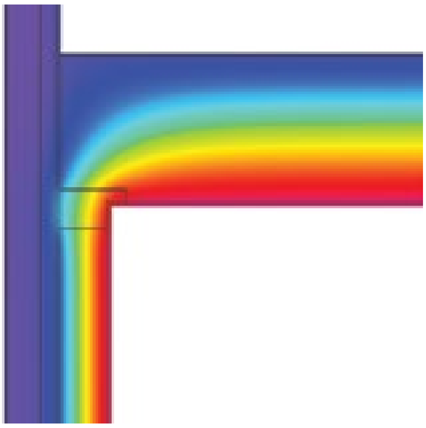
Timber frame

Junction with a party wall gable, insulation at ceiling level

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.081

Accredited Detail psi value
Ψ = 0.24

Temperature factor
f = 0.972

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal wall finish of 12.50mm standard plasterboard

Roof

1. 100mm Earthwool Loft Roll 44 between 100mm timber joists, overlaid with 2 layers of 170mm Earthwool Loft Roll 44
2. Ceiling finished with 12.50mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with the head plate
2. Ensure Earthwool Loft Roll 44 continues over the head of the internal wall and is in intimate contact with the internal face of the sheathing board for the full length of the party wall

Air barrier

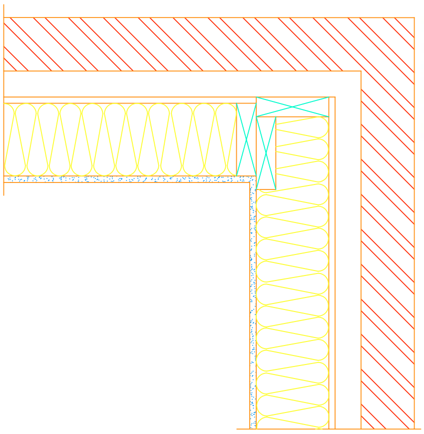
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the joint between the vapour control layer/air barrier with a flexible sealant to maintain the continuity of the air barrier
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

Timber frame

Junction with an external wall – normal corner

Cross section



Isothermal image

Linear thermal transmittance (psi value)
Ψ = 0.060

Accredited Detail psi value
Ψ = 0.09

Temperature factor
f = 0.971

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal wall finish of 12.50mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer

Air barrier

1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the internal corner joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

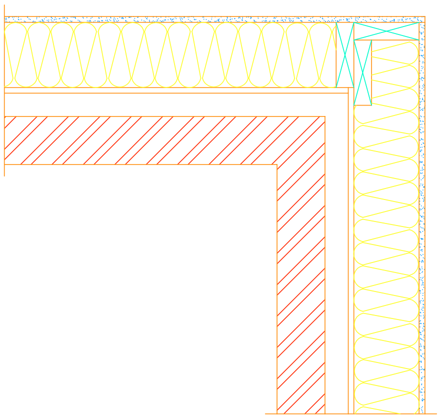
7.0

Construction details

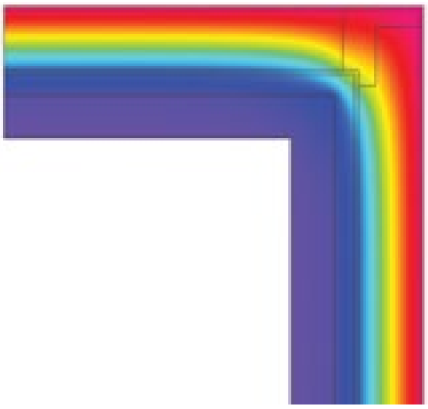
Timber frame

Junction with an external wall – inverted corner

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.053

Accredited Detail psi value
Ψ = 0.09

Temperature factor
f = 0.970

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal wall finish of 12.50mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer

Air barrier

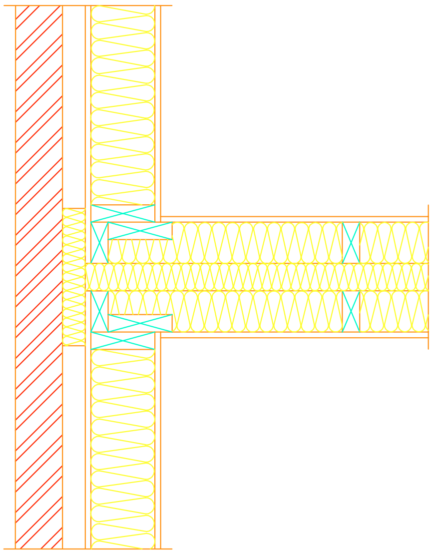
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the corner joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

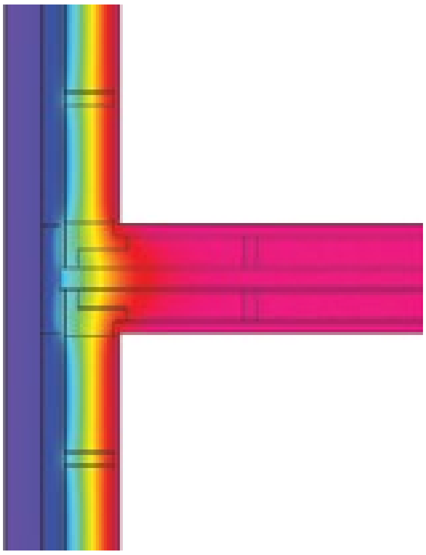
Timber frame

Junction with an external wall and party wall between dwellings

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.050

Accredited Detail psi value
Ψ = 0.06

Temperature factor
f = 0.920

Construction details

1. 103mm brick external leaf
2. 50mm unventilated cavity
3. 10mm sheathing plywood
4. Vapour permeable membrane
5. 140mm timber frame fully filled with 140mm Earthwool FrameTherm Roll 40
6. Vapour control layer
7. Internal wall finish of 12.50mm standard plasterboard

Party wall

1. 90mm timber frame fully filled with 90mm Earthwool FrameTherm Roll 40
2. Interframe void full filled with 60mm Earthwool Timber Frame Party Wall Slab
3. 300mm cavity barrier at junction
4. Wall finish of 12.50 + 19mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer
2. Ensure void between party wall timber studs is completely filled with Earthwool FrameTherm Roll 40
3. Ensure the interframe void is completely filled with Earthwool Timber Frame Party Wall Slab and it is in intimate contact with the Earthwool FrameTherm Roll 40 between the party wall timber studs

Cavity barrier

1. Ensure the cavity barrier in the external wall is in intimate contact with the party wall components and for the full height of the party wall
2. Ensure the cavity barrier is compression fitted at the party wall/external wall junction
3. Ensure all joints in cavity barriers are fully closed
4. Ensure cavity barrier is mechanically fixed to the sheathing board

Air barrier

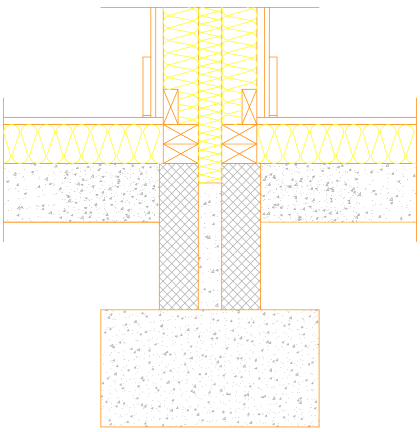
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the corner joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

Timber frame

Junction with a party wall and ground floor

Cross section



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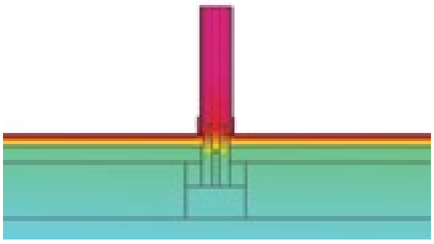


Linear thermal transmittance (psi value)
Ψ = 0.070

Accredited Detail psi value
Ψ = 0.08

Temperature factor
f = 0.995

Construction details

1. 90mm timber frame fully filled with 90mm Earthwool FrameTherm Roll 40
2. Interframe void fully filled with 60mm Earthwool Timber Frame Party Wall Slab
3. 300mm cavity barrier at junction of walls
4. Wall finish of 12.50 + 19mm standard plasterboard

Ground floor

1. 100mm Polyfoam ECO Floorboard Standard
2. Vapour control layer
3. Chipboard deck

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer
2. Ensure void between party wall timber studs is completely filled with Earthwool FrameTherm Roll 40
3. Ensure the interframe void is completely filled with Earthwool Timber Frame Party Wall Slab and it is in intimate contact with the Earthwool FrameTherm Roll 40 between the party wall timber studs
4. Ensure that there are no gaps in the Polyfoam ECO Floorboards and that they are in intimate contact with each other with all joints closed
5. Ensure Polyfoam ECO Floorboards are in intimate contact with the sole plates and for the full length of the floor perimeter
6. Seal the joint at the junction of the floor deck and wall lining

Air barrier

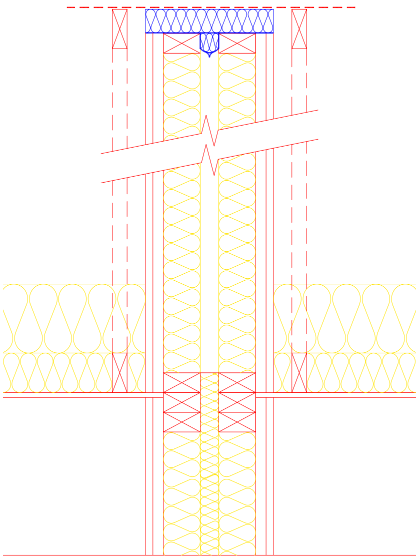
1. The vapour control layer forms the air barrier which is mechanically fixed to the timber frame and should be defect free, tape/seal all joints with an aluminised tape
2. Seal the corner joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Construction details

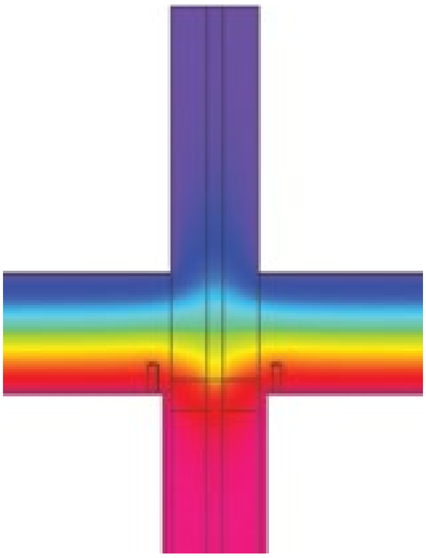
Timber frame

Junction with a party wall gable, insulation at ceiling level

Cross section



Isothermal image



Linear thermal transmittance (psi value)
Ψ = 0.065

Accredited Detail psi value
Ψ = 0.12

Temperature factor
f = 0.990

Construction details

Party wall

1. 90mm timber frame fully filled with 90mm Earthwool FrameTherm Roll 40
2. Interframe void full filled with 60mm Earthwool Timber Frame Party Wall Slab
3. 300mm cavity barrier at junction with roof
4. Wall finish of 12.50 + 19mm standard plasterboard

Thermal performance

1. Ensure Earthwool FrameTherm Roll 40 fully fills the timber stud void and is in intimate contact with all timber members, sheathing board and vapour control layer
2. Ensure void between party wall timber studs is completely filled with Earthwool FrameTherm Roll 40
3. Ensure the interframe void is completely filled with Earthwool Timber Frame Party Wall Slab and it is in intimate contact with the Earthwool FrameTherm Roll 40 between the party wall timber studs
4. Ensure Earthwool Timber Frame Party Wall Slab is in intimate contact with the cavity barrier at the head of the party wall
5. Ensure Earthwool Loft Roll 44 is in intimate contact with the party wall finish in the roof void and for the full length of the party wall

Cavity barriers

1. Ensure cavity carrier is installed over the head plates for the full width of the party wall. Cavity barrier should be held in compression between the head of the wall and the roof tile underlay/roof tiles
2. Ensure all joints in cavity barriers are fully closed

Air barrier

1. The plasterboard sheets forms the air barrier, all penetrations in the air barrier should be sealed with a flexible sealant
2. Seal the wall to ceiling joint between the plasterboard sheets with a flexible sealant
3. All penetrations in the air barrier/vapour control layer should be sealed with an aluminised tape

Roof

1. 100mm Earthwool Loft Roll 44 between 100mm timber joists, overlaid with 2 layers of 170mm Earthwool Loft Roll 44
2. Ceiling finished with 12.50mm standard plasterboard

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