

### INTRODUCTION

The details in this section have been developed for a range of externally insulated single leaf masonry/cavity block wall constructions. The Introduction document "Limiting Thermal Bridging and Air Infiltration Acceptable Construction Details" provides practical information with regards to implementation of these details onsite. This guide should be read in conjunction with these details. Details are given for the junctions with a range of roof, ground floor and internal floor types, as well as at external wall opens.

The details are indicative. They focus on the issues of thermal performance and air tightness. Other issues are not considered fully. Insulation thicknesses for the main building elements have not been provided, as these depend on the thermal properties of the materials chosen, as well as on the desired U-value.

Masonry materials shown on the drawings are blocks and bricks. Other masonry materials, including precast and insitu concrete, may be substituted without loss of thermal performance or increased technical risk. The use of thermally resistant materials, beyond that depicted, will naturally increase the thermal performance of the building fabric.

All materials and workmanship are to be installed in accordance with Technical Guidance Document D "Materials and workmanship."

All details are shown with a thin coat render system for simplification. However, a range of cladding may be used without any loss of thermal performance. All external cladding systems should be proper materials as defined in Part D. It is recommended that insulating and cladding components are part of a system to ensure compatibility.

These diagrams illustrate good practice for design and construction of interfaces only in respect to ensuring thermal performance and air barrier continuity. The guidance must be implemented with due regard to all other requirements imposed by the Building Regulations.

Where these details are used for the Target U Values and constructions described in Table D2 of TGD L 2011 the psi values published in Table D2 may be used to calculate the actual Thermal Bridging heat loss for a dwelling for key thermal bridging junctions in that dwelling.

## (2) WALLS:- EXTERNAL INSULATION SOLID MASONRY / CAVITY BLOCK WALLS

TGDL 2011

Table D2	Section 2 - External Insulation	Target U-Values	
Junction detail identifier 2011 Edition	Junction detail	U = 0.21 W/m <sup>2</sup> K <sup>1,3</sup> (roof U = 0.16) (floor U = 0.21)	U = 0.15 W/m <sup>2</sup> K <sup>2,3</sup> (roof U = 0.14) (floor U = 0.15)
		ψ-value (W/mK)	ψ-value (W/mK)
<b>Section 2</b>	<b>Details</b>		
2.01	Ground Floor - Insulation above slab with lightweight block	0.131	0.145
2.01a	Ground Floor - Insulation above slab	0.214	0.259
2.02	Ground Floor - Insulation below slab with lightweight block	0.162	0.172
2.02a	Ground Floor - Insulation below slab	0.235	0.247
2.03	Timber Suspended Ground Floor with lightweight block	0.158	0.204
2.03a	Timber Suspended Ground Floor	0.297	0.368
2.04	Concrete Intermediate Floor within a dwelling	0.001	0.000
2.04a	Concrete Separating Floor between dwellings <sup>5</sup>	0.071	0.048
2.05	Masonry Separating Wall - plan <sup>6</sup>	0.049	0.033
2.06	Masonry Partition Wall	0.000	0.000
2.07	Stud Partition Wall	0.000	0.000
2.08/2.09	Eaves -Unventilated/Ventilated roof space	0.067	0.074
2.10.1/2.11.1	Eaves -Unventilated/Ventilated - Insulation between and under rafters - Dormer	0.050	0.055
2.12.1	Eaves - Unventilated - Insulation between and over rafters - Pitched ceiling	0.016	0.031
2.12.2	Eaves - Unventilated/Ventilated - Insulation between and under rafters - Pitched with flat ceiling	0.020	0.017
2.13	Eaves - Unventilated - Insulation between and over rafters -	0.013	0.027
2.14	Ventilated Roof - Attic floor level	0.347	0.335
2.15/2.16	Gable - Insulation between and under rafters - Unventilated/Ventilated rafter void	0.091	0.087
2.17	Gable - Insulation between and over rafters - Unventilated rafter void	0.131	0.106
2.18	Flat Roof - Eaves	0.046	0.045
2.19	Flat Roof - Parapet	0.349	0.327
2.20	Ope - Lintel	0.097	0.098
2.21	Ope - Jamb	0.088	0.091
2.22	Sill	0.149	0.109
2.23.1	Corner	0.099	0.070
2.23.2	Inverted Corner	-0.141	-0.096
<b>Section G</b>	<b>General Details</b>		
G.01.1	Masonry Separating Wall Head - Section <sup>6</sup>	0.511	0.484
G.01.2	Masonry Separating Wall Head - Section <sup>6</sup>	0.488	0.458
G.05.1	Solid Masonry Separating Wall through ground floor <sup>6</sup>	0.201	0.240
G.05.2	Solid Masonry (narrow) Partition Wall through ground floor	0.138	0.150
<b>Other Details</b>			
2.B.1	Balcony within dwelling <sup>4</sup>	0.000	0.000
2.B.2	Balcony between dwelling <sup>4,5</sup>	0.020	0.020

- ψ values for a Target U-value for the wall of 0.21 W/m<sup>2</sup>K can be used for a range of U-values down to 0.18 W/m<sup>2</sup>K for the construction type specified. The U-values of the flanking elements to the wall can vary from the flanking element target U-value as follows: Pitched roof insulation on slope, insulation on ceiling = 0.13 to 0.16 W/m<sup>2</sup>K; Flat Roof = 0.16 to 0.2 W/m<sup>2</sup>K; Ground Floor = 0.16 to 0.21 W/m<sup>2</sup>K.
- ψ values for a Target U-value for the wall of 0.15 W/m<sup>2</sup>K can be used for a range of U-values from 0.12 W/m<sup>2</sup>K to 0.17 W/m<sup>2</sup>K for the construction type specified. The U-values of the flanking elements to the wall can vary from the flanking element target U-value as follows: Pitched roof insulation on slope, insulation on ceiling 0.11 to 0.16 W/m<sup>2</sup>K; Flat Roof = 0.11 to 0.17 W/m<sup>2</sup>K; Ground Floor = 0.12 to 0.18.
- Where two building elements have one U-value above its target while the other is below its target U-value, the aggregate percentage change from the respective target U-values in the table should not exceed +20% for the Psi (ψ) value to be valid, i.e. if for the 0.15 U-value wall, if the U-value was increased by 10% above the wall target U-value (from 0.15 to 0.165), then the roof U-value could be at most 10% below the roof target U-value (from 0.14 to 0.126), because the aggregate change would then be 20%.
- This is an externally supported balcony (the balcony slab is not a continuation of the floorslab) where the wall insulation is continuous and not bridged by the balcony slab.
- Value of Ψ is applied to each dwelling.
- Psi value is for whole junction. Half the value should be applied to each dwelling on either side of the junction.

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

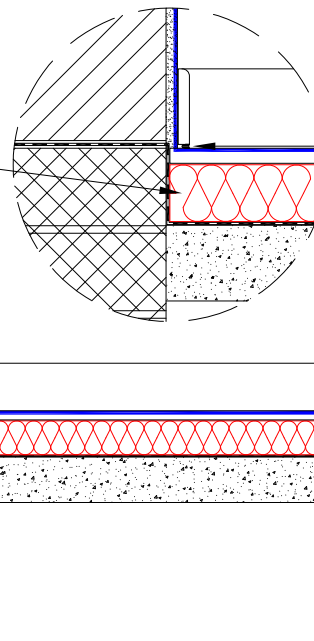
CHECKLIST  
(TICK ALL)

Floor insulation to tightly abut blockwork wall

Ensure wall insulation is installed at least 225 mm below top of floor insulation

Ensure block with a maximum Thermal Conductivity of 0.20 W/mK in the direction of heat flow is used and that block is suitable for use in foundations

225 mm min.



Seal between wall and floor air barrier with a flexible sealant OR seal gap between skirting board and floor with a flexible sealant

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

The wall insulation installed below the wall DPC must be fit for purpose with regards to water absorption

Material on top of floor insulation can be screed or floating floor

Detail applicable:- Ground-bearing floor; raft foundation; in-situ suspended ground floor slab; pre-cast suspended ground floor. Insulation above slab, with timber floor finish

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

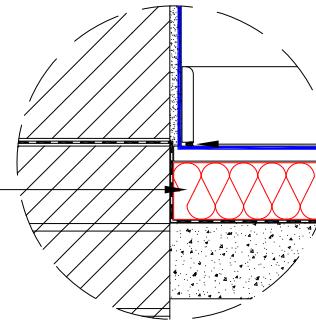
CHECKLIST  
(TICK ALL)

Floor insulation to tightly abut blockwork wall

Ensure wall insulation is installed at least 430 mm below ground level  
R-value 4.0 m<sup>2</sup>K/W



430 mm





Seal between wall and floor air barrier with a flexible sealant OR seal gap between skirting board and floor with a flexible sealant

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

The wall insulation installed below the wall DPC must be fit for purpose with regards to water absorption

Material on top of floor insulation can be screed or floating floor

Detail applicable:- Ground-bearing floor; raft foundation; in-situ suspended ground floor slab; pre-cast suspended ground floor. Insulation above slab, with timber floor finish

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

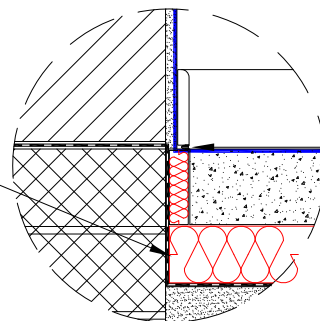
Floor insulation to tightly abut  
blockwork wall

Install perimeter insulation with a Min.  
R-value of 1.1 m<sup>2</sup> K/W

Ensure wall insulation is installed at  
least 225 mm below top of floor

Ensure block with a maximum  
Thermal Conductivity of 0.20 W/mK  
in the direction of heat flow is used  
and that block is suitable for use in  
foundations

225 mm min.



Seal between wall and floor air  
barrier with a flexible sealant OR seal  
gap between skirting board and floor  
with a flexible sealant

Seal all penetrations through air  
barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

The wall insulation installed below the wall DPC must be fit for purpose  
with regards to water absorption

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive  
tape around all openings, along top and bottom of wall, and at internal  
and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

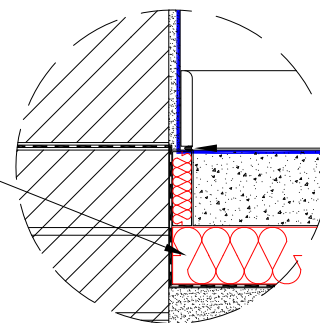
CHECKLIST  
(TICK ALL)

Floor insulation to tightly abut  
blockwork wall

Install perimeter insulation with a Min.  
R-value of 1.1 m<sup>2</sup> K/W

Ensure wall insulation is installed at  
least 430 mm below ground level  
R-value 4.0 m<sup>2</sup> K/W

430 mm



Seal between wall and floor air  
barrier with a flexible sealant OR seal  
gap between skirting board and floor  
with a flexible sealant

Seal all penetrations through air  
barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

The wall insulation installed below the wall DPC must be fit for purpose  
with regards to water absorption

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive  
tape around all openings, along top and bottom of wall, and at internal  
and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Pack gap between floor joist and blockwork wall with compressible insulation if over 25 mm; otherwise inject insulating expanding foam. Min. R-value of 0.63 m<sup>2</sup> K/W

Ensure wall insulation is installed at least 200 mm below top of floor insulation

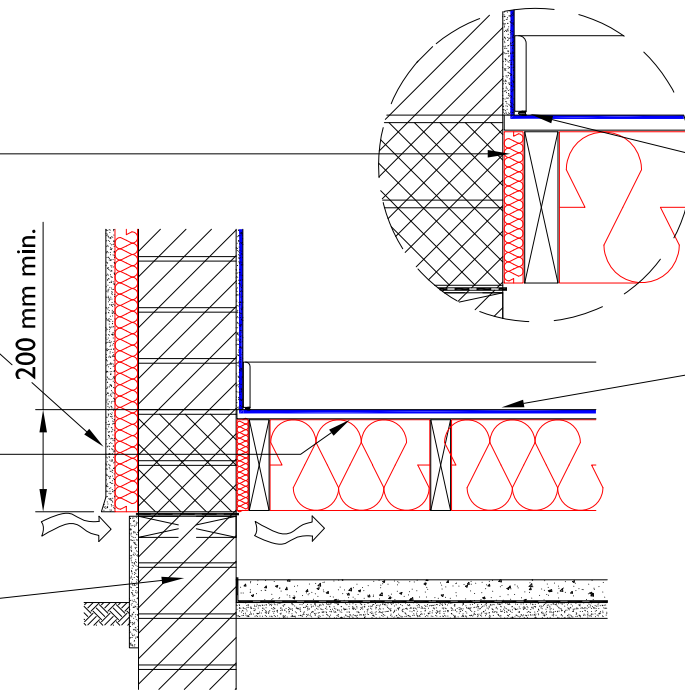
Ensure insulation is in contact with underside of timber flooring

Ensure block with a maximum Thermal Conductivity of .20 W/mK in the direction of heat flow is used and that block is suitable for use in foundations





200 mm min.



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal between wall and floor air barrier with a flexible sealant OR seal gap between skirting board and floor with a flexible sealant

Seal joints in timber floor with suitable glue. Fully support and fix any square edge joints in the decking to the joists

Seal all penetrations through air barrier using a flexible sealant

Provide similar air seals at all internal partitions





*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Support joists on tassel walls to avoid building-in to external walls

The wall insulation installed below the wall DPC must be fit for purpose with regards to water absorption

If injecting expanding foam between joist and external wall, take care to avoid bridging wall DPC

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes



**THERMAL PERFORMANCE**

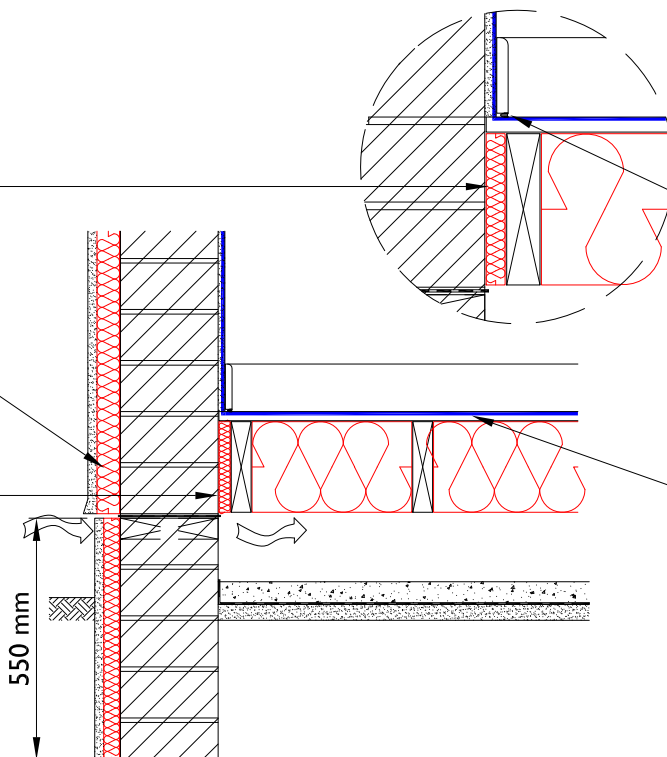
CHECKLIST  
(TICK ALL)

Pack gap between floor joist and blockwork wall with compressible insulation if over 25 mm; otherwise inject insulating expanding foam. Min. R-value of 0.63 m<sup>2</sup> K/W

Continue external insulation at least 750 mm below top of floor insulation

Ensure insulation is in contact with underside of timber flooring





**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal between wall and floor air barrier with a flexible sealant OR seal gap between skirting board and floor with a flexible sealant

Seal all penetrations through air barrier using a flexible sealant

Seal joints in timber floor with suitable glue. Fully support and fix any square edge joints in the decking to the joists

Provide similar air seals at all internal partitions





*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Support joists on tassel walls to avoid building-in to external walls

The wall insulation installed below the wall DPC must be fit for purpose with regards to water absorption

If injecting expanding foam between joist and external wall, take care to avoid bridging wall DPC

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

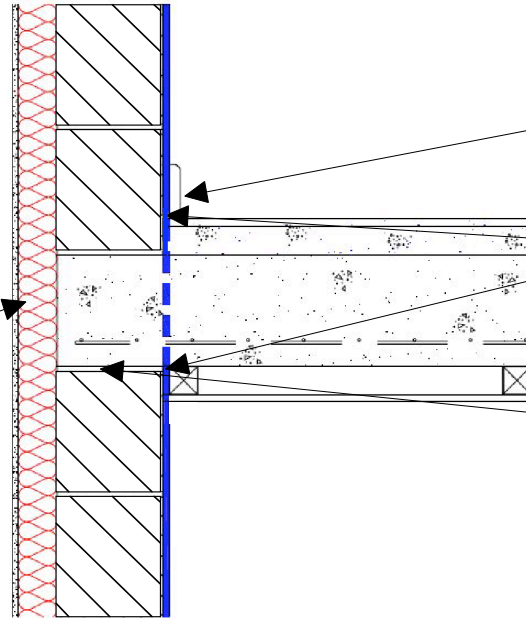


**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Continue wall insulation across floor abutment zone

Fire stopping to be provided at intermediate floor where necessary using suitable insulant as per certification details.



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal gap between skirting board and floor with a flexible sealant

Seal between the wall air barrier and the top and underside of the floor slab. (Dotted blue line is notional, to depict air barrier continuity through floor zone.)

Ensure continuous mortar bed between floor slab and top of blockwork wall

Seal all penetrations through air barrier using flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

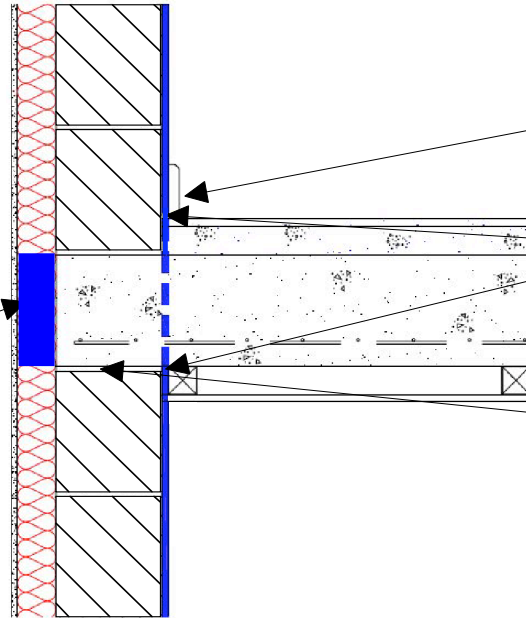
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Continue wall insulation across floor abutment zone



Fire stopping to be provided at floor where necessary using suitable insulant as per certification details.



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)



Seal gap between skirting board and floor with a flexible sealant



Seal between the wall air barrier and the top and underside of the floor slab. (Dotted blue line is notional, to depict air barrier continuity through floor zone.)



Ensure continuous mortar bed between floor slab and top of blockwork wall



Seal all penetrations through air barrier using flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Detail is diagrammatic only. Acoustic insulation should be provided. See TGD-E

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**



Wet-finish plaster coat, or



Masonry wall with scratch coat, and finished with plasterboard, or



Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or



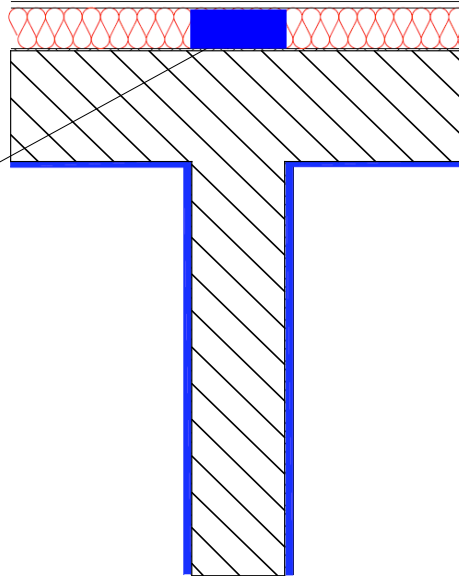
Airtightness membrane and tapes

**THERMAL PERFORMANCE**  
CHECKLIST  
(TICK ALL)

Continue external wall insulation  
across abutment zone



Fire stopping to be provided opposite separating  
wall in external insulation using suitable insulant  
as per certification details.



**AIR BARRIER - CONTINUITY**  
CHECKLIST  
(TICK ALL)



Seal all penetrations through air  
barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

See TGD-B for guidance on fire safety and TGD-E for guidance on  
sound insulation

Read this detail in conjunction with detail G-01, Masonry Separating Wall  
Head

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**



Wet-finish plaster coat, or



Masonry wall with scratch coat, and finished with plasterboard, or



Plasterboard on dabs or battens, with continuous ribbon of adhesive  
tape around all openings, along top and bottom of wall, and at  
internal and external corners, or

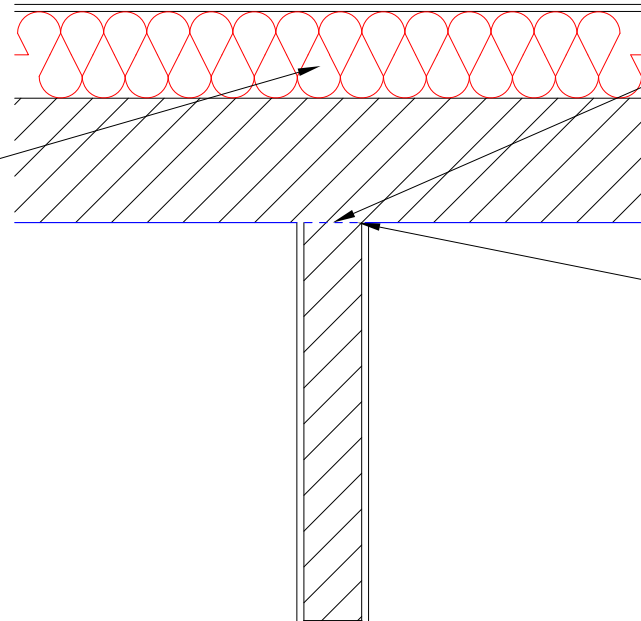


Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Continue external wall insulation across abutment zone



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

When partition wall is built later than external wall, ensure air barrier continuity across junction

Seal between air barrier on external wall and the blockwork, to the partition wall. (Dotted blue line is notional to depict air barrier continuity through partition, depending on whether partition toothed into external wall or braced with ties)

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Read this detail in conjunction with detail G-02, Blockwork Partition Head

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

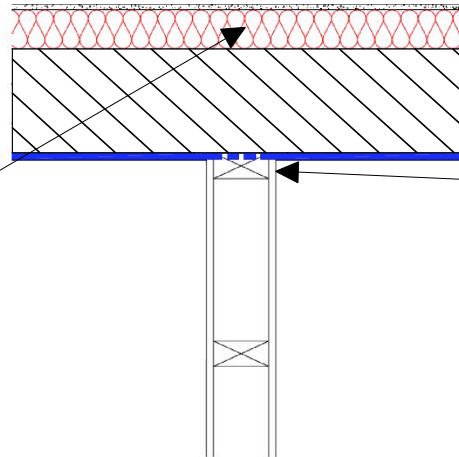
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Continue external wall insulation  
across abutment zone



Install external air barrier before  
stud; or install barrier before  
partition lining and seal all gaps  
between air barrier and stud with  
flexible sealant. (Dotted blue line  
depicts air barrier continuity through  
partition stud member)



Seal all penetrations through air  
barrier using a flexible sealant



*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Read this detail in conjunction with details G-03, Timber Stud Partition  
Head, or G-04, Metal Stud Partition Head as appropriate

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive  
tape around all openings, along top and bottom of wall, and at  
internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

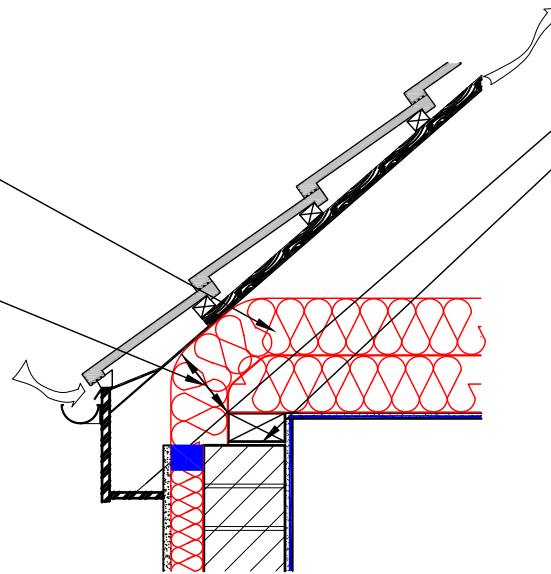
CHECKLIST  
(TICK ALL)

Ensure continuity of insulation throughout junction

Ensure full depth of insulation between and over joists abuts eaves insulation

Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value across the insulation thickness of 4.30 m<sup>2</sup> K/W

Fire stopping to be provided where necessary using suitable insulant as per certification details



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Bed wall plate on continuous mortar bed

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Use of over joist and under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist

Use vapour permeable roof underlay to be used in strict accordance with approved third party certification

Eaves insulation must not prevent free water drainage below the tiling battens

Read this detail in conjunction with detail 2-14, Gable - Unventilated Rafter Void for joist adjacent to gable wall

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

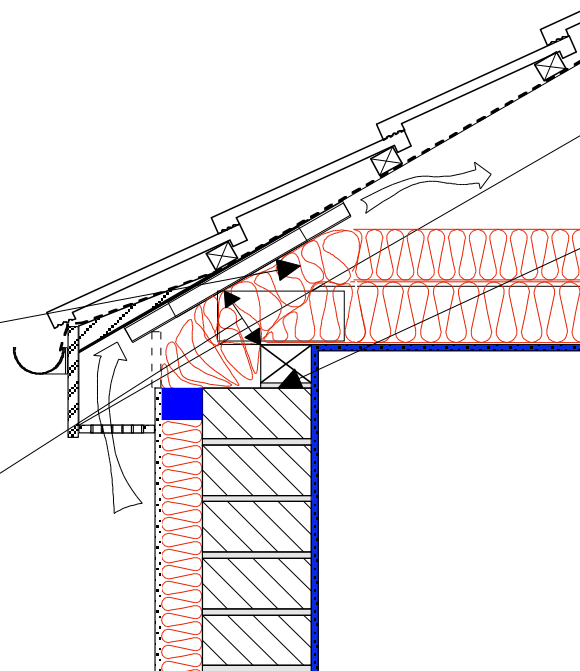
CHECKLIST  
(TICK ALL)

Ensure continuity of insulation throughout junction

Ensure full depth of insulation between and over joists extends to inner edge of wall plate

Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value across the insulation thickness of 4.30 m<sup>2</sup> K/W

Fire stopping to be provided where necessary using suitable insulant as per certification details.



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Bed wall plate on continuous mortar bed

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Thermal performance of junction can be improved by incorporating an eaves wind barrier (plywood, OSB, softboard or other suitable material) around insulation to be sealed to connect with the ventilator strip thereby mitigating wind chill from the vent inlet in the eaves

Use of over joist insulation is considered best practice, as it eliminates the cold bridge caused by the joist

Use a proprietary eaves ventilator to ensure ventilation in accordance with BS5250. Installation of the eaves ventilator must not prevent free water drainage below the tiling battens

Read this detail in conjunction with detail 2-14, Gable at Attic Floor Level

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

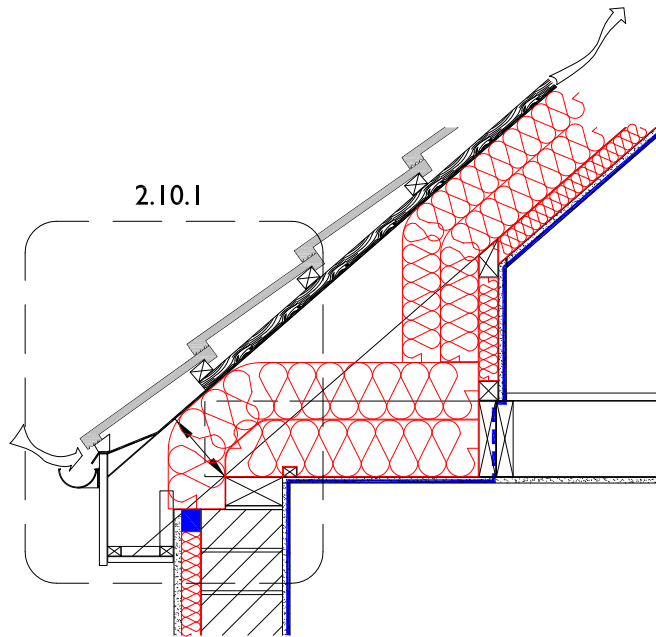


**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

- Ensure continuity of insulation throughout junction
- Ensure insulation is installed tightly between rafters and is in contact with under-rafter insulation
- Ensure full depth of insulation between and over joists abuts eaves insulation
- Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value across the insulation thickness of 4.30 m<sup>2</sup> K/W

Fire stopping to be provided where necessary using suitable insulant as per certification details



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Bed wall plate on continuous mortar bed
- Install double, full depth timber nogging between floor joists, and seal between nogging, ceiling and upper stud wall with a flexible sealant. (Dotted blue line is notional, to depict air barrier continuity through noggings.)
- Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant
- Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Vapour permeable roof underlay to be used in strict accordance with approved third party certification  
Installation of the eaves insulation must not prevent free water drainage below the tiling battens  
If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.  
Use of over joist and under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist/rafter  
Read this detail in conjunction with detail 2-15, Gable - Unventilated Rafter Void

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

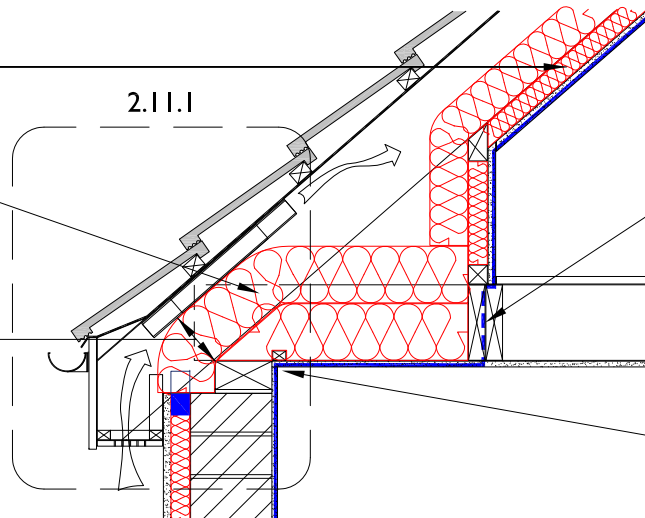
- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

- Ensure continuity of insulation throughout junction
- Ensure insulation is installed tightly between rafters and is in contact with under-rafter insulation
- Ensure full depth of insulation between and over joists abuts eaves insulation
- Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value of 4.30 m<sup>2</sup> K/W

**Fire stopping to be provided where necessary using suitable insulant as per certification details**



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Bed wall plate on continuous mortar bed
- Install double, full depth timber nogging between floor joists, and seal between nogging, ceiling and upper stud wall with a flexible sealant. (Dotted blue line is notional, to depict air barrier continuity through noggings.)
- Seal all penetrations through air barrier using a flexible sealant
- Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Thermal performance of junction can be improved by incorporating an eaves wind barrier (plywood, OSB, softboard or other suitable material) around insulation to be sealed to connect with the ventilator strip thereby mitigating wind chill from the vent inlet in the eaves  
Use a proprietary eaves ventilator to ensure ventilation in accordance with BS5250. Installation of the eaves ventilator must not prevent free water drainage below the tiling battens  
If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.  
Use of over joist and under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist/rafter  
Read this detail in conjunction with detail 2-16, Gable - Ventilated Rafter Void

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

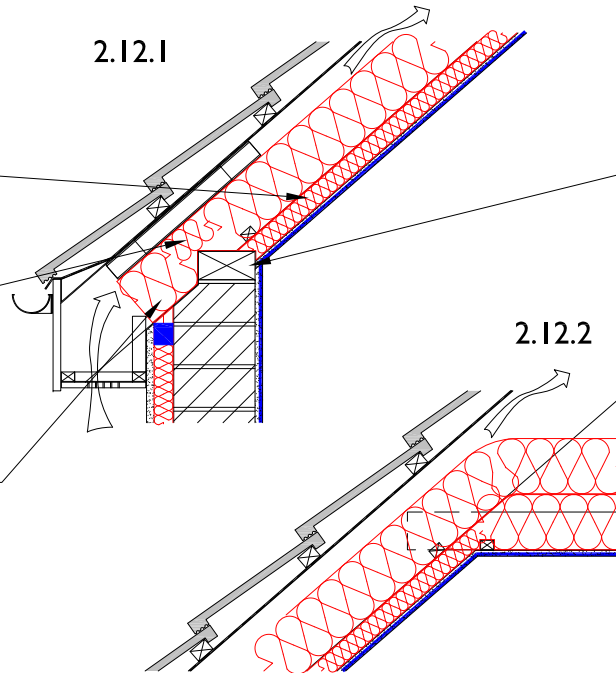
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

- Ensure continuity of insulation throughout junction
- Ensure insulation is installed tightly between rafters and is in contact with under-rafter insulation
- Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value across the insulation thickness of 4.30 m<sup>2</sup> K/W
- Ensure full depth of insulation between and below rafters abuts eaves insulation

Fire stopping to be provided where necessary using suitable insulant as per certification details

2.12.1



2.12.2

**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Bed wall plate on continuous mortar bed
- Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant
- Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Thermal performance of junction can be improved by incorporating an eaves wind barrier (plywood, OSB, softboard or other suitable material) around insulation to be sealed to connect with the ventilator strip thereby mitigating wind chill from the vent inlet in the eaves  
Use a proprietary eaves ventilator to ensure ventilation in accordance with BS5250. Installation of the eaves ventilator must not prevent free water drainage below the tiling battens  
If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.  
Use of over joist and under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist/rafter  
Read this detail in conjunction with detail 2-16, Gable - Ventilated Rafter Void

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

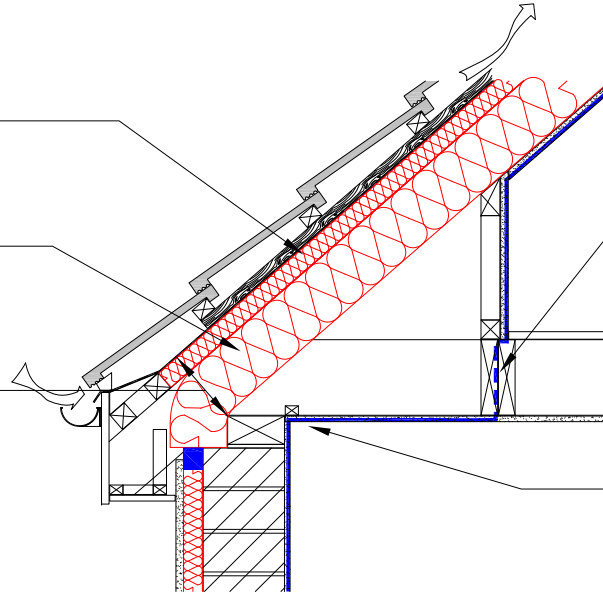
- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

- Ensure continuity of insulation throughout junction
- Ensure insulation is installed tightly between rafters and is in contact with over-rafter insulation
- Ensure full depth of insulation between and over joists abuts eaves insulation
- Ensure gap between wall plate and proprietary eaves vent is completely filled with insulation having a min. R-value across the insulation thickness of 4.30 m<sup>2</sup> K/W

Fire stopping to be provided where necessary using suitable insulant as per certification details



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Bed wall plate on continuous mortar bed
- Install double, full depth timber nogging between floor joists, and seal between nogging, ceiling and upper stud wall with a flexible sealant. (Dotted blue line is notional, to depict air barrier continuity through noggings.)
- Seal all penetrations through air barrier using a flexible sealant
- Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

- Vapour permeable roof underlay to be used in strict accordance with approved third party certification
- If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.
- Use of over-rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist/rafter
- Read this detail in conjunction with detail 2-17, Gable - Insulation between and over rafters

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

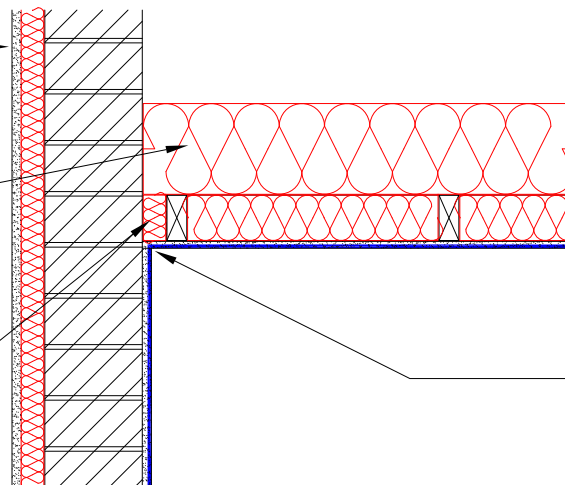
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Continue wall insulation to at least 1 meter above top of attic insulation

Ensure full depth of insulation between and over joists extends to inner edge of wall

Pack compressible insulation between last truss or joist, and gable wall. Min. R-value across the insulation thickness of 1.25 m<sup>2</sup> K/W



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Thermal performance of junction can be improved significantly by using blockwork with a thermal conductivity of  $\leq 0.20$  W/mK in direction of heat flow in wall at roof level or alternatively by running insulation of R-value 1.5 m<sup>2</sup>K/W vertically up internal face of gable wall to a height of 450 mm above ceiling level

Use of over joist insulation is considered best practice, as it eliminates the cold bridge caused by the joist

Where different block materials are being used consideration should be given to avoid cracking in plaster at the junction between the block materials

Read this detail in conjunction with details 2-08: Eaves - Ventilated Attic, or 2-09: Eaves - Unventilated Attic, as appropriate

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

Wet-finish plaster coat, or

Masonry wall with scratch coat, and finished with plasterboard, or

Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or

Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

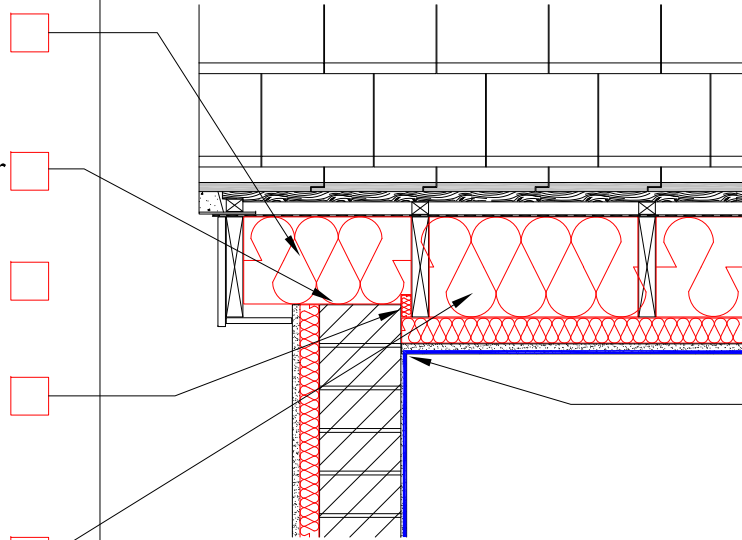
Fit insulation over top of wall within gable ladder. Fully fill void unless underlay requires to be draped, when 25 mm void must be maintained. A min. R-value of 4.35 m<sup>2</sup> K/W is required.

Ensure top of wall is levelled with mortar to correct pitch, and that wall insulation is taken up level with wall top

Ensure insulation continuity throughout junction

Ensure full depth of insulation between and under rafters extends to wall. Pack gap between rafter and wall with compressible insulation

Ensure insulation is installed tightly between rafters and is in contact with under rafter insulation



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Vapour permeable roof underlay to be used in strict accordance with approved third party certification

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.

Use of under-rafter insulation is considered best practice, as it eliminates the cold bridge caused by the rafter

Read this detail in conjunction with detail 2-11: Eaves - Insulation between and under rafters - Unventilated Rafter Void

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes



**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

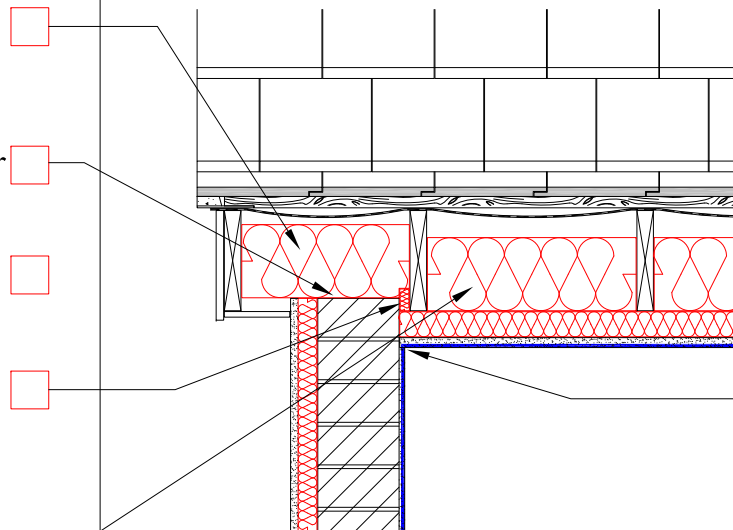
Fit insulation over top of wall within gable ladder. Fully fill void unless underlay requires to be draped, when 25 mm void must be maintained. A min. R-value of 4.35 m<sup>2</sup> K/W is required.

Ensure top of wall is levelled with mortar to correct pitch, and that wall insulation is taken up level with wall top

Ensure insulation continuity throughout junction

Ensure full depth of insulation between and under rafters extends to wall. Pack gap between rafter and wall with compressible insulation

Ensure insulation is installed tightly between rafters and is in contact with under rafter insulation



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Ensure ventilation to roof build-up in accordance with BS5250

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard

Use of under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the rafter

Read this detail in conjunction with detail 2-10, : Eaves - Ventilated Rafter Void, or 2-12: Eaves - Ventilated Rafter Void - Pitched ceiling, as appropriate

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes



**THERMAL PERFORMANCE**

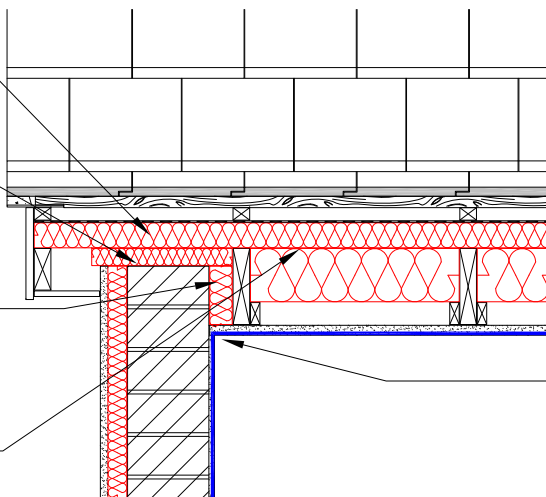
CHECKLIST  
(TICK ALL)

Fit insulation over top of wall within gable ladder. Fully fill void between wall head and over-rafter insulation. A min. R-value of 2.10 m<sup>2</sup> K/W is required.

Ensure top of wall is levelled with mortar to correct pitch, and that wall insulation is taken up level with wall top.

Ensure full depth of insulation between and over rafters extends to wall. Pack gap between rafter and wall with compressible insulation.

Ensure insulation is installed tightly between rafters and is in contact with over-rafter insulation.



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Vapour permeable roof underlay to be used in strict accordance with approved third party certification

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.

Use of over-rafter insulation is considered best practice, as it eliminates the cold bridge caused by the rafter

Read this detail in conjunction with detail 2-13, Eaves - Insulation between and over rafters

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

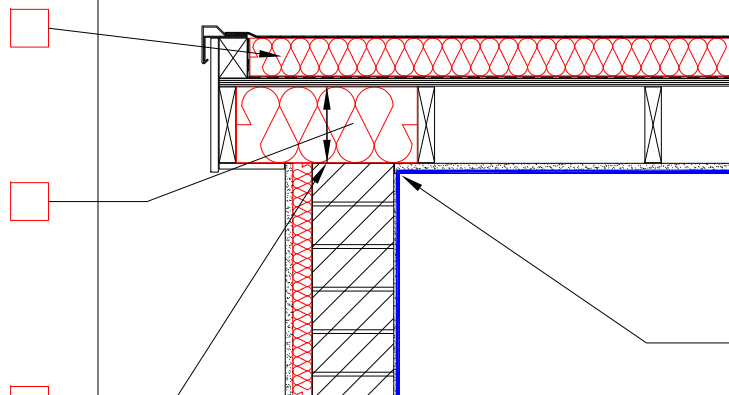
**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Ensure full depth of over deck insulation extends to roof edge

Fit insulation over wall top within gable ladder. Fully fill void, ensuring that insulation is installed tightly between joists and is in contact with roof deck. A min. R-value of 5.00 m<sup>2</sup> K/W

Ensure wall top is level and that wall insulation is taken up level with wall top



Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

BS5250 requires vapour control layer to be installed between deck and insulation

Turn up vapour control layer at edge of roof insulation, lap with roof waterproofing layer, and seal

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

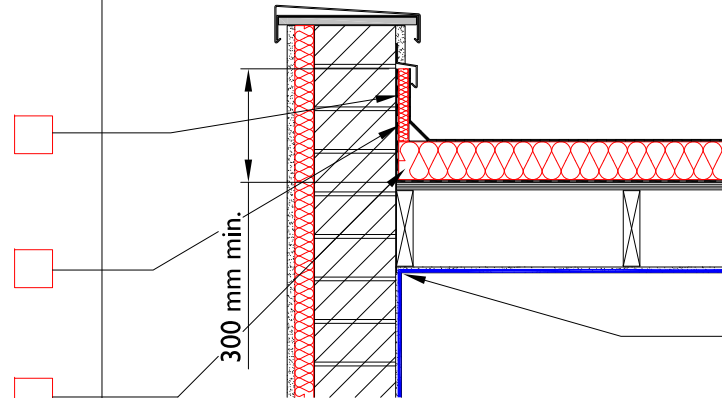
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Insulation upstand having a minimum R-value of 1.10 m<sup>2</sup> K/W (in heat flow direction perpendicular to wall surface) around parapet.

300 mm minimum between top of insulation upstand and bottom of horizontal roof insulation

Ensure roof insulation tightly abuts inner face of parapet wall



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

Fix ceiling first, and seal all gaps between ceiling and masonry wall with either plaster, adhesive or flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

Thermal performance of junction can be improved significantly by using blockwork with a thermal conductivity of  $\leq 0.20$  W/mK in direction of heat flow in external wall at roof level or alternatively by extending insulation vertically up internal face of parapet wall to a height of 450 mm.

BS5250 requires vapour control layer to be installed between deck and insulation

Turn up vapour control layer at edge of roof insulation, lap with roof waterproofing layer, and seal

OPTION  
(TICK ONE)

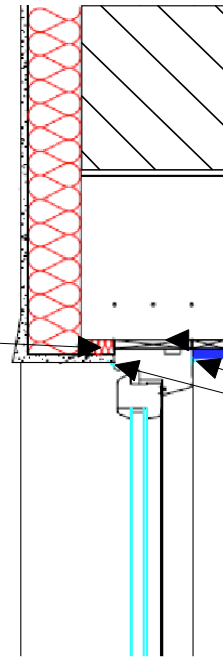
**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Ensure wall insulation having a min.  
R-value of 0.6 m<sup>2</sup> K/W overlaps frame  
/ packing piece



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Seal all penetrations through air barrier using a flexible sealant
- Fill gap between frame / packer and blockwork with expanding foam or flexible sealant
- Apply flexible sealant to junctions of frame with external render and with internal air barrier

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

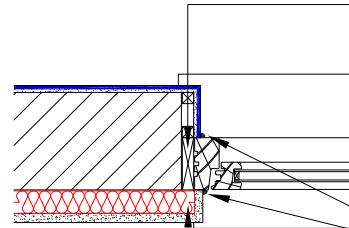
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Ensure wall insulation having a minimum R-value of 0.60 m<sup>2</sup> K/W overlaps frame / packing piece



Fill gap between frame / packer and blockwork with expanding foam or flexible sealant

Seal all penetrations through air barrier using a flexible sealant

Apply flexible sealant to junctions of frame with external render and with internal air barrier

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

OPTION  
(TICK ONE)

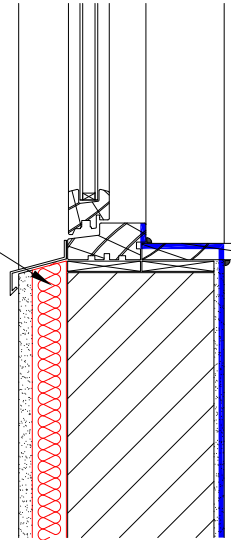
**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

Install insulation to underside of sill



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

- Fill gap between frame / packer and blockwork with expanding foam or flexible sealant
- Seal all penetrations through air barrier using a flexible sealant
- Apply flexible sealant to junctions of frame with external render and with internal air barrier

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

OPTION  
(TICK ONE)

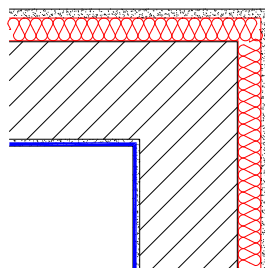
**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes

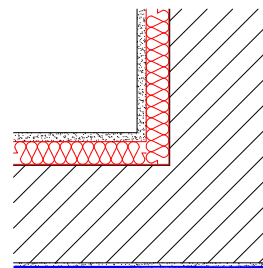
**THERMAL PERFORMANCE**

CHECKLIST  
(TICK ALL)

2.23.1



2.23.2



**AIR BARRIER - CONTINUITY**

CHECKLIST  
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant

*Complying with checklist will help achieve design air permeability*

**GENERAL NOTES**

OPTION  
(TICK ONE)

**AIR BARRIER - OPTIONS**

- Wet-finish plaster coat, or
- Masonry wall with scratch coat, and finished with plasterboard, or
- Plasterboard on dabs or battens, with continuous ribbon of adhesive tape around all openings, along top and bottom of wall, and at internal and external corners, or
- Airtightness membrane and tapes