

INTRODUCTION

This section shows appropriate details for light steel frame construction. 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 junctions with a range of roof, ground floor and internal floor types, as well as at external wall opes. The details within this section are valid for a range of steel frame wall thicknesses.

With steel frame, some insulation must be placed outside the frame to provide a thermal break and avoid condensation. **Warm frame construction** is where all the insulation is outside the frame. **Hybrid construction** is where insulation is included both outside the steel structure and in between the steel components. At least 33% of the thermal resistance should be provided outside the steel. With hybrid construction, the system manufacturer should provide a condensation risk analysis (in accordance with BS 5250) to ensure there is no risk of interstitial condensation. An internal vapour control layer is generally required. The details show warm frame construction but apply equally to hybrid construction.

Insulation thicknesses have not been provided as these depend on the thermal properties of the materials chosen together with the proposed U-value. It is important to choose appropriate tightly fitting materials. Generally, a rigid insulation material, which acts as an insulated sheathing board, is required outside the frame.

Details show a masonry outer leaf for simplification. The details are also appropriate for a range of other claddings subject to suitable detailing. Further variables are insulation and sheathing types, and internal lining type and thickness. All external cladding systems should be proper materials as defined in part D.

These diagrams illustrate good practice for design and construction of interfaces only in respect to ensuring thermal performance and air barrier continuity. Other issues are not considered fully. The guidance must be implemented with due regard to all other Building Regulations requirements. All materials and workmanship to be installed to Technical Guidance Document D "Materials and workmanship"

Where these details are used for the Target U Values and constructions described in Table D5 of TGD L 2011 the psi values published in Table D5 may be used to calculate the actual Thermal Bridging heat loss for a dwelling for the key thermal bridging junctions in that dwelling.

Table D5	Section 5 - Steel Frame Construction	Target U-Values	
		Hybrid steel frame U-value = 0.21 W/m ² K ^{1,3} (roof U = 0.16) (floor U = 0.21)	Hybrid steel frame with internal insulation U-value = 0.15 W/m ² K ^{2,3} (roof U = 0.14) (floor U = 0.15)
Junction detail identifier 2011 Edition	Junction detail	ψ-value (W/mK)	ψ-value (W/mK)
Section 5 Details			
5.01	Ground Floor - Insulation above slab	0.033	0.038
5.02	Ground Floor - Insulation below slab	0.141	0.106
5.03	Lightweight Intermediate Floor	0.021	0.055
5.04	Separating Wall (plan) ⁶	0.103	0.114
5.05	Separating Wall (section) ⁶	0.520	0.189
5.06	Stud Partition Wall	0.000	0.000
5.07/5.08	Eaves -Unventilated/Ventilated attic	0.030	0.026
5.09.1/5.10.1	Eaves -Unventilated/Ventilated - Insulation between and under rafters - Dormer	0.032	0.026
5.09.2/5.10.2	Eaves - Insulation between and under rafters - Unventilated/Ventilated void - Pitched Ceiling Dormer	0.014	0.013
5.11.1	Eaves - Ventilated - Insulation between and under rafters - Pitched Ceiling	0.011	0.012
5.11.2	Eaves - Ventilated - Insulation between and under rafters - Pitched with flat Ceiling	0.020	0.017
5.12	Eaves - Insulation between and over rafters - Unventilated rafter void	0.007	0.009
5.13	Ventilated and Unventilated Attic	0.111	0.049
5.14/5.15	Gable - Insulation between and under rafters - Unventilated/Ventilated rafter void	0.049	0.034
5.16	Gable - Insulation between and over rafters - Unventilated rafter void	0.055	0.037
5.17	Flat Roof - Eaves	0.054	0.043
5.18	Flat Roof - Parapet	0.093	0.054
5.19	Ope - Lintel	0.006	0.016
5.20	Ope - Jamb	0.023	0.019
5.21	Ope - Sill	0.012	0.021
5.22.1	Steel Separating Wall through ground floor	0.213	0.263
5.22.2	Steel Partition Wall through ground floor	0.125	0.148
5.23.1	Corner	0.075	0.029
5.23.2	Inverted Corner	-0.045	-0.043
Section G General Details			
G.01.1	Masonry Separating Wall Head - Section ⁶	0.511	0.484
G.01.2	Masonry Separating Wall Head - Section ⁶	0.488	0.458
G.05.1	Solid Masonry Separating Wall through ground floor	0.201	0.240
Other Details			
5.B.1	Balcony within dwelling ⁴	0.000	0.000
5.B.2	Balcony between dwelling ^{4,5}	0.020	0.020

- ψ values for a Target U-value for the wall of 0.21 W/m²K can be used for a range of U-values down to 0.18 W/m²K 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/m²K; Flat Roof = 0.16 to 0.2 W/m²K; Ground Floor = 0.16 to 0.21 W/m²K.
- ψ values for a Target U-value for the wall of 0.15 W/m²K can be used for a range of U-values from of 0.12 W/m²K to 0.17 W/m²K 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/m²K; Flat Roof = 0.11 to 0.17 W/m²K; 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

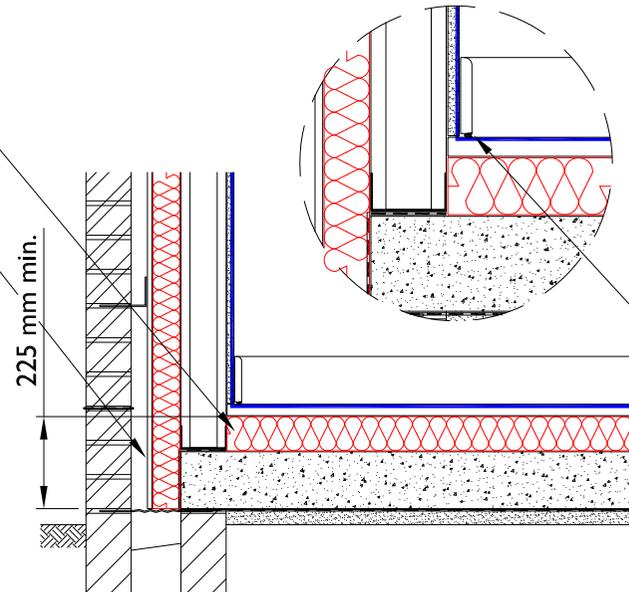
CHECKLIST
(TICK ALL)

Floor insulation must tightly abut inner face of upstand or steel frame

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

If screed is used instead of timber floor covering, install edge insulation with min. R-value of 0.75 m² K/W through depth of screed

Any upstand installed to floor edge to support steel framing must be formed with insulating blocks



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Ensure air barrier continuity between floor, and wall lining or sheathing layer. A flexible membrane installed below the steel channel may be used to provide this continuity

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

Seal all penetrations through air barrier using a flexible sealant or tape

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If sole plates are packed to level ensure that a continuous mortar grout is installed

Wall insulation installed below wall DPC must be fit for purpose as regards water absorption

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Some thermal bridging is inevitable in this location since robust bearing and holding down arrangements are normally required between frame and slab. Design should keep bridging within acceptable limits to reduce condensation risk

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

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, or
- Airtightness membrane and tapes

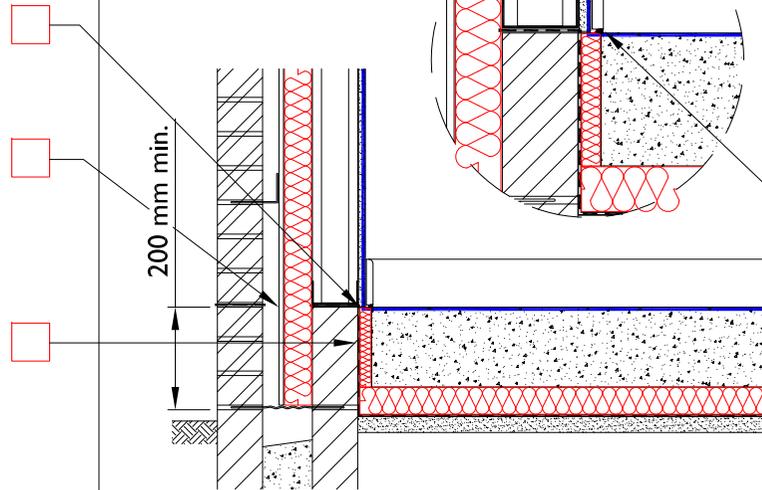
THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

Floor insulation must tightly abut inner face of upstand or steel frame

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

If screed is used instead of timber floor covering, install edge insulation with min. R-value of 1.09 m² K/W through depth of screed



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Ensure air barrier continuity between floor, and wall lining or sheathing layer. A flexible membrane installed below the steel channel may be used to provide this continuity

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

Seal all penetrations through air barrier using a flexible sealant or tape

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature
Some thermal bridging is inevitable in this location since robust bearing and holding down arrangements are normally required between frame and slab. Design should keep bridging within acceptable limits to reduce condensation risk
Detail applicable:- Ground-bearing floor; raft foundation; in-situ suspended ground floor slab; pre-cast suspended ground floor; concrete and screed. Insulation below slab

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, or
- Airtightness membrane and tapes

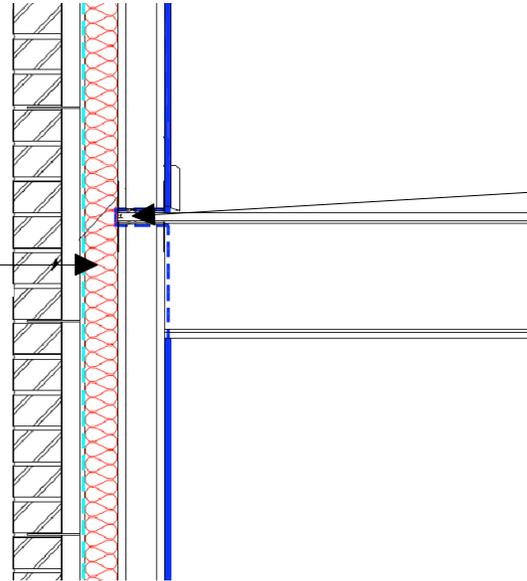
THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Continue wall insulation across floor
abutment zone



If using wall lining to form air barrier, ensure air barrier continuity between upper and lower wall linings. A flexible membrane installed around floor edge may be used to provide this continuity. (Dotted blue line depicts air barrier continuity through floor zone, and can be notional)



Seal all penetrations through air barrier using a flexible sealant or tape



Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS



Rigid insulation or board sheathing, or



Internal lining, for example, plasterboard, or



Airtightness membrane and tapes

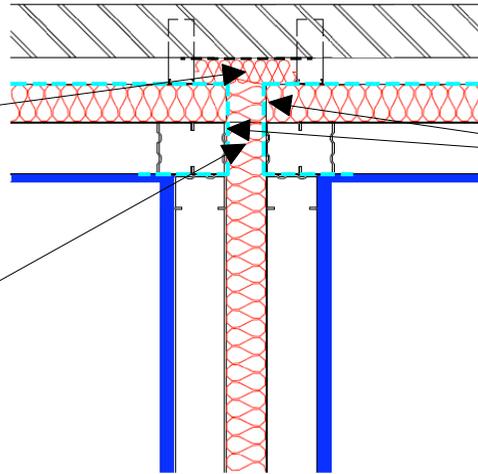
THERMAL PERFORMANCE

CHECKLIST (TICK ALL)

Continue external wall insulation across abutment zone. (Use appropriate material where cavity barrier or full-fill insulation is employed)

Ensure continuity of insulation between separating wall, and external wall construction

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



AIR BARRIER - CONTINUITY

CHECKLIST (TICK ALL)

Ensure air barrier continuity between sheathing layer, and wall lining or sheathing layer. A flexible membrane installed around the steel channels may be used to provide this continuity

Seal all penetrations through air barrier using a flexible sealant or tape

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

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

Read this detail in conjunction with detail 5.05, Separating Wall (section)

OPTION (TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

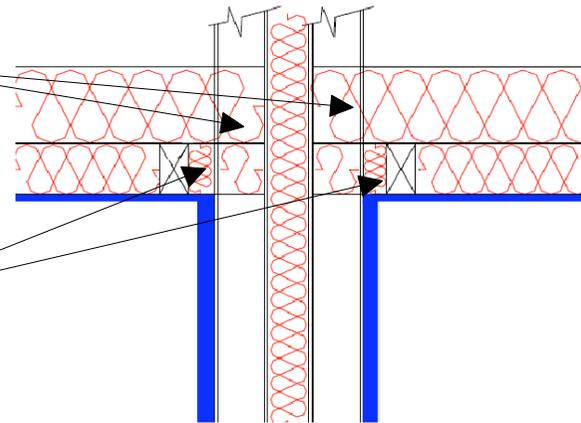
CHECKLIST (TICK ALL)

Ensure full depth of insulation between, over (or below) joists extends through stud framework

Pack compressible insulation between last truss / joist and separating wall



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



AIR BARRIER - CONTINUITY

CHECKLIST (TICK ALL)



Seal all penetrations through air barrier using a flexible sealant or tape



Seal between wall and ceiling linings

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

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

Read this detail in conjunction with detail 5.04, Separating Wall (plan)

OPTION (TICK ONE)

AIR BARRIER - OPTIONS



Internal lining, for example, plasterboard

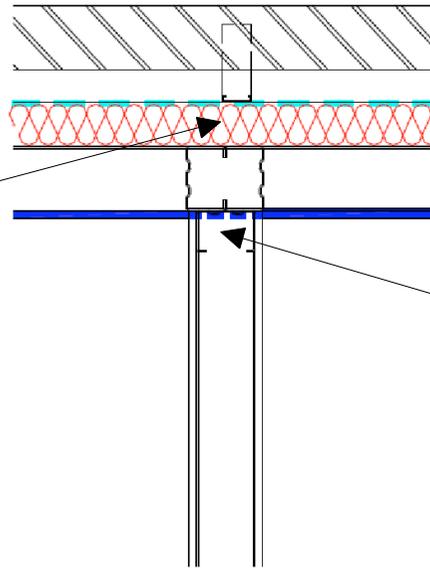


Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

Continue wall insulation across
abutment zone



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Seal all penetrations through air
barrier using a flexible sealant

If using wall lining to form air barrier,
ensure air barrier continuity across
partition wall. Tape seal over any
open holes in the end vertical
partition channel. (Dotted blue line
depicts air barrier continuity through
floor zone, and can be notional)

*Complying with checklist will help achieve design air permeability
and may effect a reduced testing regime.*

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read this detail in conjunction with detail G-04, Metal Stud Partition Wall (section)

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

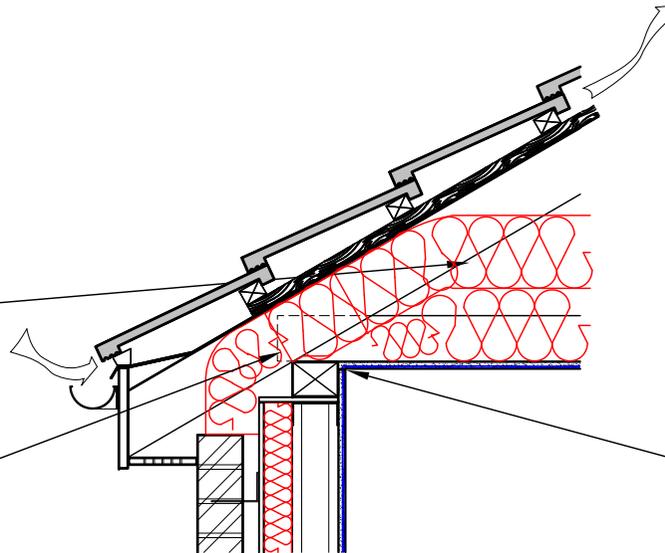
THERMAL PERFORMANCE

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 breathable underlay is completely filled with insulation having a min. R-value across the insulation thickness of 4.50 m² K/W



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

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

Use vapour permeable roof underlay in strict accordance with third party certification

Eaves insulation must not hinder free water drainage below tiling battens

Install suitable cavity barrier to manufacturers specification

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read this detail in conjunction with detail 5-13, Gable - Attic Floor Level

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST (TICK ALL)

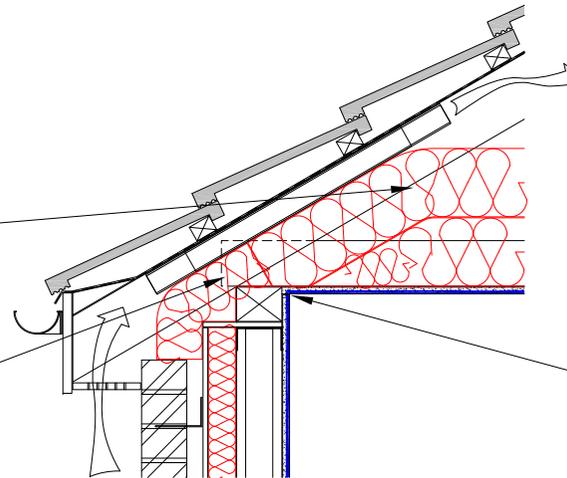
AIR BARRIER - CONTINUITY

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 4.50 m² K/W



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

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

Use vapour permeable roof underlay in strict accordance with third party certification

Eaves insulation must not hinder free water drainage below tiling battens

Install suitable cavity barrier to manufacturers specification

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read this detail in conjunction with detail 5-13, Gable - Attic Floor Level

OPTION (TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

Eaves - Insulation between and under rafters - Unventilated Rafter Void - Dormer

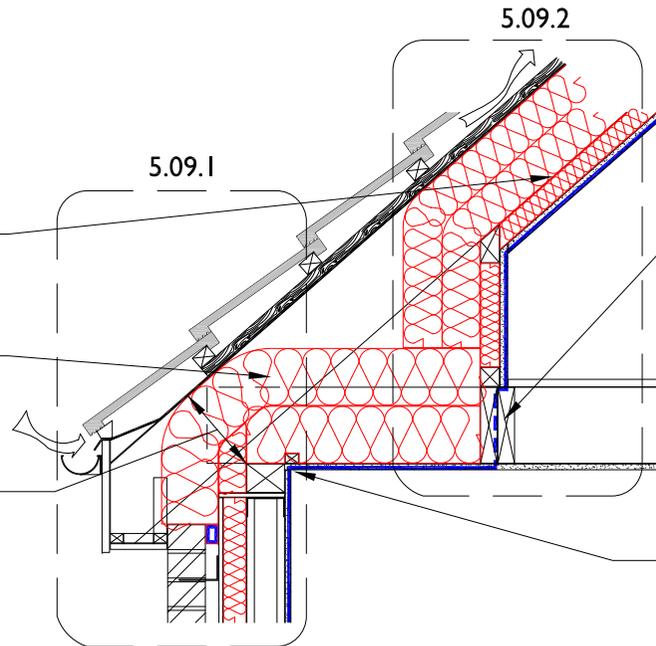
THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

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 guard is completely filled with insulation having a min. R-value across the insulation thickness of 4.58 m² K/W



- 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 or tape
- Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard
 Vapour permeable roof underlay to be used in strict accordance with approved third party certification
 Use of over joist and under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the joist/rafter
 Eaves insulation must not hinder free water drainage below tiling battens
 Install suitable cavity barrier to manufacturers specification
 If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature
 Read this detail in conjunction with details 5-13, Gable - Attic Floor Level and 5-15, Gable - Insulation between and under rafters - Unventilated Rafter Void

OPTION
(TICK ONE)

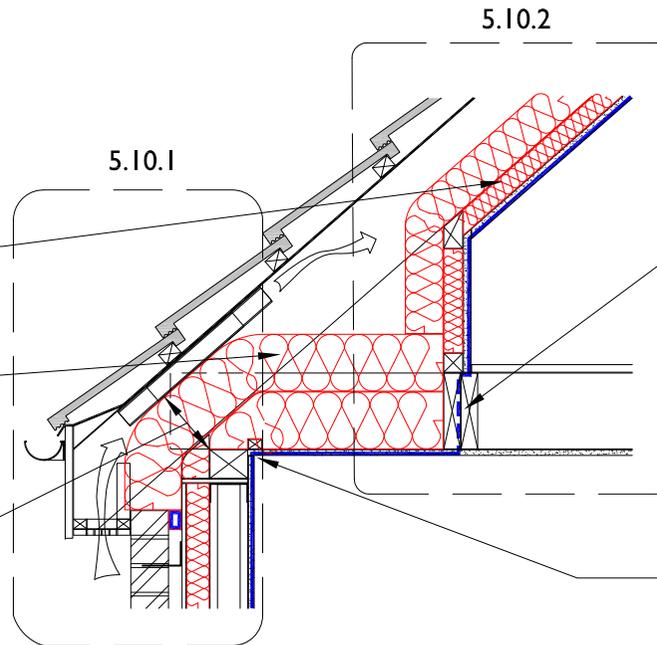
AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, 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 guard is completely filled with insulation having a min. R-value across the insulation thickness of 4.58 m² K/W



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- 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 or tape
- Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

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 eaves ventilator must not prevent free water drainage below tiling battens

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

Install suitable cavity barrier to manufacturers specification

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read this detail in conjunction with details 5-13, Gable - Attic Floor Level and 5-14, Gable - Insulation between and under rafters - Ventilated Rafter Void

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, or
- Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

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

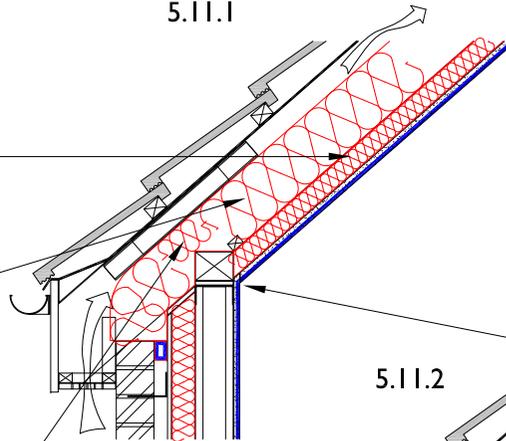
Ensure full depth of insulation between and under rafters abuts eaves insulation

Ensure continuity of insulation throughout junction

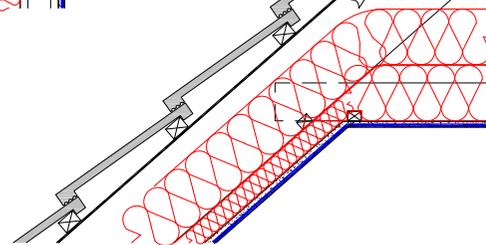
Ensure gap between wall plate and proprietary eaves guard is completely filled with insulation having a min. R-value across the insulation thickness of 4.70 m² K/W



5.11.1



5.11.2



Seal all penetrations through air barrier using a flexible sealant or tape



Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

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. Install suitable cavity barrier to manufacturers specification. If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature. Read this detail in conjunction with details 5-13, Gable - Attic Floor Level and 5-14, Gable - Insulation between and under rafters - Ventilated Rafter Void.

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS



Rigid insulation or board sheathing, or



Internal lining, for example, plasterboard, or

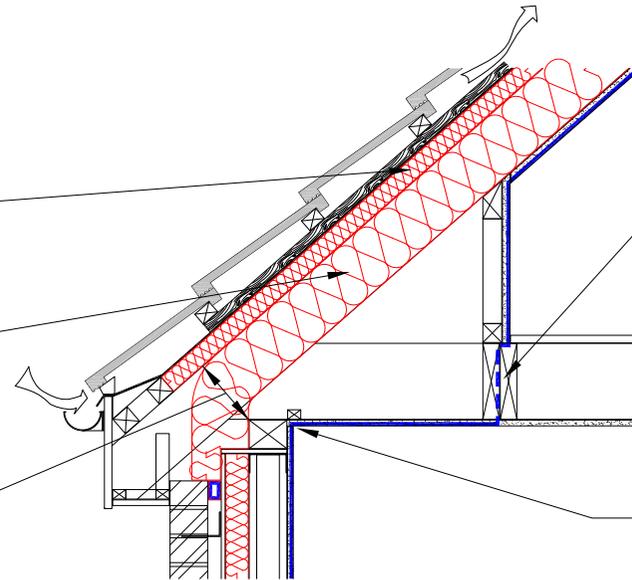


Airtightness membrane and tapes

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 rafters abuts eaves insulation
- Ensure gap between wall plate and over rafter insulation is completely filled with insulation having a min. R-value across the insulation thickness of 4.70 m² K/W



AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

- 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 or tape
- Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

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
 Install suitable cavity barrier to manufacturers specification
 If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature
 Read in conjunction with detail 5-16, Gable - Insulation between and over rafters - Unventilated Rafter Void

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, or
- Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

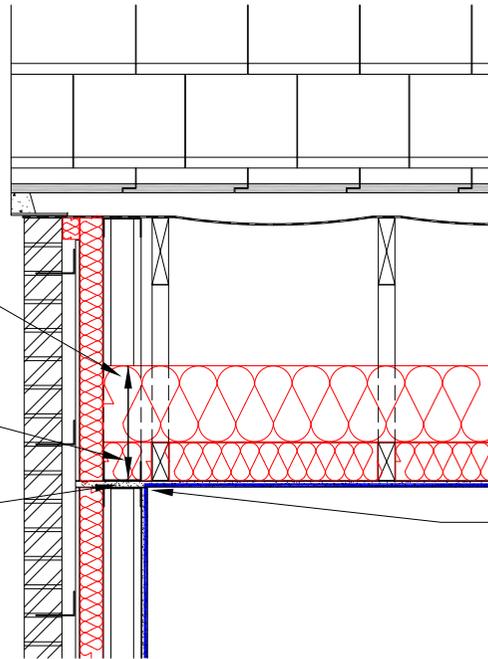
AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Ensure full depth of insulation between and over joists extends to inner face of rigid wall sheathing / insulation

Pack compressible insulation between last truss / joist, and gable wall insulation

Thermal break with R-value of 0.20 m² K/W



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

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

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read in conjunction with details 5-07, Eaves - Ventilated Attic, or 5-08, Eaves - Unventilated Attic, as appropriate

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

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

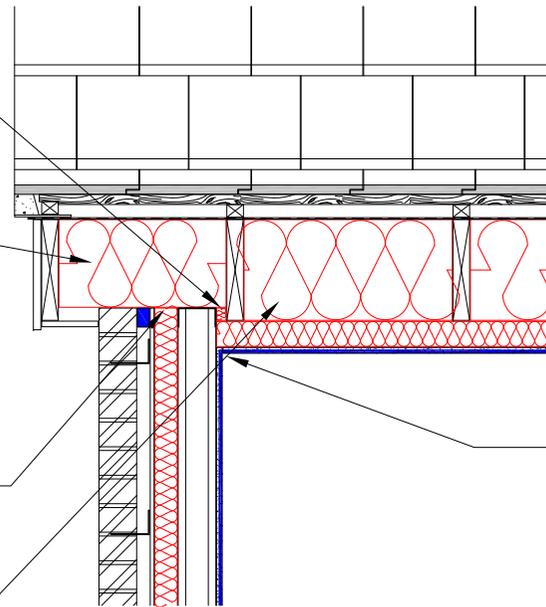
Fit insulation over top of wall within gable ladder. Fully fill void unless underlay requires to be draped, when 25 mm void must be maintained. Min. R-value of 4.35 m² K/W

Ensure insulation continuity throughout junction

Ensure wall insulation is taken up level with top of wall

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 or tape

-

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard.
 Vapour permeable roof underlay to be used in strict accordance with approved third party certification
 Use of under rafter insulation is considered best practice, as it eliminates the cold bridge caused by the rafter
 Install suitable cavity barrier to manufacturers specification
 If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature
 Read in conjunction with details 5-10, Eaves - Insulation between and under rafters - Unventilated Rafter Void

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or
- Internal lining, for example, plasterboard, or
- Airtightness membrane and tapes

Gable - Insulation between and under rafters - Ventilated Rafter Void

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

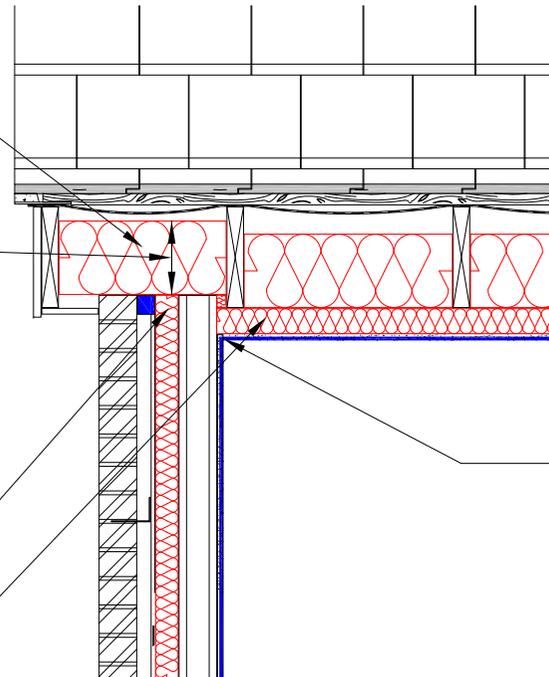
Ensure full depth of insulation between and under rafters extends to wall. Pack gap between rafter and wall with compressible insulation

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. Min. R-value of 4.35 m² K/W

Ensure insulation continuity throughout junction

Ensure wall insulation is taken up level with top of wall

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 or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

Ventilate roof in accordance with BS 5250. 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

Install suitable cavity barrier to manufacturers specification

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

Read in conjunction with details 5-09, Eaves - Insulation between and under rafters - Ventilated Rafter Void

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST (TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST (TICK ALL)

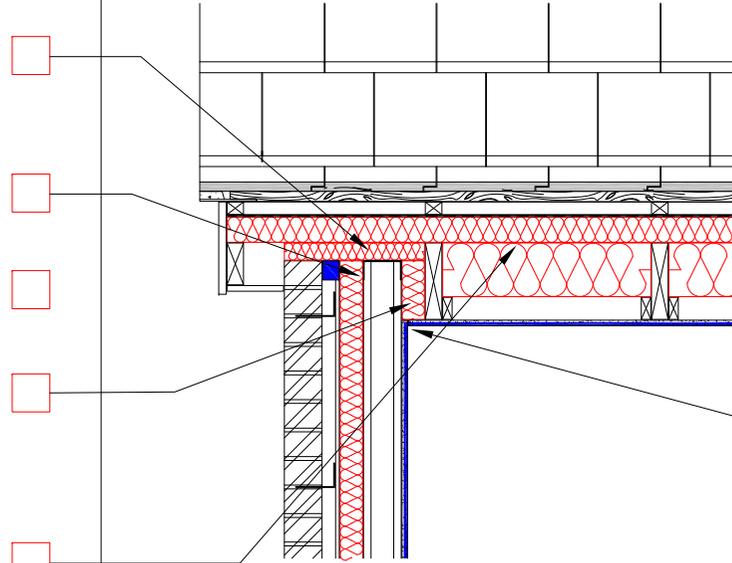
Fit insulation over top of wall within gable ladder. Fully fill void between wall head, and over-rafter insulation. Min. R-value of 2.17 m² K/W

Ensure wall insulation is taken up level with top of wall

Ensure insulation continuity throughout junction

Pack gap between rafter and wall with compressible insulation

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



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If required by BS5250, use vapour control plasterboard or separate vapour control layer behind plasterboard. Vapour permeable roof underlay to be used in strict accordance with approved third party certification Use of over rafter insulation is considered best practice, as it eliminates the cold bridge caused by the rafter Install suitable cavity barrier to manufacturers specification If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature Read in conjunction with details 5-12, Eaves - Insulation between and over rafters - Unventilated Rafter Void

OPTION (TICK ONE)

AIR BARRIER - OPTIONS

- Rigid insulation or board sheathing, or Internal lining, for example, plasterboard, or Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

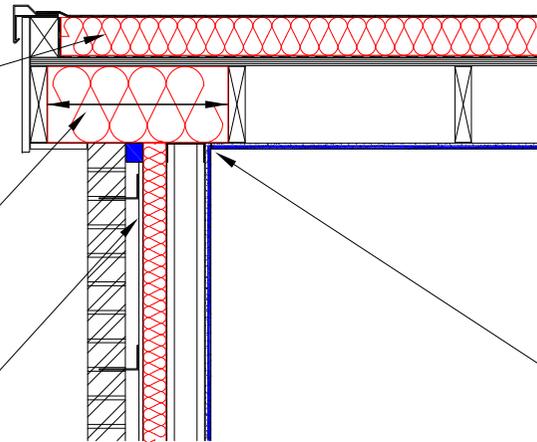
AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Ensure full depth of over roof insulation over joists extends to roof edge

Fit insulation over top of wall within gable ladder. Fully fill void, ensuring insulation is installed tightly between joists, and is in contact with deck. Min. R-value of 5.00 m² K/W

Ensure wall insulation is taken up level with top of wall



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

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

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

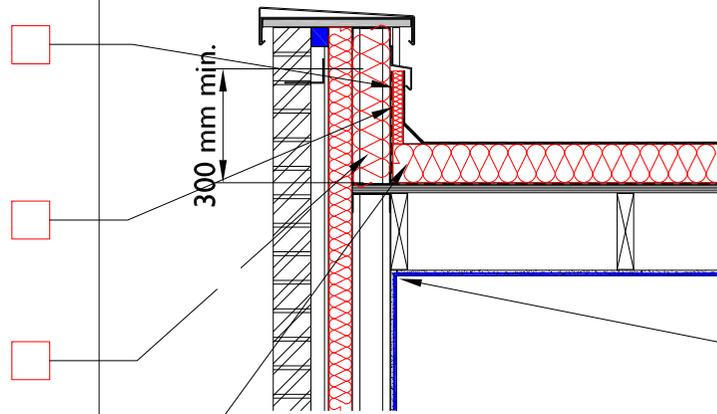
CHECKLIST
(TICK ALL)

Insulation upstand having a minimum R-value of 1.14 m² 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

Install compressible insulation between wall studs over level of deck

Ensure roof insulation tightly abuts inner face of parapet wall



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between ceiling, and wall lining or sheathing layer. A flexible membrane installed below wall plate may be used to provide this continuity

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

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

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

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

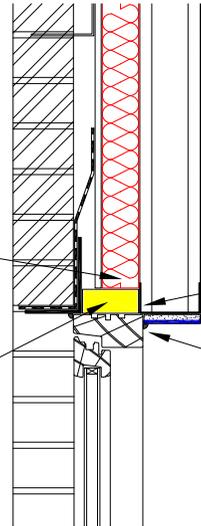
CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Finish insulation tight to closer

Install proprietary cavity closer with thermal resistance path through closer of 3.94 m² K/W or better (Manufacturers' certified data)



Seal all penetrations through air barrier using a flexible sealant or tape

Ensure air barrier continuity between frame, and wall lining or sheathing layer. A flexible membrane may be used to provide this continuity

Apply flexible sealant to interfaces between wall air barrier elements, and frame members

Apply external flexible seal around frame

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board and cavity closer. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

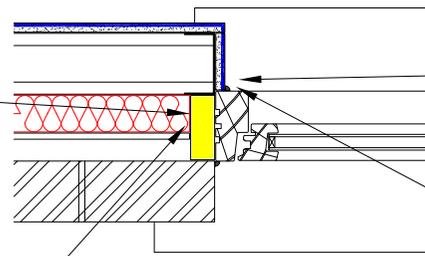
CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Install proprietary cavity closer with thermal resistance path through closer of 3.94 m² K/W or better (Manufacturers' certified data)

Finish insulation tight to closer



Seal all penetrations through air barrier using a flexible sealant or tape

Apply flexible sealant to interfaces between wall air barrier elements, and frame members

Ensure air barrier continuity between frame, and wall lining or sheathing layer. A flexible membrane may be used to provide this continuity

Apply external flexible seal around frame

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board and cavity closer. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes

THERMAL PERFORMANCE

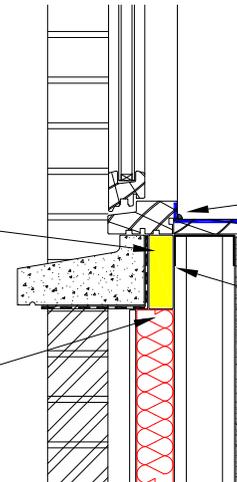
CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)

Install proprietary cavity closer with thermal resistance path through closer of 3.13 m² K/W or better (Manufacturers' certified data)

Finish insulation tight to closer



Seal all penetrations through air barrier using a flexible sealant or tape

Apply flexible sealant to interfaces between wall air barrier elements, and frame members

Ensure air barrier continuity between frame, and wall lining or sheathing layer. A flexible membrane may be used to provide this continuity

Apply external flexible seal around frame / bed frame in flexible seal

Complying with checklist will help achieve design air permeability and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board and cavity closer. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

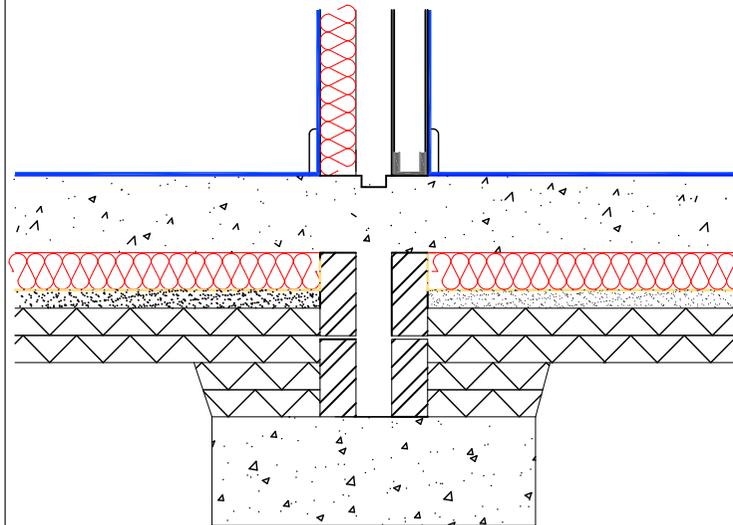
Airtightness membrane and tapes

THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

AIR BARRIER - CONTINUITY

CHECKLIST
(TICK ALL)



Complying with checklist will help achieve design air permeability

GENERAL NOTES

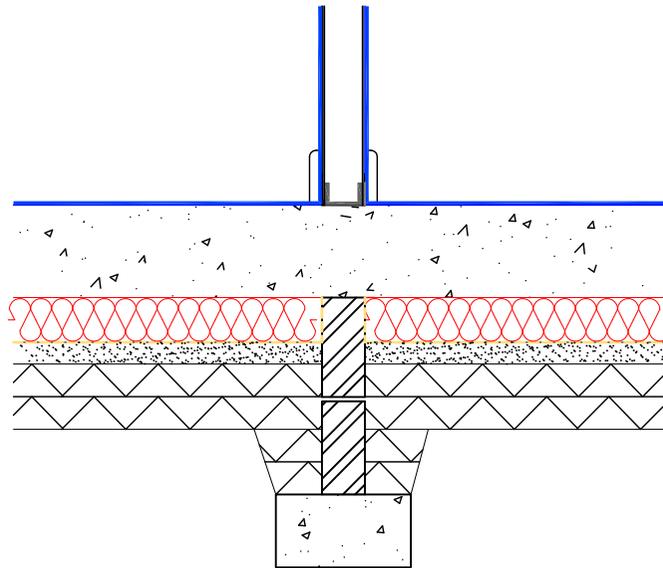
See TGD-B for guidance on fire safety and TGD-E for guidance on sound insulation

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

- Internal lining, for example, plaster, or
- Airtightness tapes

THERMAL PERFORMANCE
CHECKLIST
(TICK ALL)



AIR BARRIER - CONTINUITY
CHECKLIST
(TICK ALL)

Complying with checklist will help achieve design air permeability

GENERAL NOTES

OPTION
(TICK ONE)

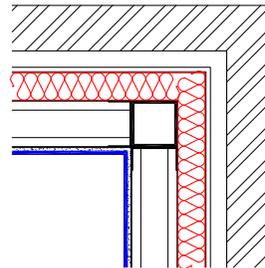
AIR BARRIER - OPTIONS

- Internal lining, for example, plaster, or
- Airtightness tapes

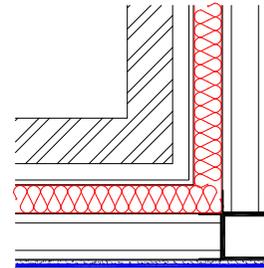
THERMAL PERFORMANCE

CHECKLIST
(TICK ALL)

5.23.1



5.23.2



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 and may effect a reduced testing regime.

GENERAL NOTES

If compressible insulation is installed between studs in addition to rigid board insulation over, it should be tightly packed and be in direct contact with the rigid board. Take care to ensure compressible insulation is maintained above dewpoint temperature

OPTION
(TICK ONE)

AIR BARRIER - OPTIONS

Rigid insulation or board sheathing, or

Internal lining, for example, plasterboard, or

Airtightness membrane and tapes