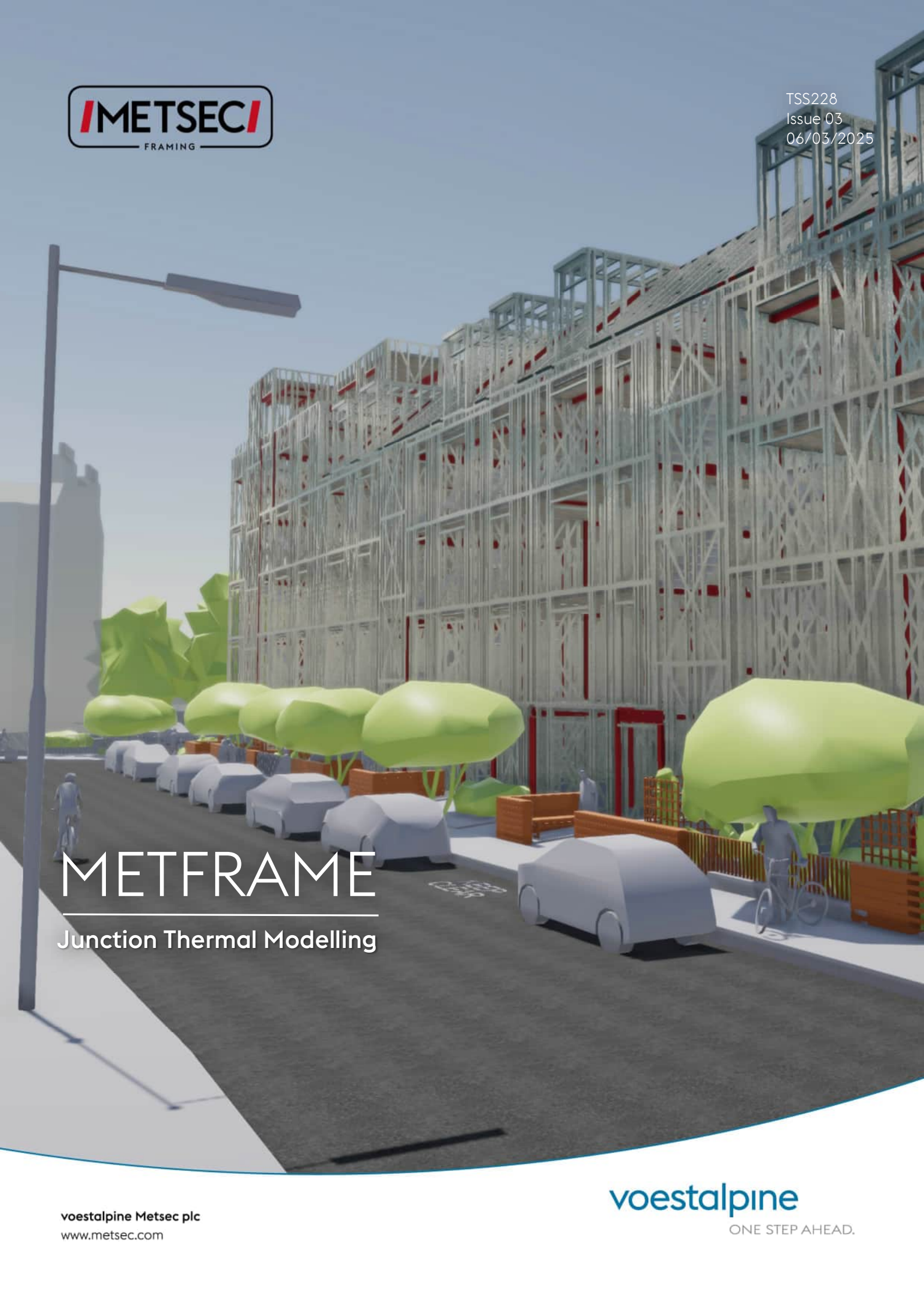




METFRAME

Junction Thermal Modelling

TRUST



WARRANTY

30 year wall
performance warranty
– MetWALL Perform®



Minimum £5m
professional indemnity
insurance as standard



Collateral design
warranty



BIM Level 2 compliant



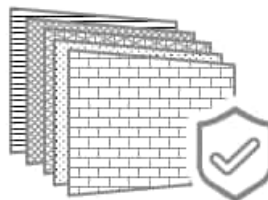
CCPi verification



Verified by Independent
EPD authority



Multiple choice of
plasterboard and sheathing
board with test data



Suitable for use
with a variety of
external finishes



Site inspections



Approved installer list



Free CPD seminars



Over 90 years
experience

METSEC METFRAME THERMAL JUNCTIONS

This report has been compiled as a summary of the Linear Thermal Transmittance (ψ -value) thermal modelling carried out on behalf of voestalpine Metsec plc by ATSPACE Ltd. The aim of this report is to provide:

- » Linear Thermal Transmittance (ψ values) and temperature factors for standard Metframe junction details.
- » Standard Metframe junction details.
- » Calculation certificates to EN ISO 1021-2007, IP 1/06 and BR497.

Author	Date	Issue	Summary of Changes
OPJ	06/10/2023	01	First Issue
OPJ	17/12/2024	02	Updated junction details around openings (E2,E3, E4)
OPJ	06/03/2025	03	Template update

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JUNCTION THERMAL PERFORMANCE SUMMARY

Junctions with an External Wall – Brickwork Cladding

Ref	Junction Detail	ψ (W/mK)	Certificate No.
E1	Steel lintel with perforated steel base plate		
E2	Other Lintels	0.006	ATSP-E2-Q17317-0.006
E3	Cill	0.027	ATSP-E3-Q17317-0.0274
E4	Jamb	0.015	ATSP-E4-Q17317-0.0153
E5	Ground Floor (normal)	0.140	ATSP-E5-Q10622-0.1402
E19	Ground Floor (inverted)		
E20	Exposed Floor (normal)		
E21	Exposed Floor (inverted)		
E22	Basement floor		
E6	Intermediate floor within a dwelling		
E7	Party floor between dwellings	0.039	ATSP-E7-Q10622-0.0393
E8	Balcony within a dwelling, wall insulation continuous		
E9	Balcony between a dwellings, wall insulation continuous		
E23	Balcony within or between dwellings		
E10	Eaves (insulation at ceiling level)	0.067	ATSP-E10-Q10622-0.0668
E24	Eaves (insulation at ceiling level - inverted)		
E11	Eaves (insulation at rafter level)	0.081	ATSP-E11-Q10622-0.0809
E12	Gable (insulation at ceiling level)	0.057	ATSP-E12-Q10622-0.0574
E13	Gable (insulation at rafter level)	0.098	ATSP-E13-Q10622-0.098
E14	Flat Roof	0.084	ATSP-E14-Q10622-0.0838
E15	Flat Roof with parapet	0.144	ATSP-E15-Q10622-0.1441
E16	Corner (normal)	0.024	ATSP-E16-Q10622-0.024
E17	Corner (inverted)	-0.102	ATSP-E17-Q10622--0.1019
E18	Party Wall between dwellings	-0.002	ATSP-E18-Q10622--0.002
E25	Staggered party wall between dwellings		

Junctions with an External Wall – Rainscreen Cladding

Ref	Junction Detail	ψ (W/mK)	Certificate No.
E1	Steel lintel with perforated steel base plate		
E2	Other Lintels	0.007	ATSP-E2-Q17317-0.007
E3	Cill	0.017	ATSP-E3-Q17317-0.0166
E4	Jamb	0.012	ATSP-E4-Q17317-0.0118
E5	Ground Floor (normal)	0.129	ATSP-E5-Q10622-0.1289
E19	Ground Floor (inverted)		
E20	Exposed Floor (normal)		
E21	Exposed Floor (inverted)		
E22	Basement floor		
E6	Intermediate floor within a dwelling		
E7	Party floor between dwellings	0.033	ATSP-E7-Q10622-0.033
E8	Balcony within a dwelling, wall insulation continuous		
E9	Balcony between a dwellings, wall insulation continuous		
E23	Balcony within or between dwellings		
E10	Eaves (insulation at ceiling level)	0.025	ATSP-E10-Q10622-0.0245
E24	Eaves (insulation at ceiling level - inverted)		
E11	Eaves (insulation at rafter level)	0.092	ATSP-E11-Q10622-0.0923
E12	Gable (insulation at ceiling level)	0.055	ATSP-E12-Q10622-0.0554
E13	Gable (insulation at rafter level)	0.090	ATSP-E13-Q10622-0.0903
E14	Flat Roof	0.077	ATSP-E14-Q10622-0.0772
E15	Flat Roof with parapet	0.043	ATSP-E15-Q10622-0.0432
E16	Corner (normal)	0.027	ATSP-E16-Q10622-0.0269
E17	Corner (inverted)	-0.083	ATSP-E17-Q10622--0.0834
E18	Party Wall between dwellings	0.001	ATSP-E18-Q10622-0.001
E25	Staggered party wall between dwellings		

Junctions with a Party Wall

Ref	Junction Detail	ψ (W/mK)	Certificate No.
P1	Ground Floor	0.211	ATSP-P1-Q10622-0.211
P6	Ground Floor (inverted)		
P2	Intermediate floor within a dwelling		
P3	Intermediate floor within a dwelling (in blocks of flats)		
P7	Exposed floor (normal)		
P8	Exposed floor (inverted)		
P4	Roof (insulation at ceiling level)	0.087	ATSP-P4-Q10622-0.0865
P5	Roof (insulation at rafter level)	0.034	ATSP-P5-Q10622-0.0337

PART L: THERMAL

Basic Principles

The thermal performance of an external wall is measured by the thermal transmittance, known as U-value, which is a measure of the rate of transfer of heat through the build-up, divided by the temperature difference across that build-up. U-value is measured in $\text{W/m}^2\text{K}$ with a better insulating build-up giving a lower U-value. ψ values (psi-values) are the measure of the heat loss properties of junctions where two elements meet, and are measured in W/mK . Both values must be considered when assessing the energy efficiency of a building.

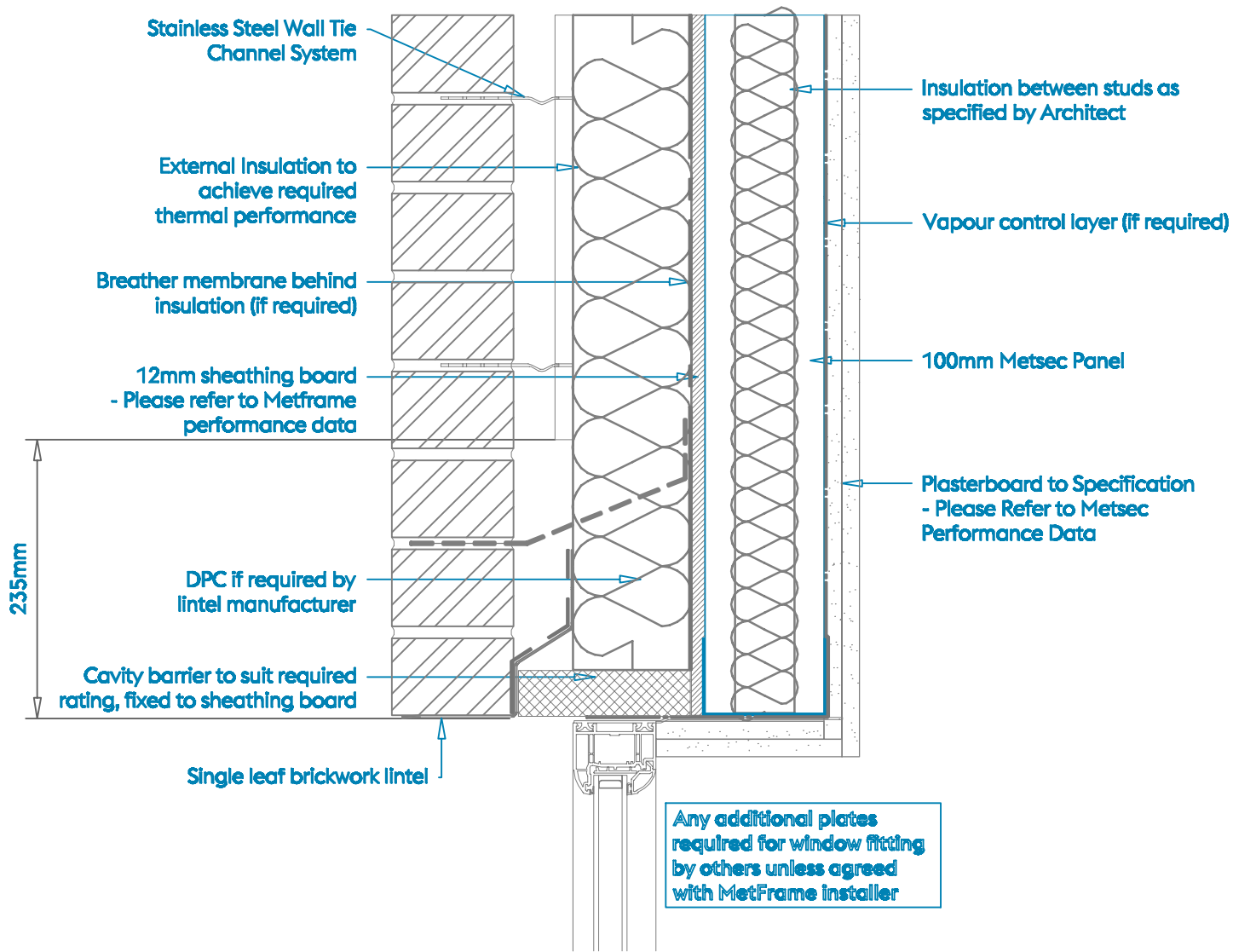
Although the Building Regulations Approved Document L1a sets out limiting fabric parameters for external wall U-value of $0.26 \text{ W/m}^2\text{K}$, most energy efficient buildings now require lower U-values to improve the overall SAP rating of the building. Workmanship can strongly affect the thermal transmittance of an external wall. For example, insulation is fitted poorly, with gaps and cold bridges, can lead to considerably higher thermal transmittance than calculated.

Thermal Performance

To quantify a building's energy efficiency, U-values and psi-values must be entered into Standard Assessment Procedure (SAP) software by a registered and accredited SAP assessor.

In the past, SAP assessors have had the option to produce Psi-value calculations using the Government's standardised Accredited Construction Details (ACDs). These details however have been removed from the latest version of the SAP method, to reduce reliance on assumptions and default information. Assessors can now use the technical information enclosed within this report, specific to the voestalpine Metsec products and systems.

U-value calculations are available on request from voestalpine Metsec plc and should be verified by your insulation provider.



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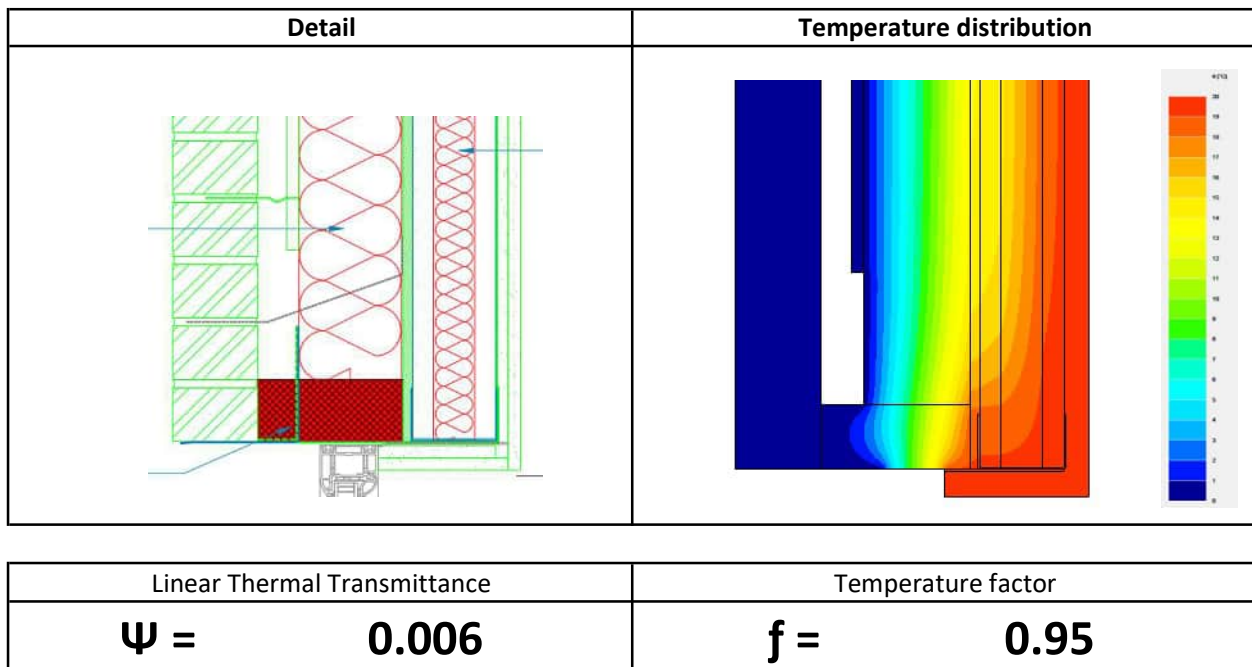
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Information		Brickwork lintel - Window/door set outside Metfram	
Scale:	NTS	Drawn by:	OPJ
		Approved by:	17/12/24
		OPJ	
Project:	Standard Details		Revision:
	ME-A400		C

E2 - Other lintels (including other steel lintels)

Certificate number:
ATSP-E2-Q17317-0.006

General construction specification checklist

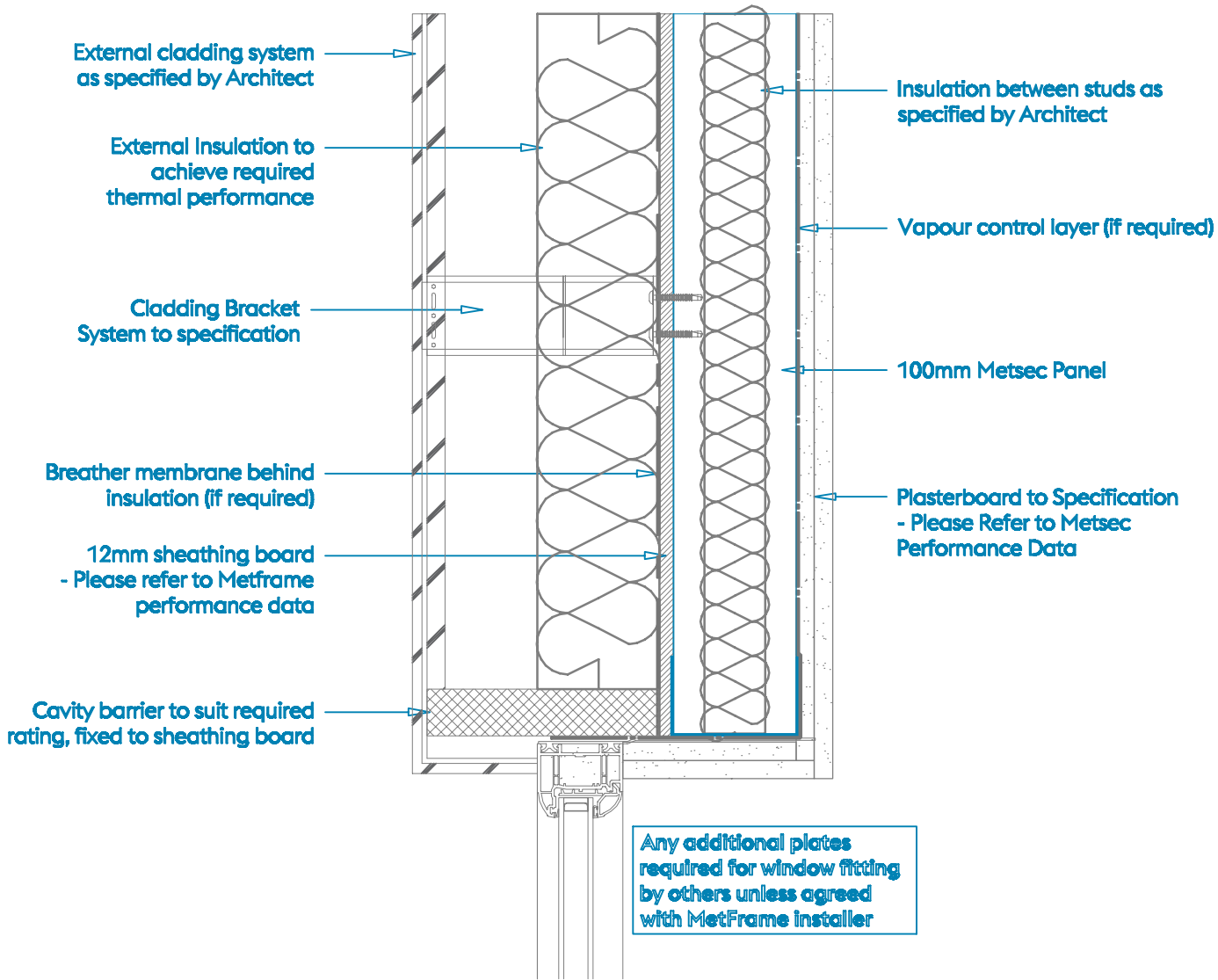
- Brick outer leaf with ventilated cavity
- 125mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	17/10/2024
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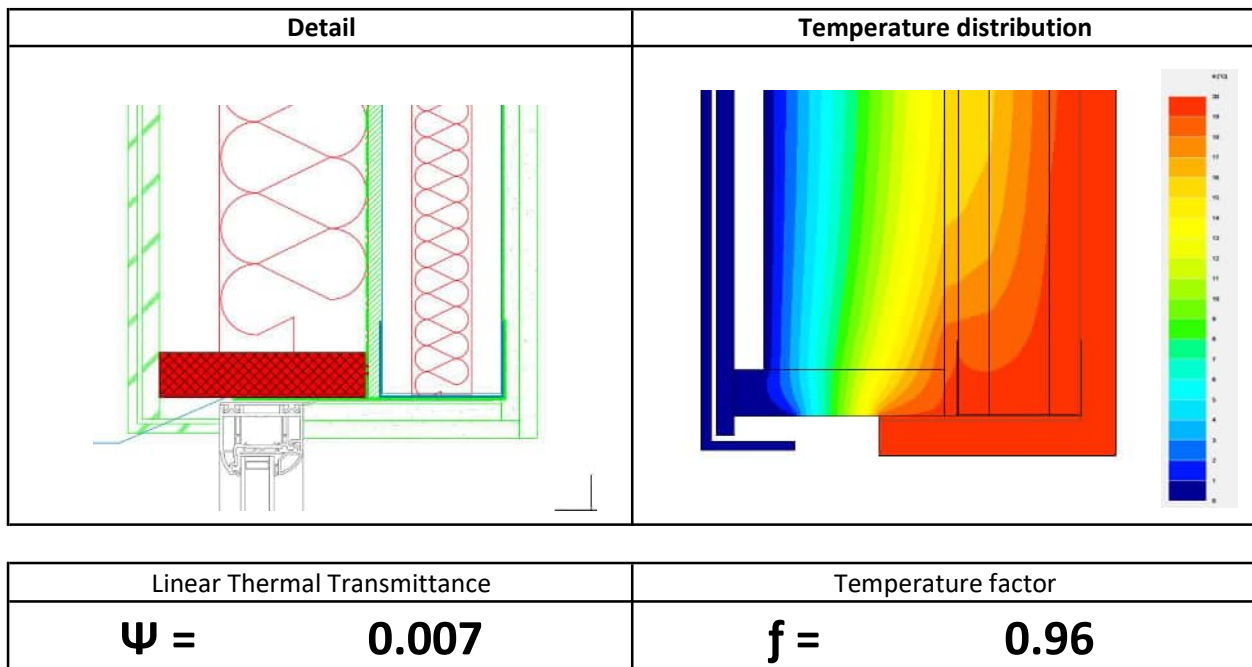
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Information		Clad lintel - Window/door set outside Metframe	
Scale:	Drawn by:	Approved by:	Date:
NTS	DH	OPJ	17/12/24
Project:		Drawing No.	Revision:
Standard Details		MF-A410	C

E2 - Other lintels (including other steel lintels)

Certificate number:
ATSP-E2-Q17317-0.007

General construction specification checklist

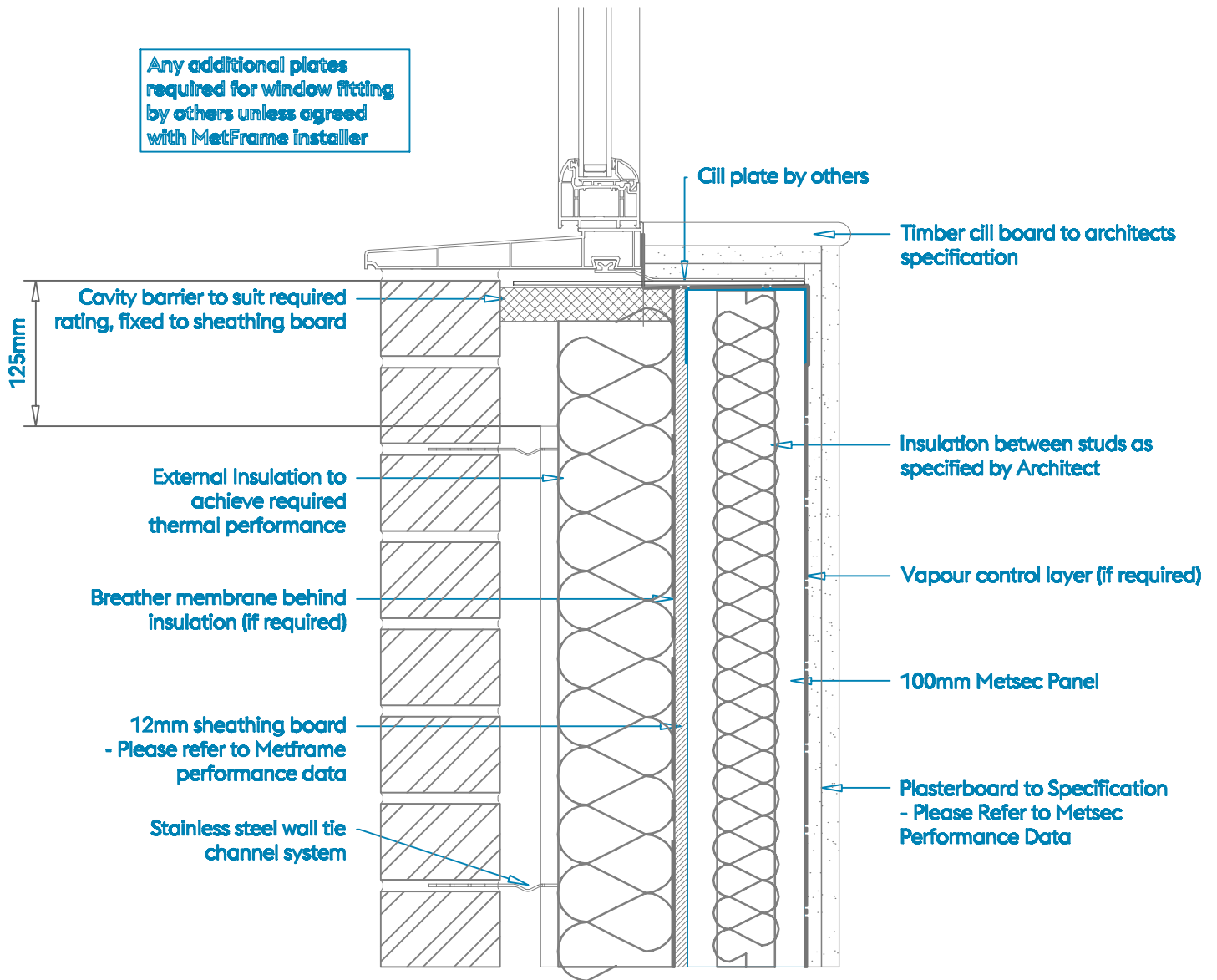
- Rainscreen outer leaf with ventilated cavity
- 150mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



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Date:	17/10/2024
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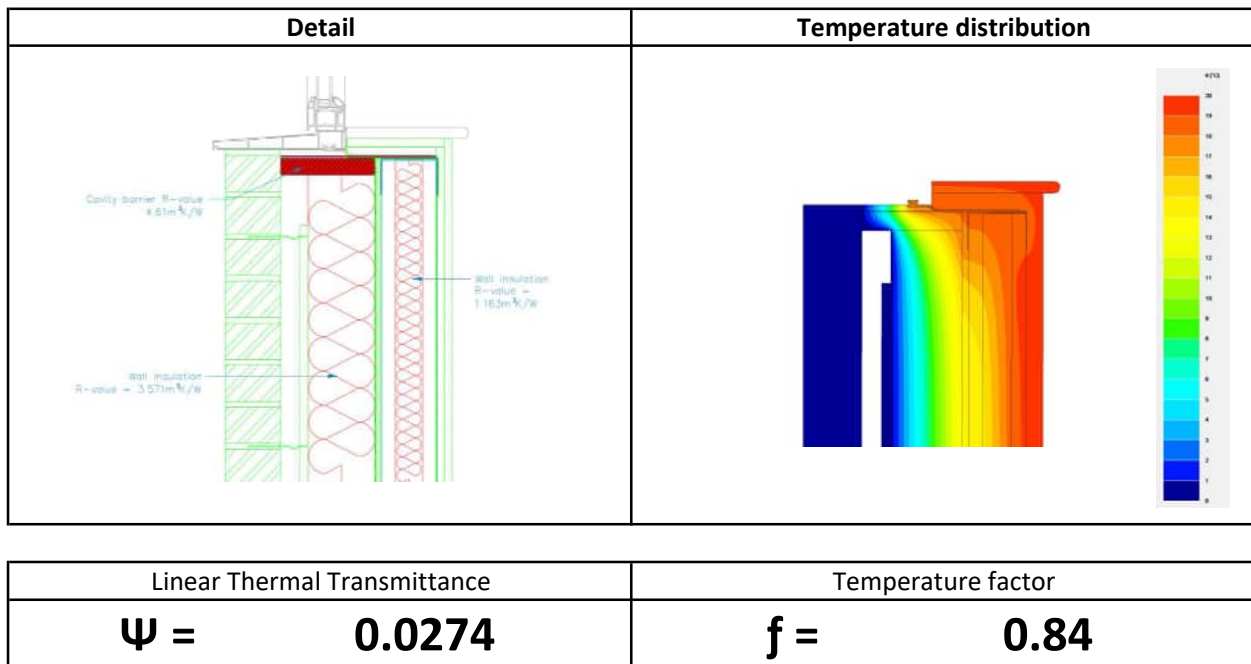
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Information	Brickwork cill - Window set outside Metframe		
Scale:	Drawn by:	Approved by:	Date:
NTS	DH	OPJ	17/12/24
Project:	Drawing No.		Revision:
Standard Details	MF-A420		C

E3 - Sill

Certificate number:
ATSP-E3-Q17317-0.0274

General construction specification checklist

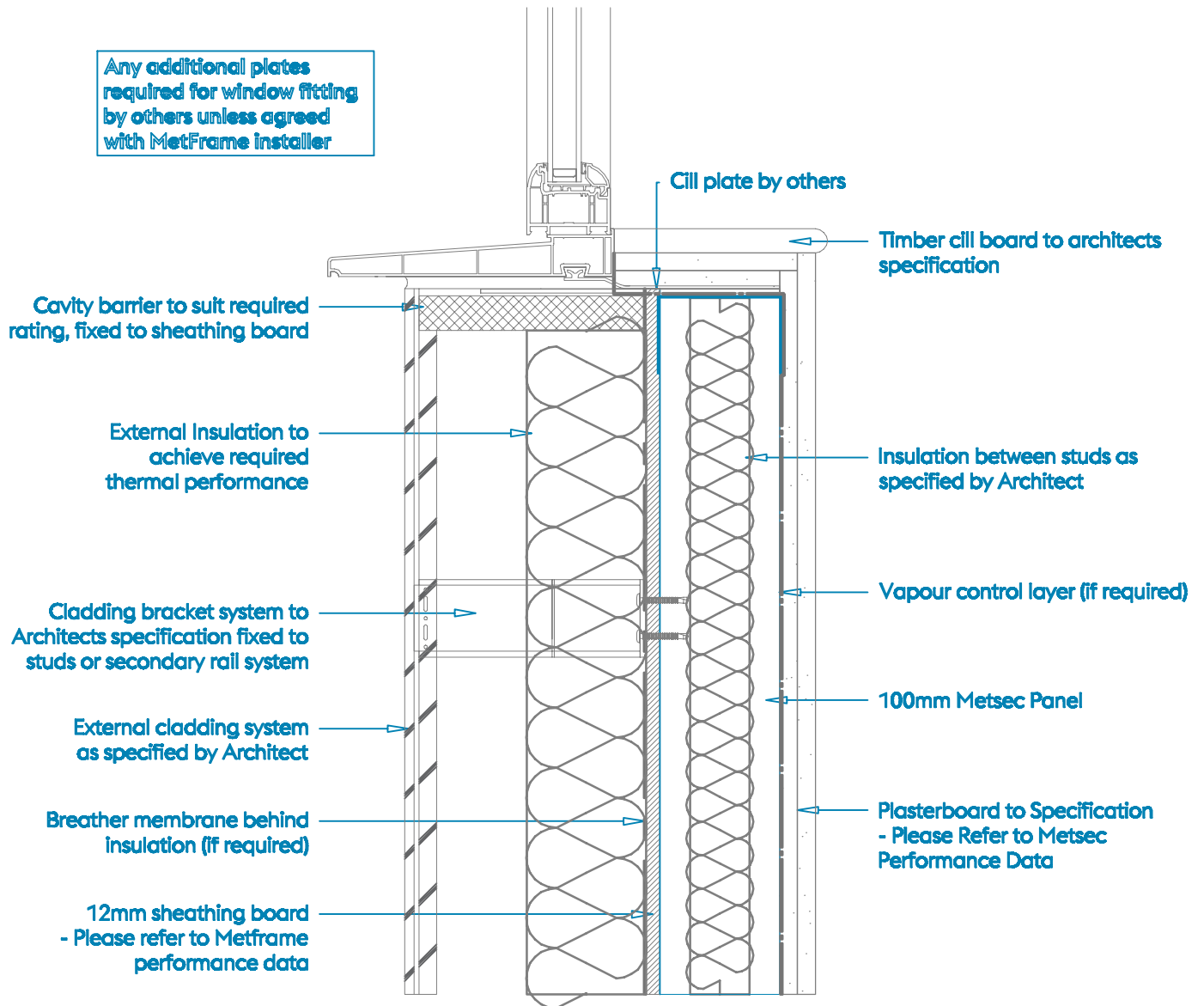
- Brick outer leaf with ventilated cavity
- 125mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	12/11/2024
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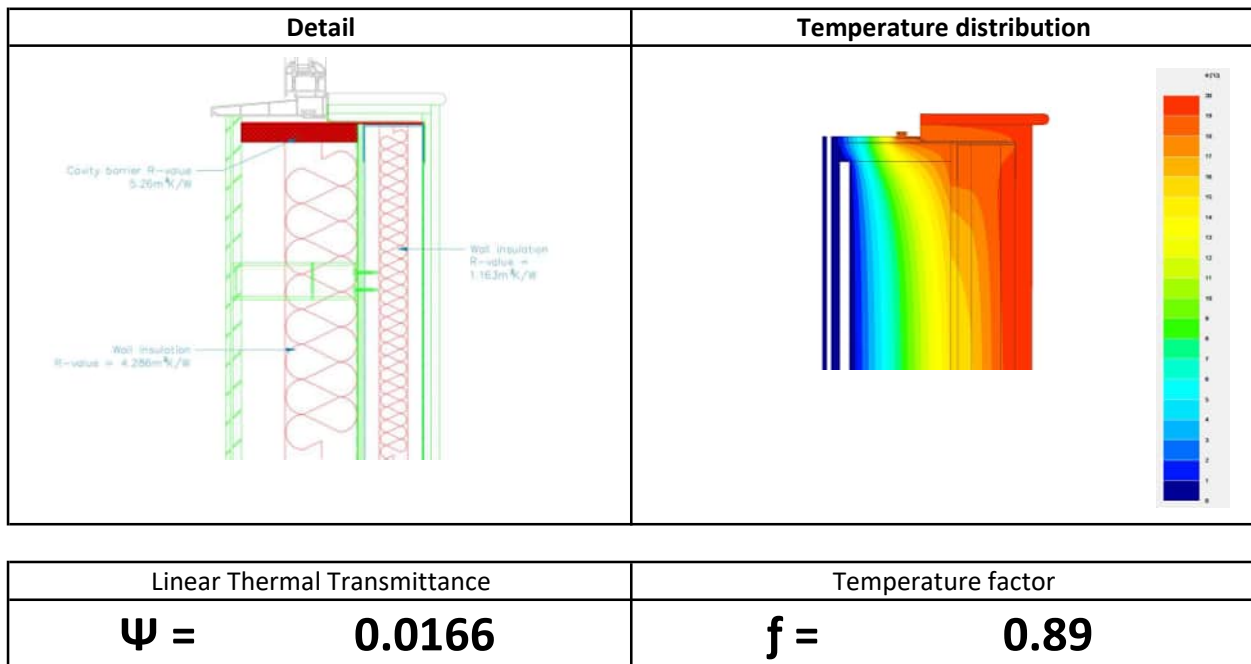
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Information		Clad cill - Window set outside Metframe	
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		Approved by:	OPJ
		Date:	17/12/24
Project:		Drawing No.	Revision:
Standard Details		MF-A430	C

E3 - Sill

Certificate number:
ATSP-E3-Q17317-0.0166

General construction specification checklist

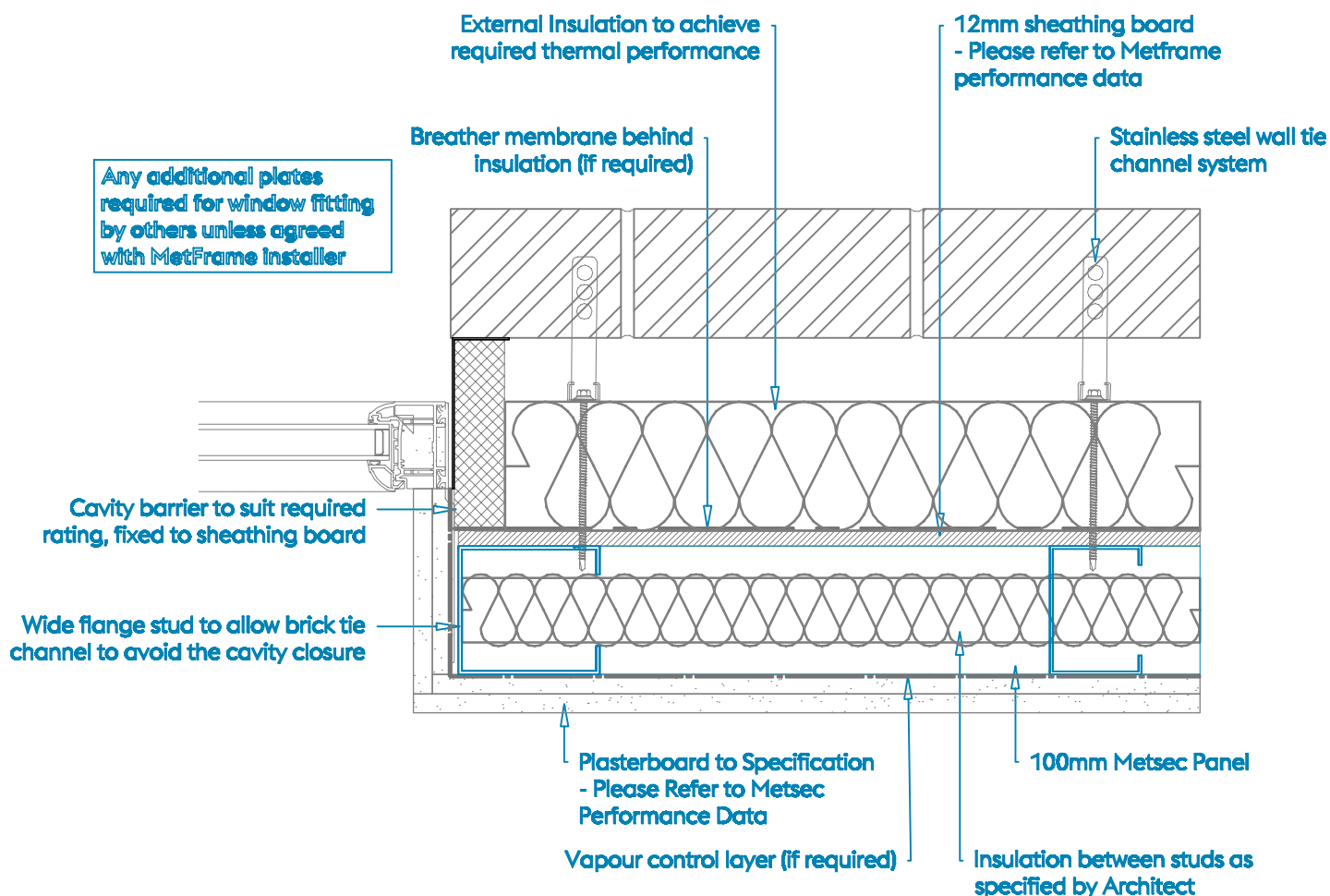
- Rainscreen outer leaf with ventilated cavity
- 150mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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Date:	17/10/2024
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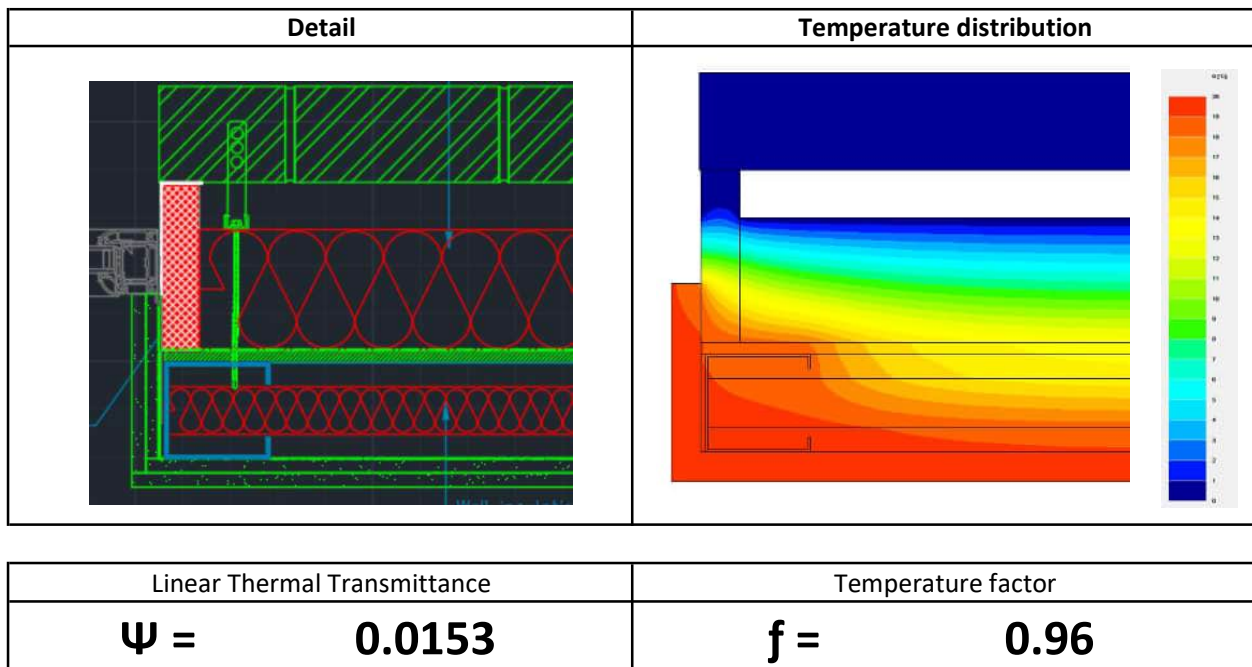
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Scale: NTS	Drawn by: DH	Approved by: OPJ	Date: 17/12/24
Project: Standard Details		Drawing No. MF-A440	Revision: C

E4 - Jamb

Certificate number:
ATSP-E4-Q17317-0.0153

General construction specification checklist

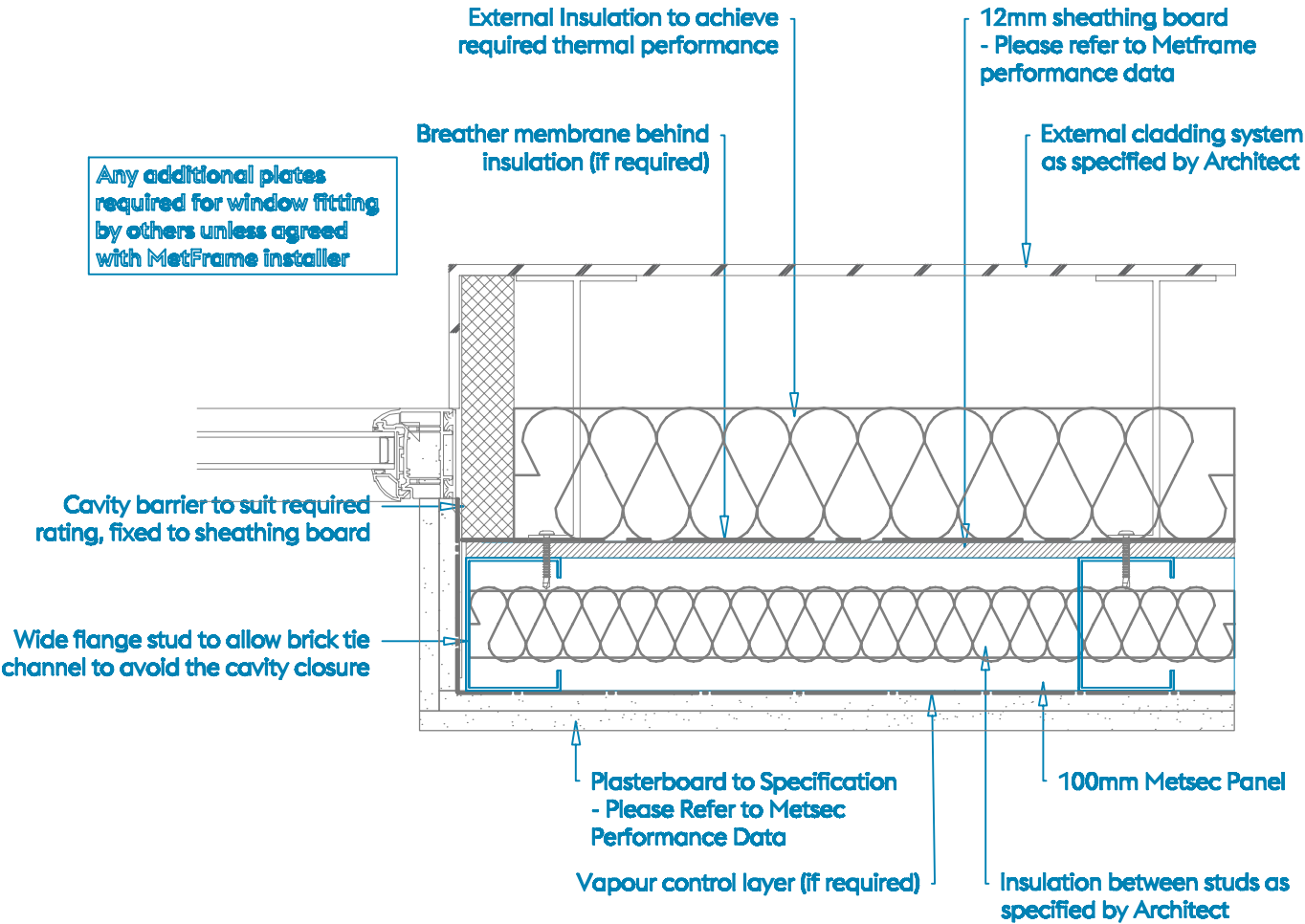
- Brick outer leaf with ventilated cavity
- 125mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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Date:	15/12/2024
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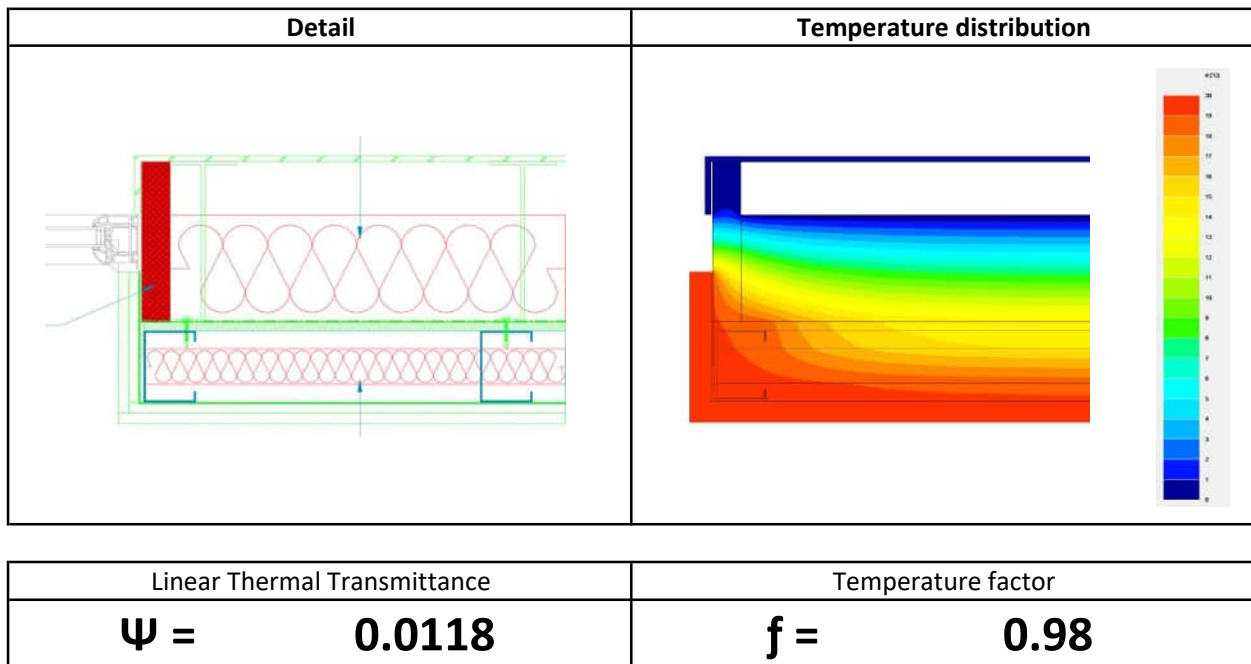
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		Approved by:	17/12/24
		OPJ	
Project:	Standard Details		Revision:
	Drawing No. MF-A450		C

E4 - Jamb

Certificate number:
ATSP-E4-Q17317-0.0118

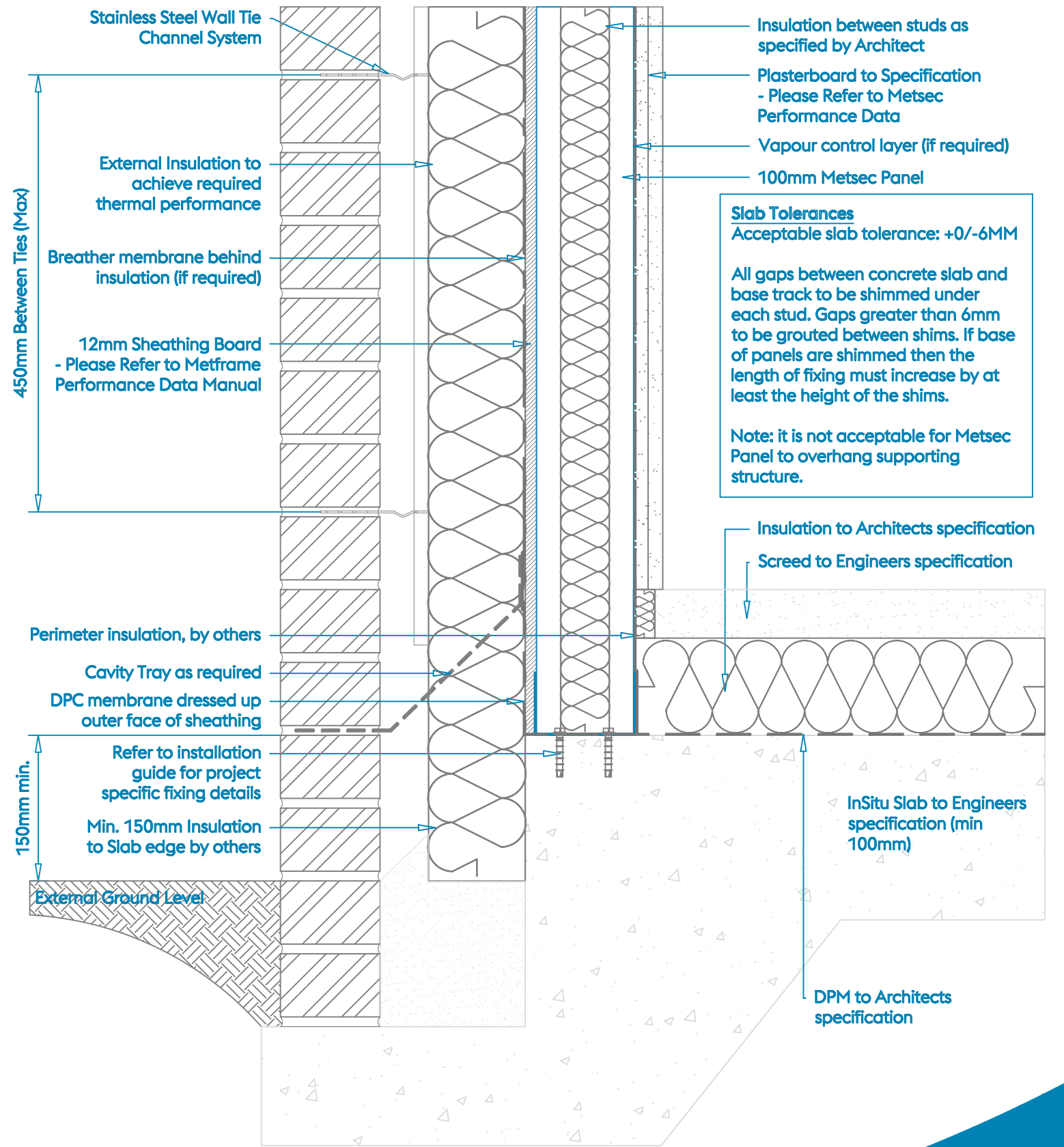
General construction specification checklist

- Rainscreen outer leaf with ventilated cavity
- 150mm mineral wool insulation (0.035 W/mK) fixed to cement bonded particle board
- 50mm mineral wool insulation (0.043 W/mK) fitted between 100mm Metsec studs
- 2 X 15mm layers plasterboard internal finish



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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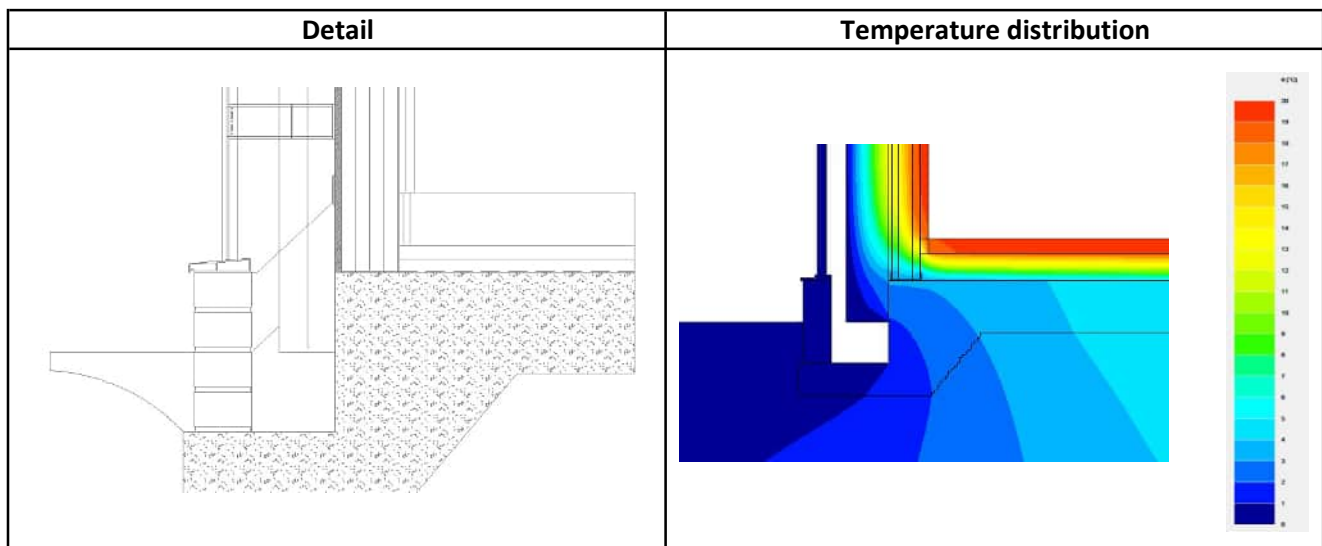
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Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A100	Revision: B	

E5 - Ground floor (normal)

Certificate number:
ATSP-E5-Q10622-0.1289

General construction specification checklist

- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
 - Perimeter insulation (0.022 W/mK)
 - 100mm PIR under screed (0.022 W/mK)

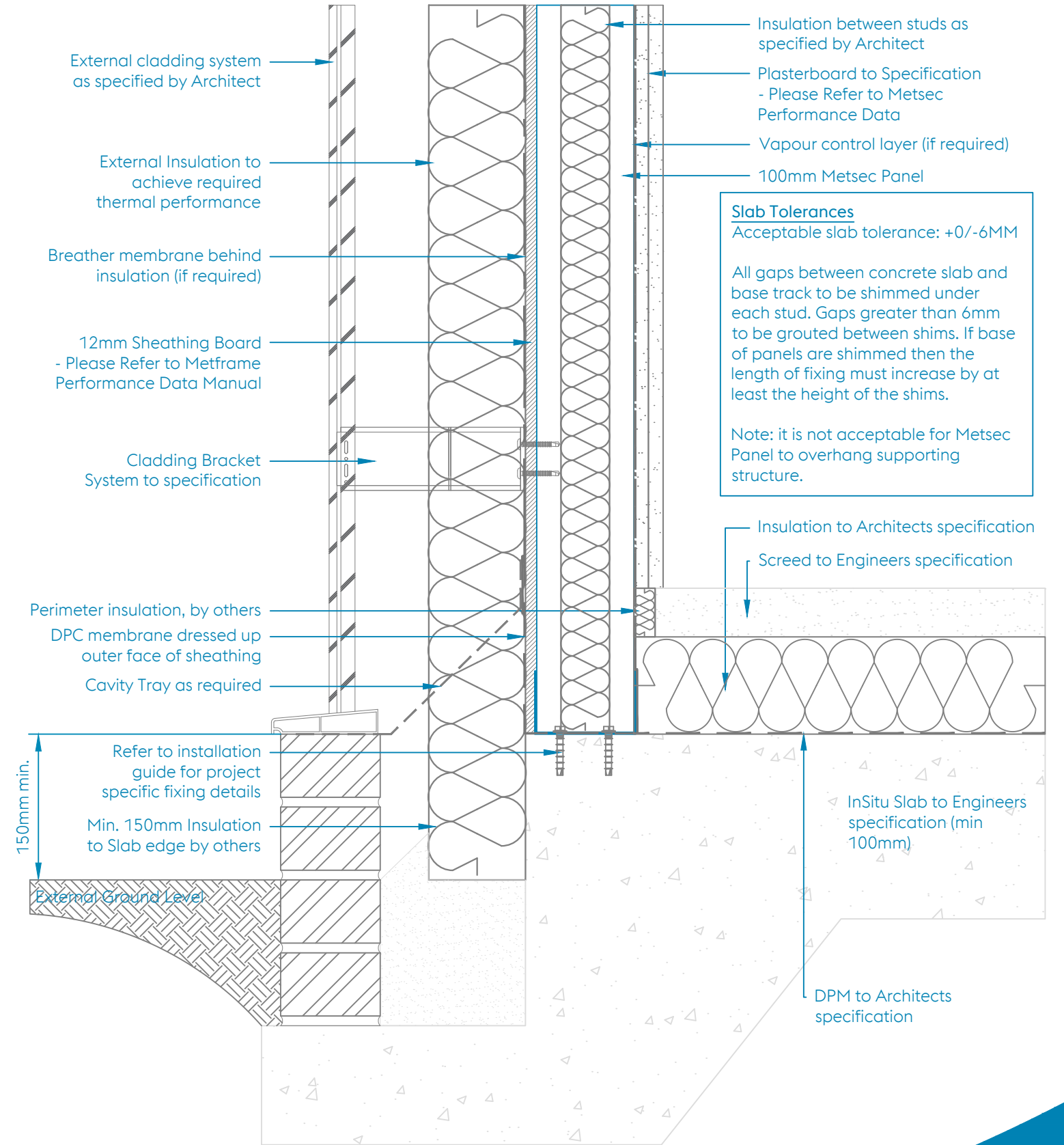


Linear Thermal Transmittance	Temperature factor
$\psi = 0.1289$	$f = 0.92$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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Date:	27/09/2023
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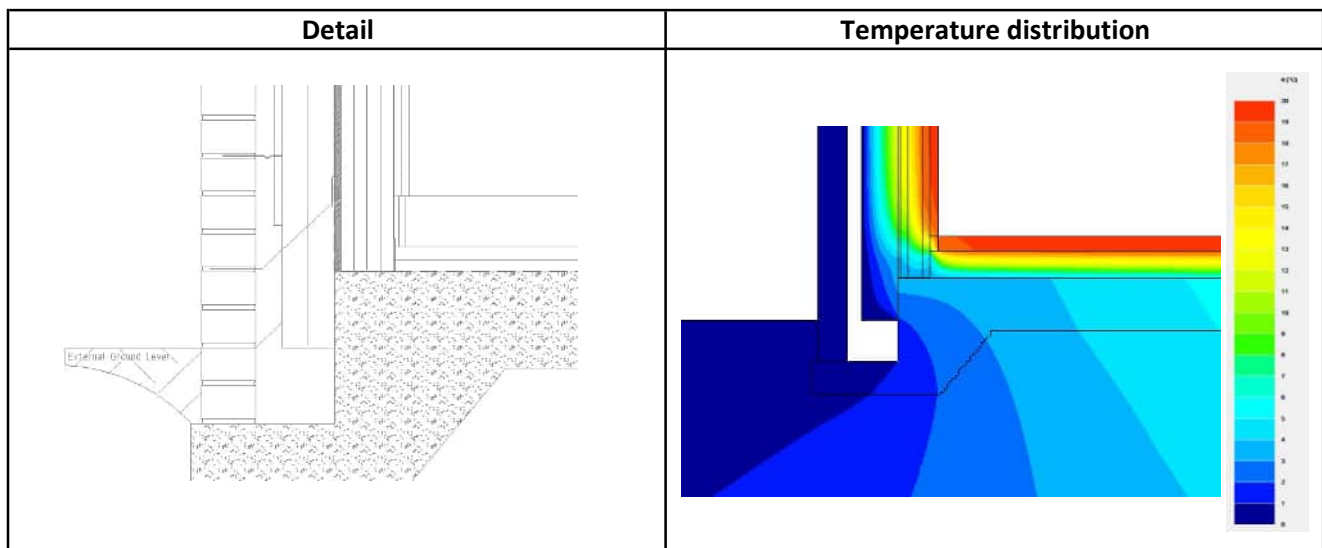
Information		Title: Clad external wall to concrete slab		
Scale:	1:5	Drawn by:	OPJ	Approved by:
				BG
				Date:
				10/02/23
Project:	Standard Details		Drawing No.	Revision:
			MF-A110	A

E5 - Ground floor (normal)

Certificate number:
ATSP-E5-Q10622-0.1402

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Perimeter insulation (0.022 W/mK)
- 100mm PIR beneath floor (0.022 W/mK)

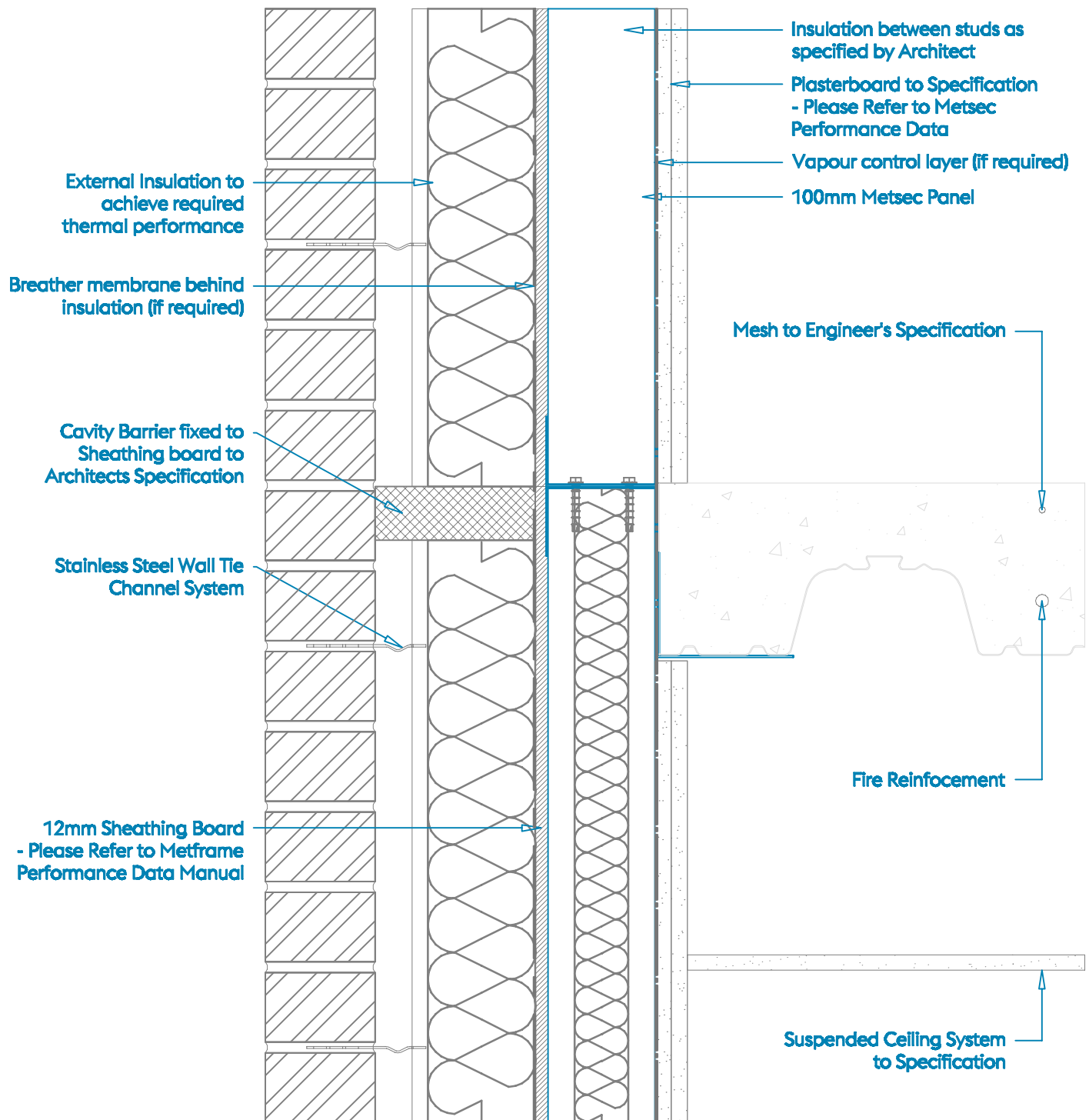


Linear Thermal Transmittance	Temperature factor
$\psi = 0.1402$	$f = 0.77$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	26/09/2023
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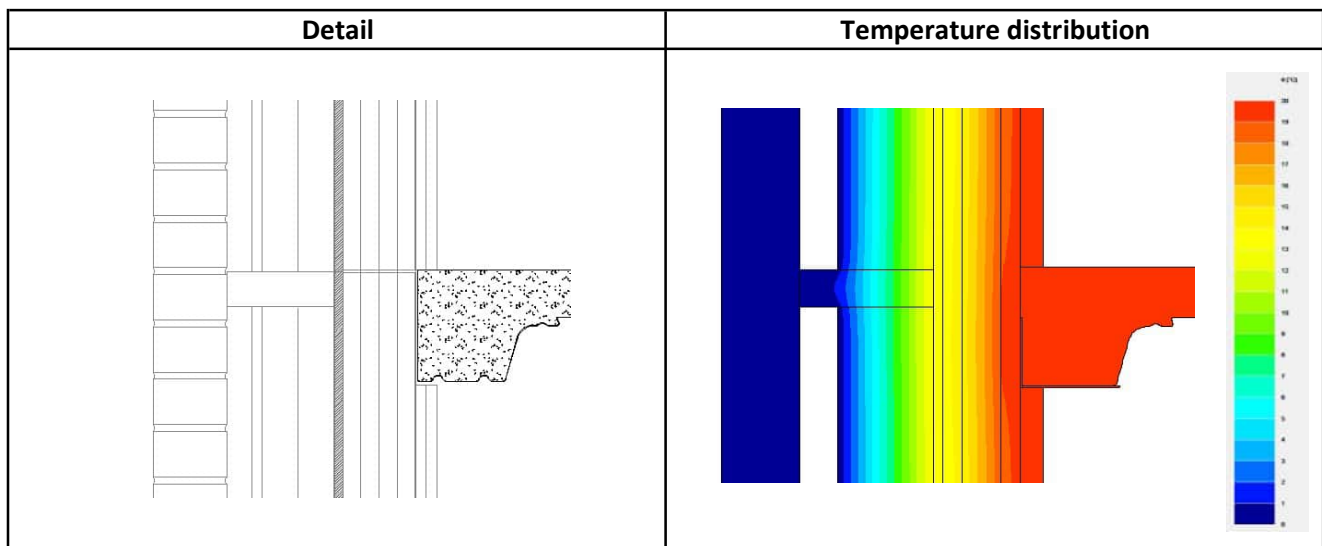
Issued For:		Title:	
Information		Brickwork external wall to composite concrete slab	
Scale:	Drawn by:	Approved by:	Date:
NTS	OPJ	BG	10/02/23
Project:		Drawing No.	Revision:
Standard Details		ME-A200	R

E7 - Party floor between dwellings (in block of flats)

Certificate number:
ATSP-E7-Q10622-0.0393

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

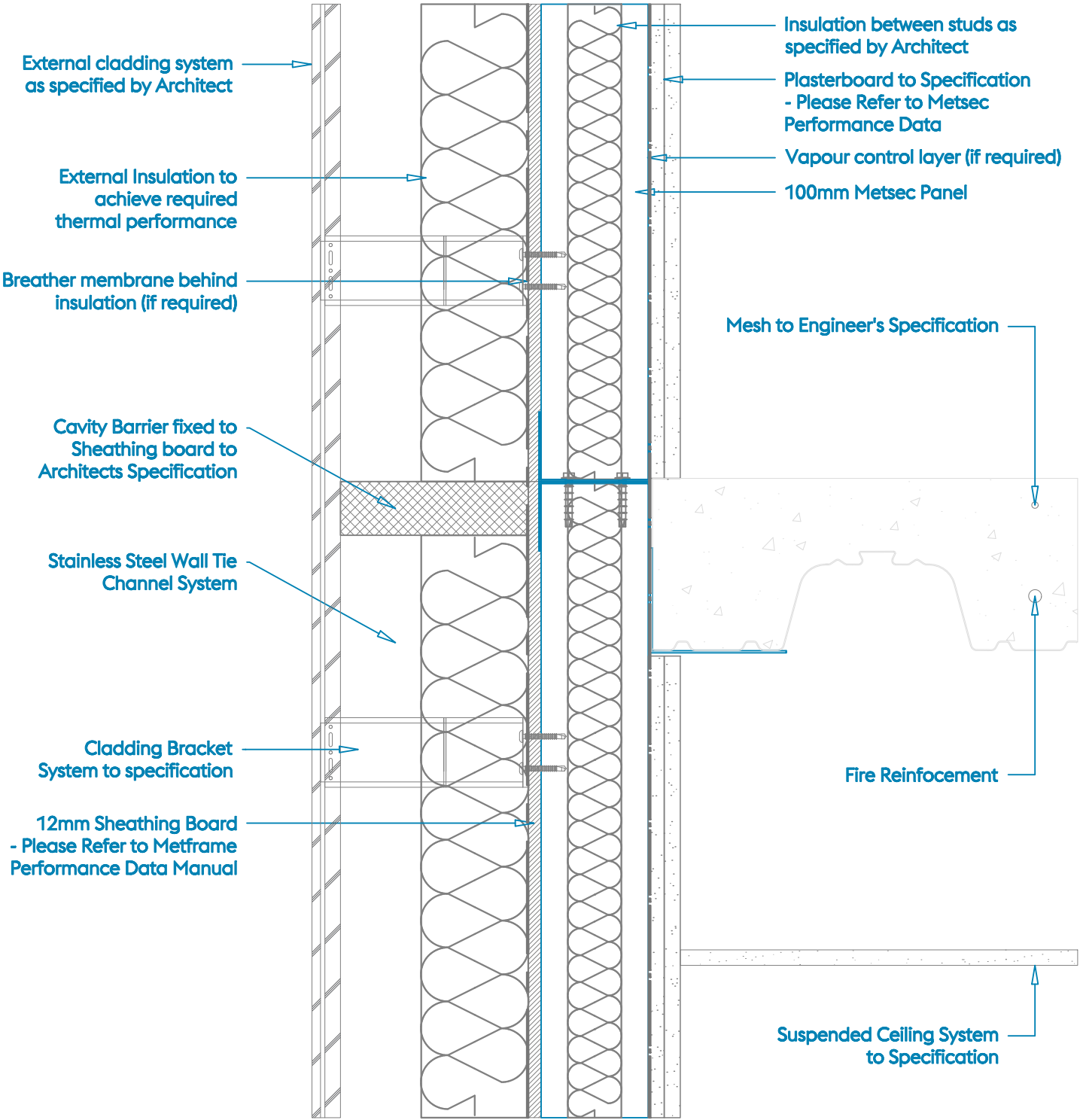


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0393$	$f = 0.96$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	27/09/2023
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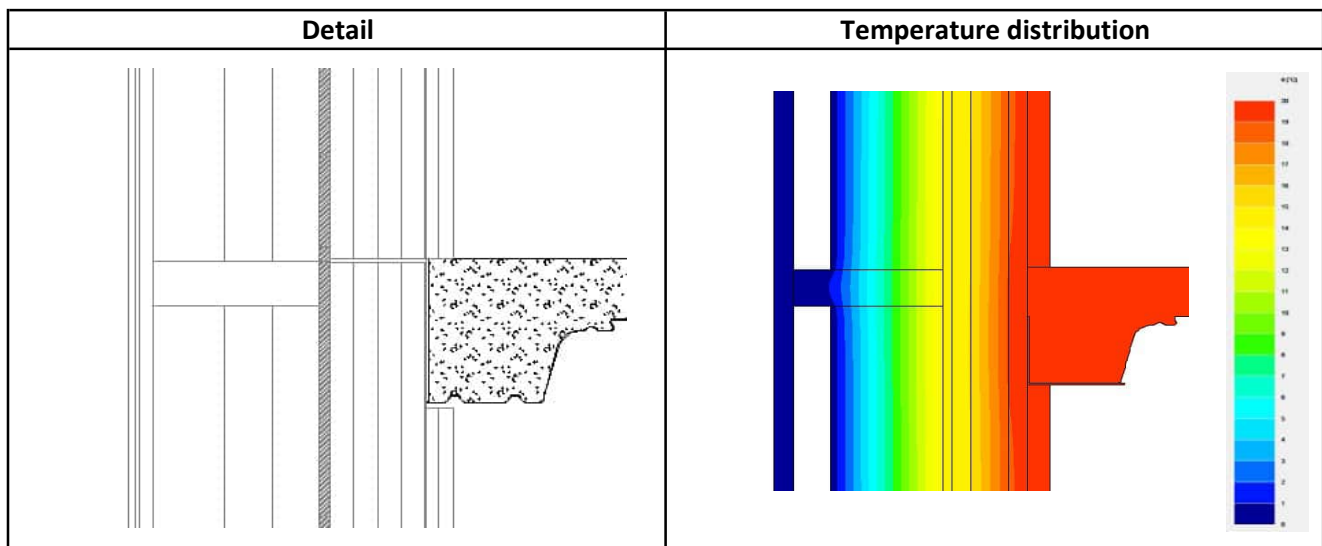
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Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23		
Project: Standard Details		Drawing No. MF-A210		Revision: B	

E7 - Party floor between dwellings (in block of flats)

Certificate number:
ATSP-E7-Q10622-0.033

General construction specification checklist

- Metsec metal frame system
- Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

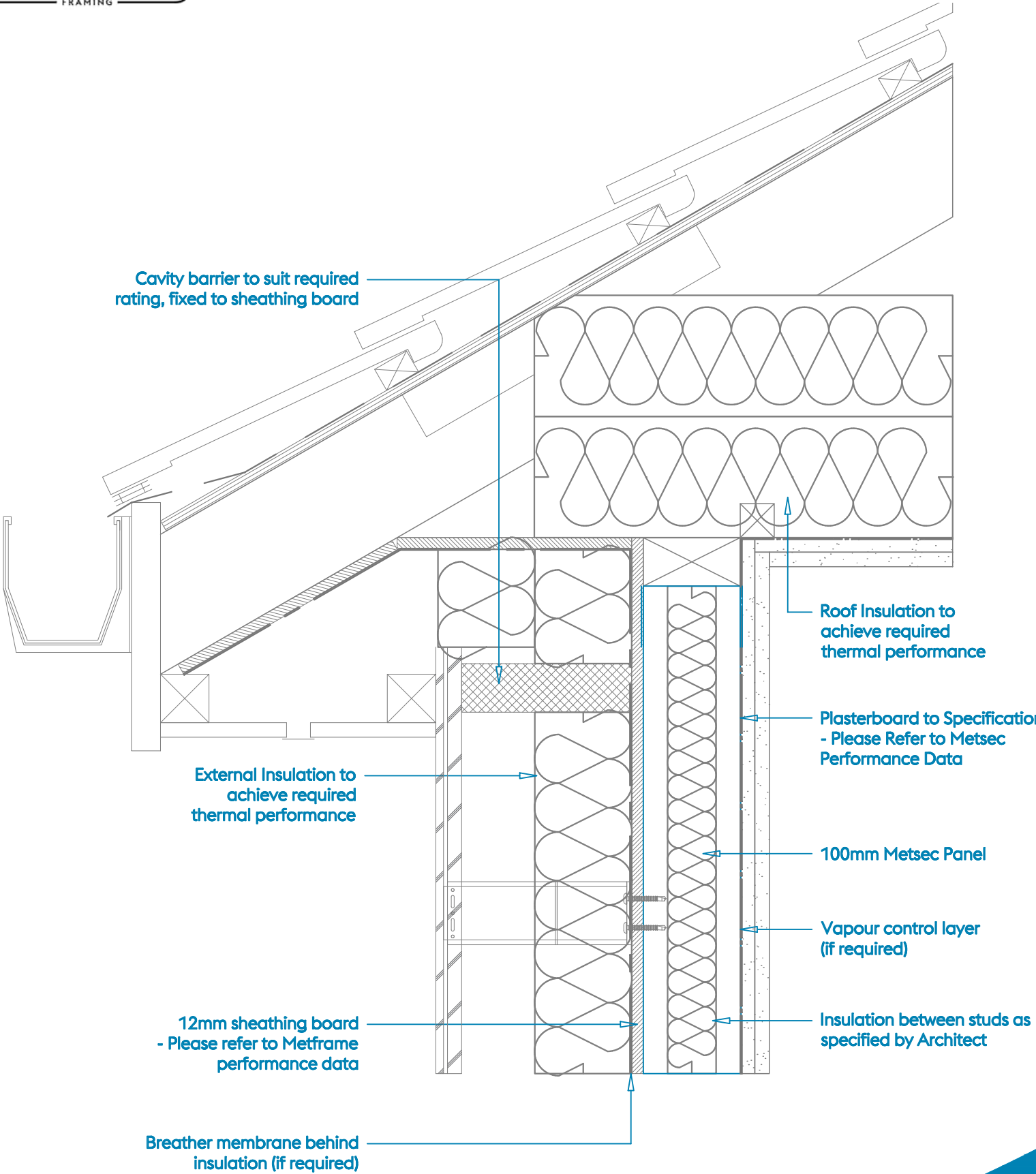


Linear Thermal Transmittance	Temperature factor
$\psi = 0.033$	$f = 0.96$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	27/09/2023
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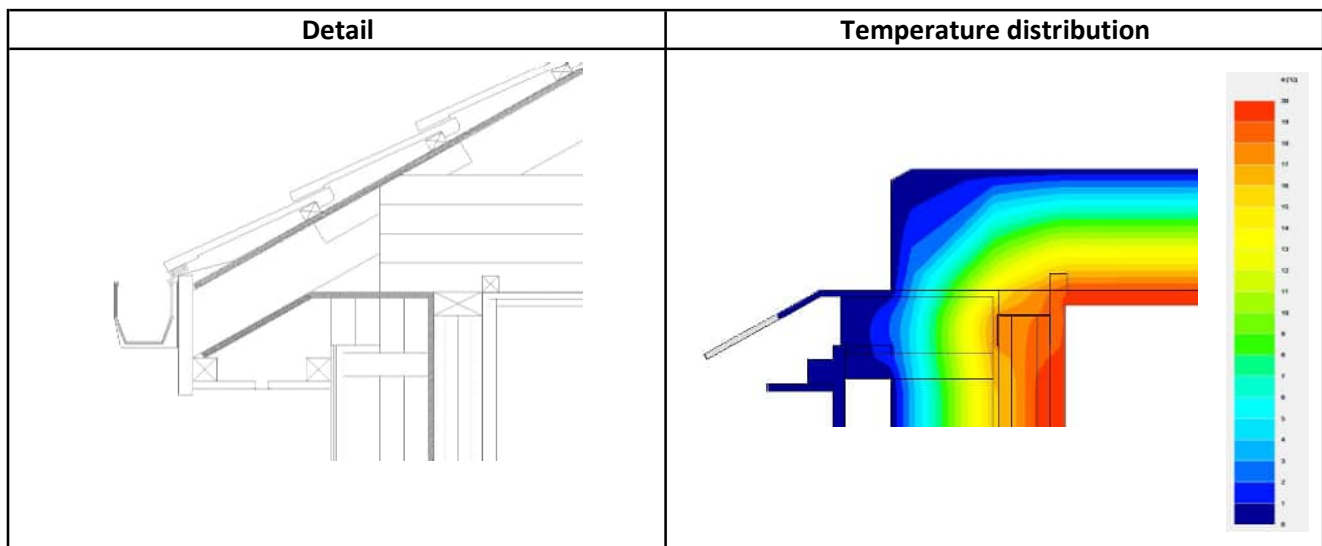
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Scale:	NTS	Drawn by:	OPJ	Approved by:	BG
Project:		Drawing No.		Revision:	
Standard Details		MF-A712		B	
		Date:		10/02/23	

E10 - Eaves (insulation at ceiling level)

Certificate number:
ATSP-E10-Q10622-0.0245

General construction specification checklist

- Metsec metal frame system
- Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 250mm insulation (0.044 W/mK) at ceiling level

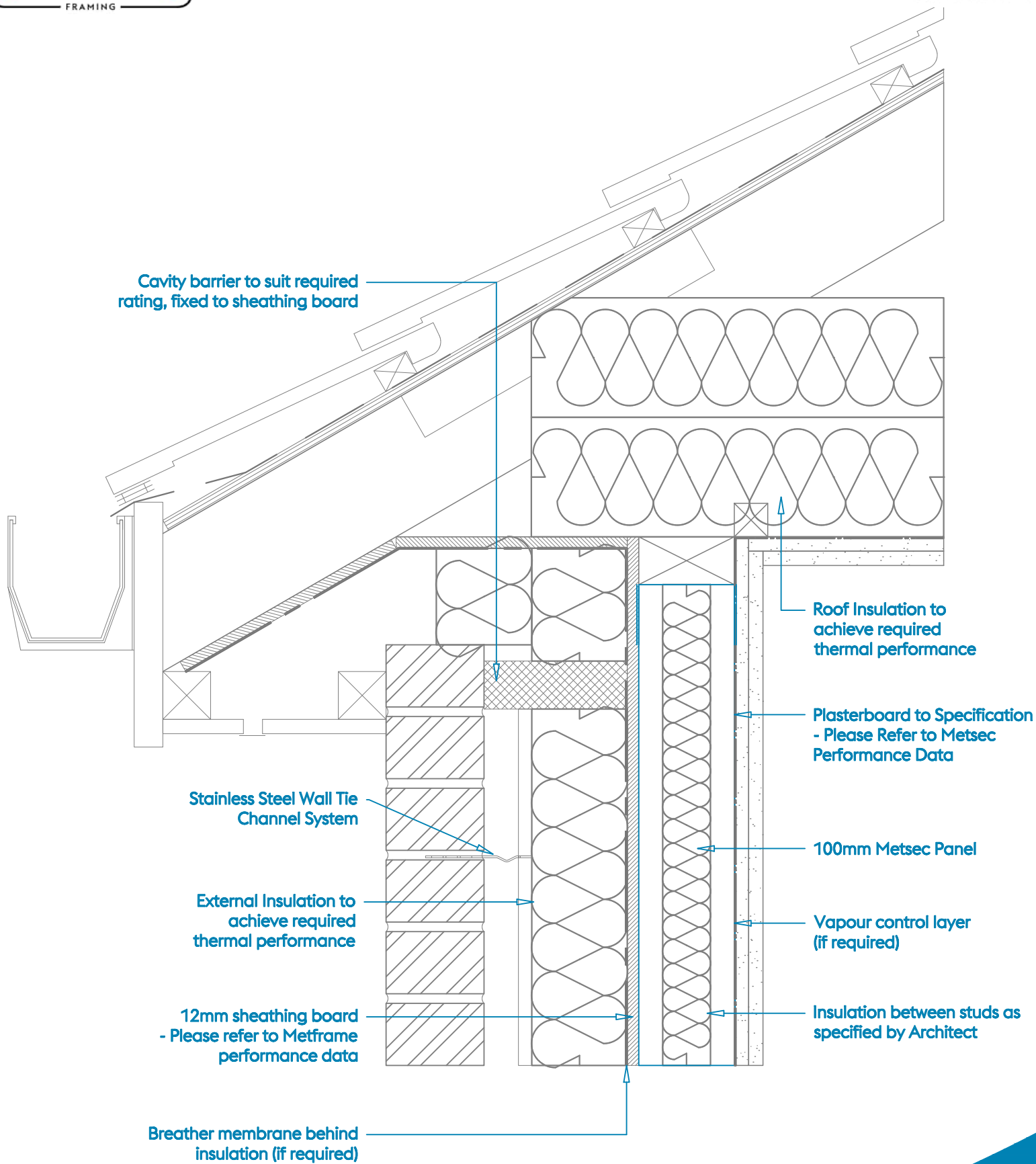


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0245$	$f = 0.95$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	27/09/2023
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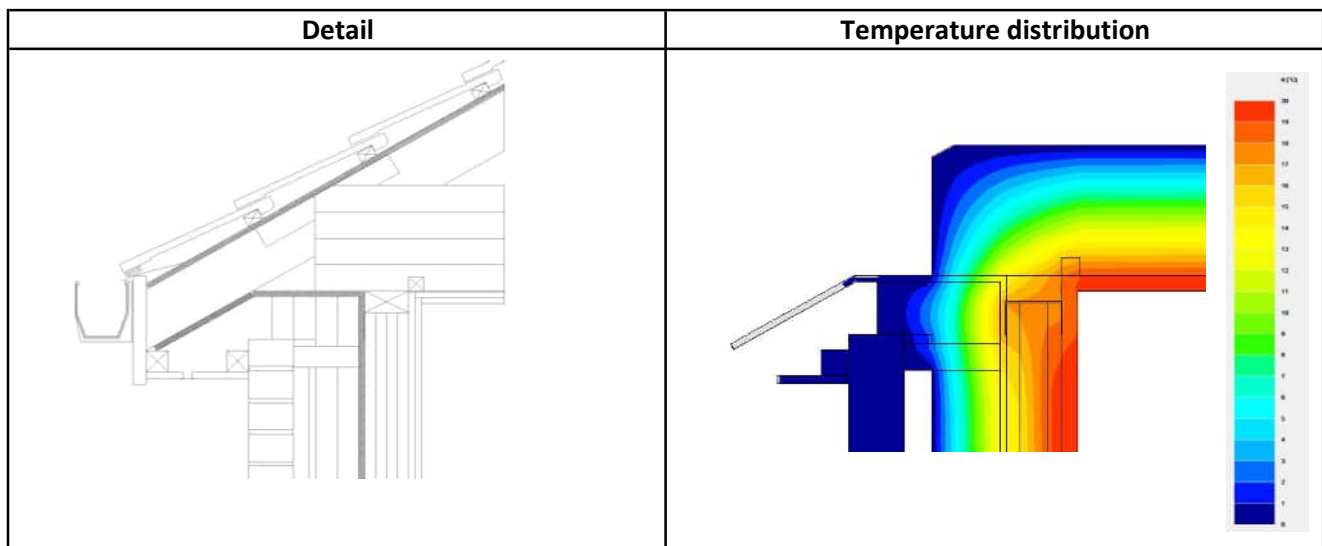
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Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A702	Revision: B	

E10 - Eaves (insulation at ceiling level)

Certificate number:
ATSP-E10-Q10622-0.0668

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 250mm insulation (0.044 W/mK) at ceiling level

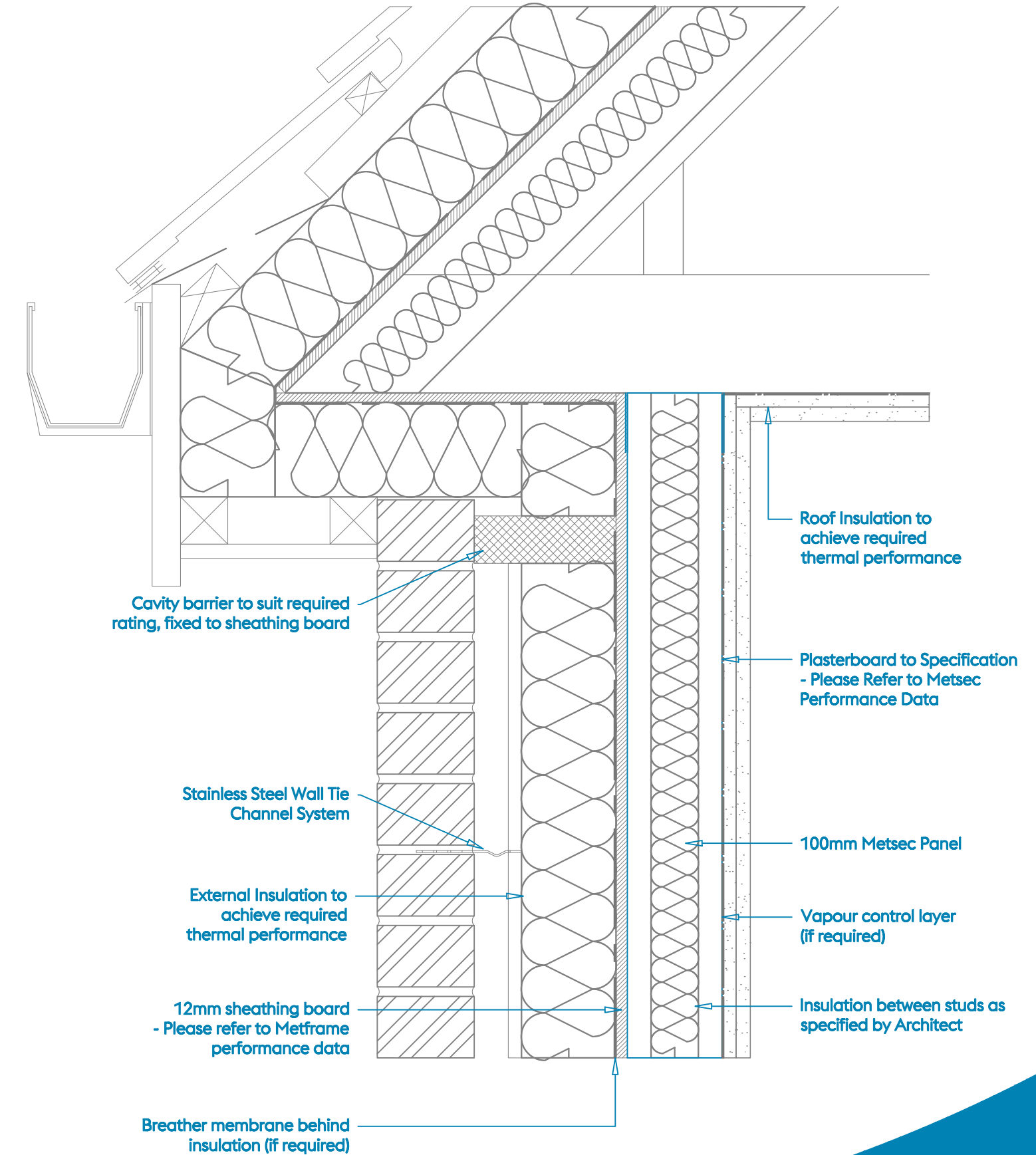


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0668$	$f = 0.95$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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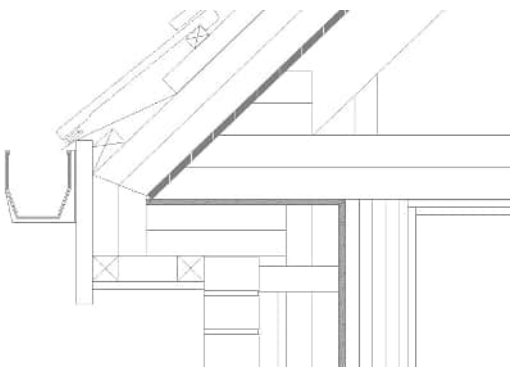
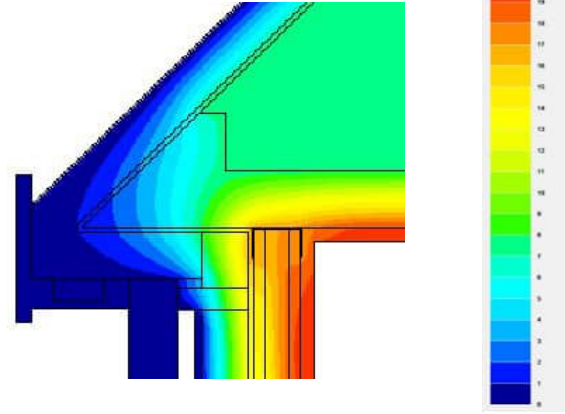
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Information		Brickwork external wall warm roof truss - eaves					
Scale:		Drawn by:		Approved by:		Date:	
NTS		OPJ		BG		10/02/23	
Project:				Drawing No.			Revision:
Standard Details				MF-A703			B

E11 - Eaves (insulation at rafter level)

Certificate number:
ATSP-E11-Q10622-0.0809

General construction specification checklist

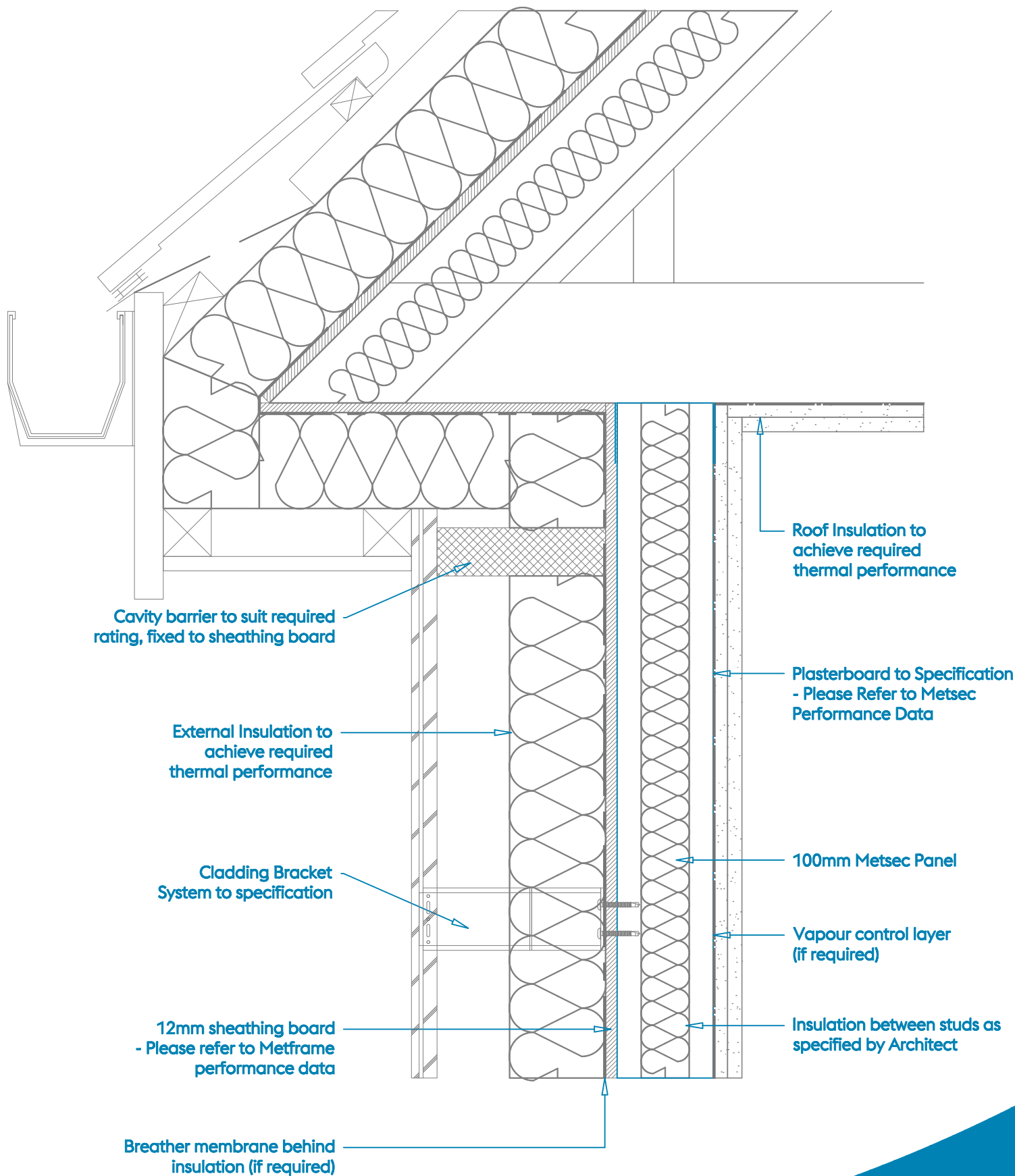
- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 125mm insulation (0.044 W/mK) at ceiling level
- 125mm insulation (0.035 W/mK) at rafter level

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\psi = 0.0809$	$f = 0.93$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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Date: 27/09/2023



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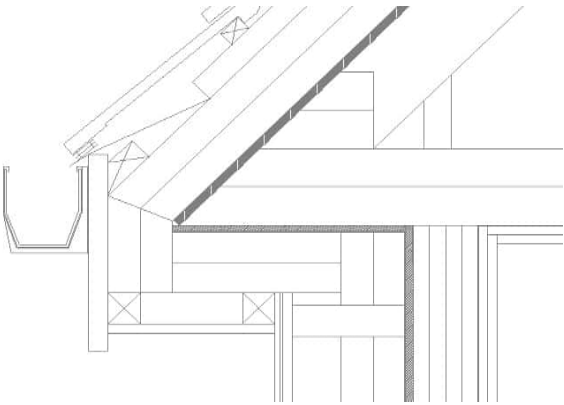
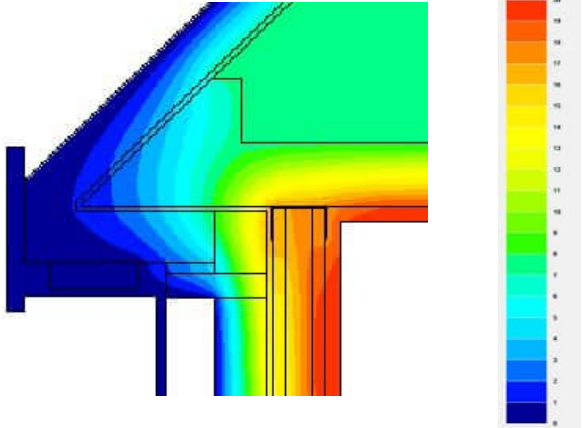
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Information		Clad external wall warm roof truss - eaves		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A713		B
		Date:		10/02/23

E11 - Eaves (insulation at rafter level)

Certificate number:
ATSP-E11-Q10622-0.0923

General construction specification checklist

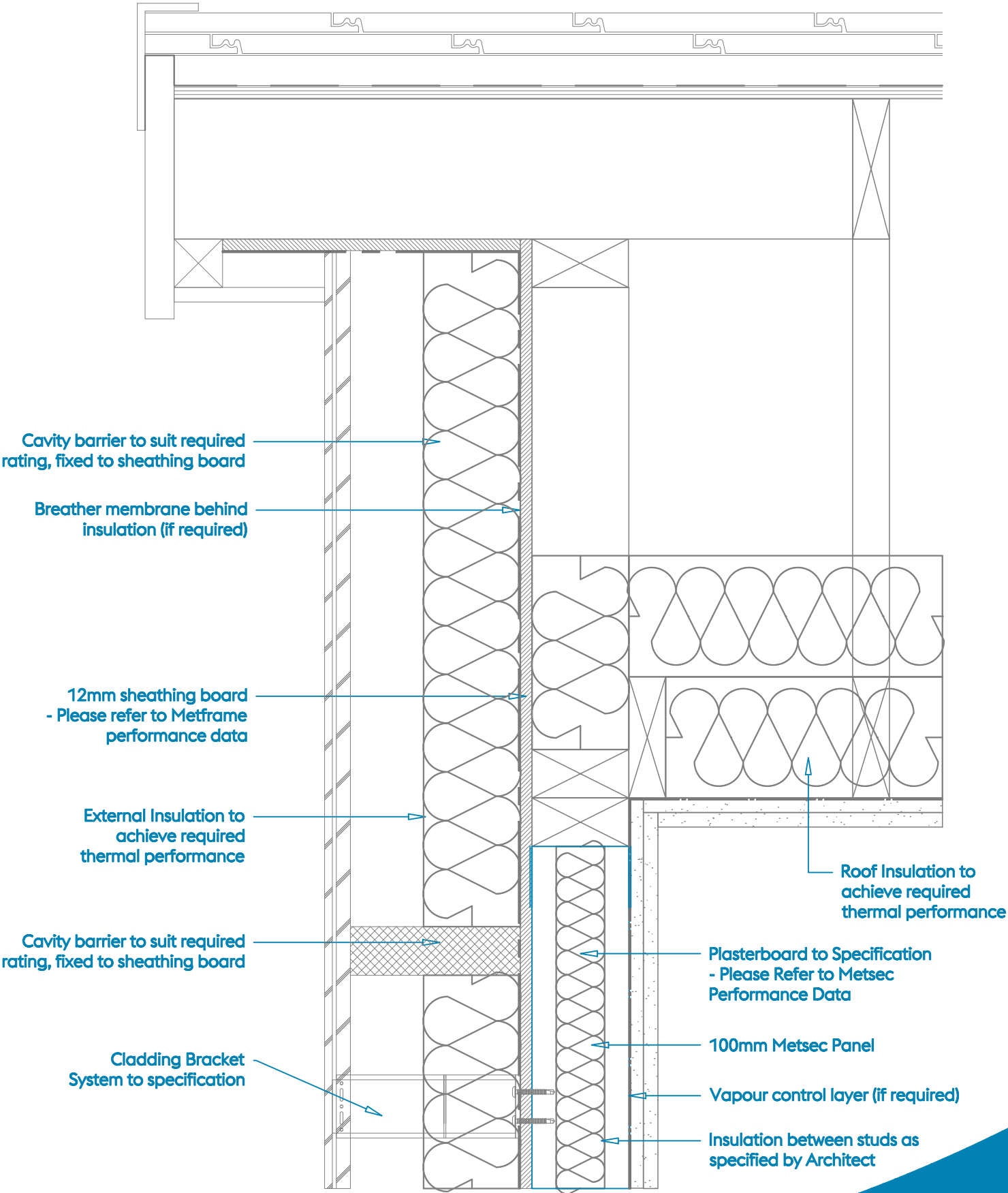
- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
 - Cavity closer (0.038 W/mK)
- 125mm insulation (0.044 W/mK) at ceiling level
- 125mm insulation (0.035 W/mK) at rafter level

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\psi = 0.0923$	$f = 0.93$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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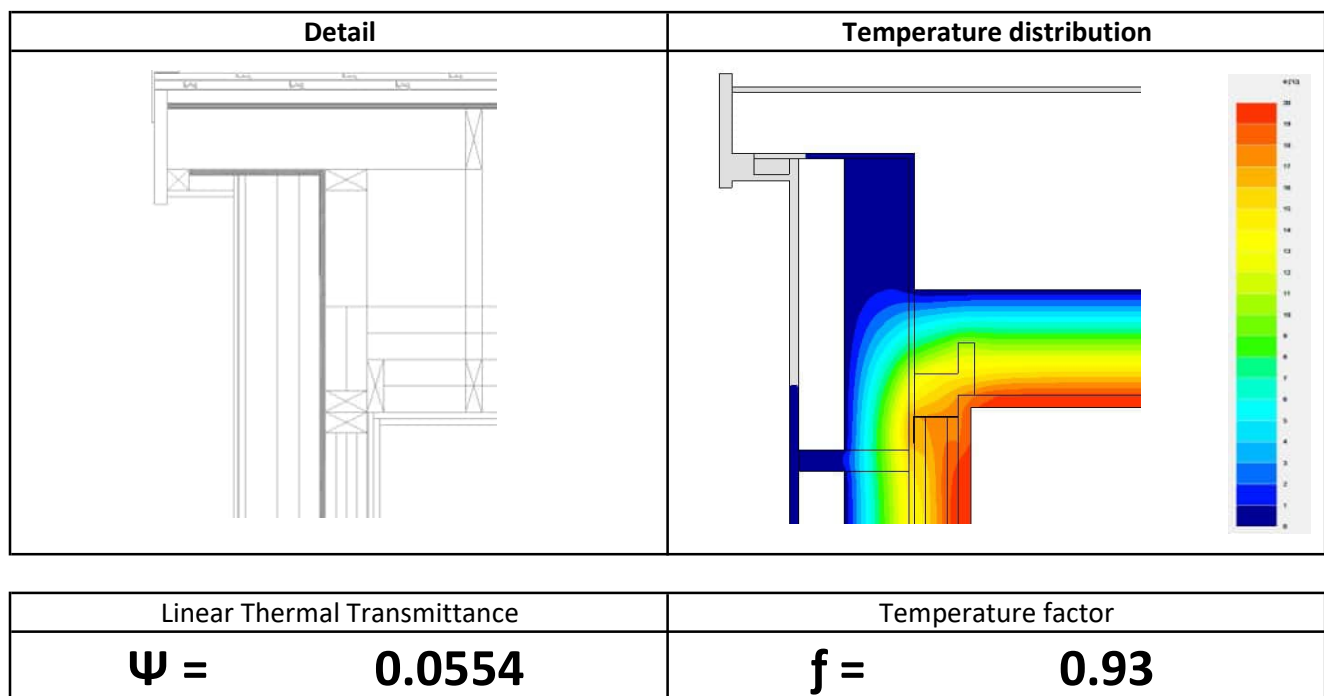
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Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23		
Project: Standard Details		Drawing No. MF-A714		Revision: B	

E12 - Gable (insulation at ceiling level)

Certificate number:
ATSP-E12-Q10622-0.0554

General construction specification checklist

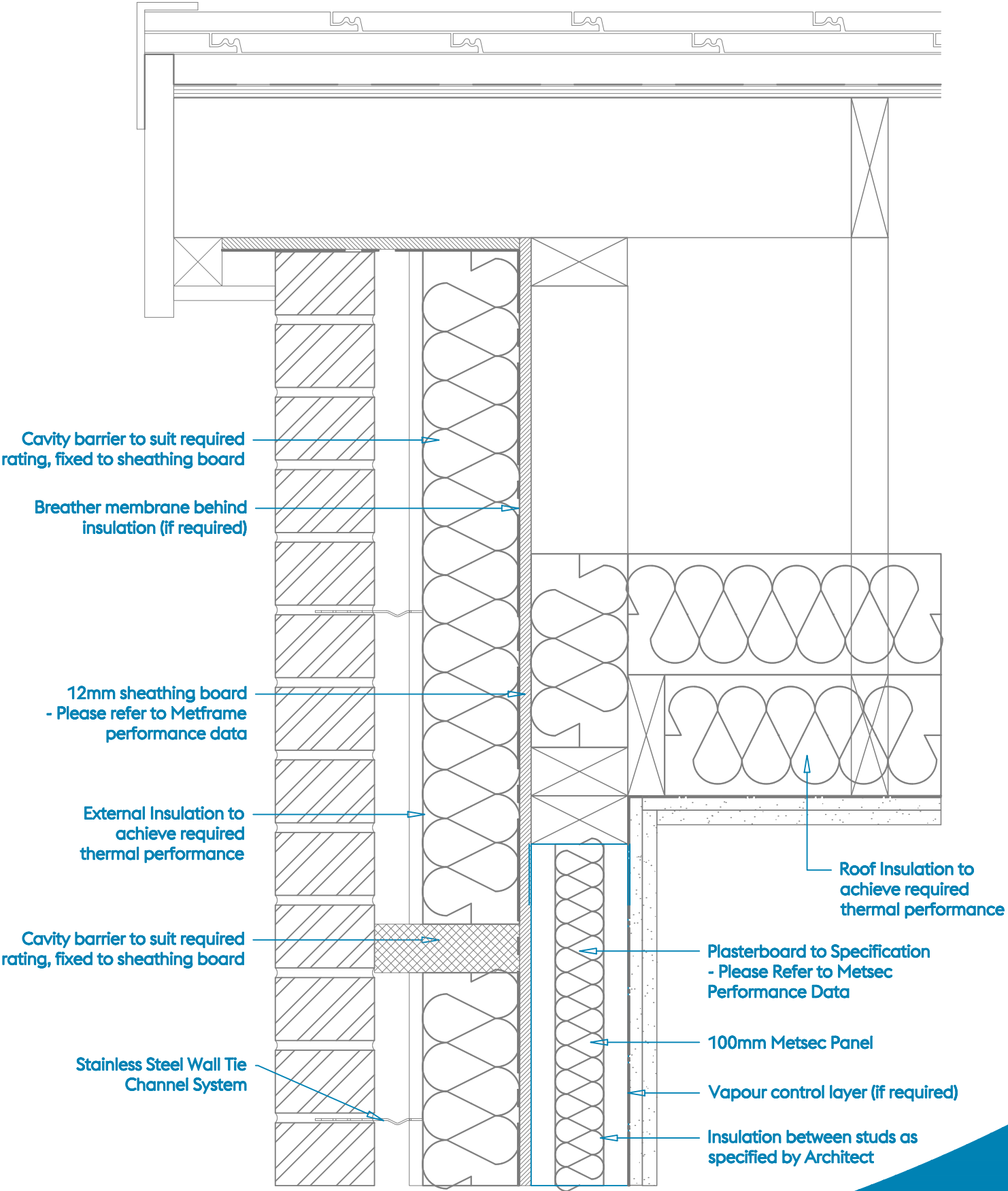
- Metsec metal frame system
- Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 250mm insulation (0.044 W/mK) at ceiling level



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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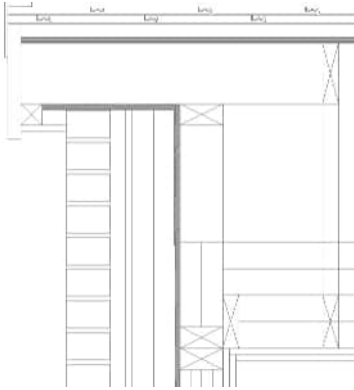
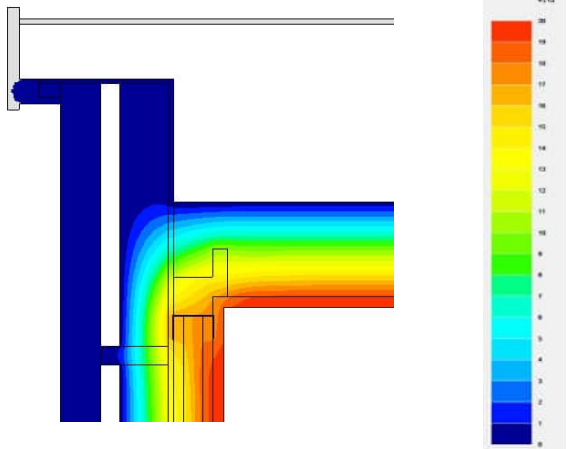
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Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A704	Revision: B	

E12 - Gable (insulation at ceiling level)

Certificate number:
ATSP-E12-Q10622-0.0574

General construction specification checklist

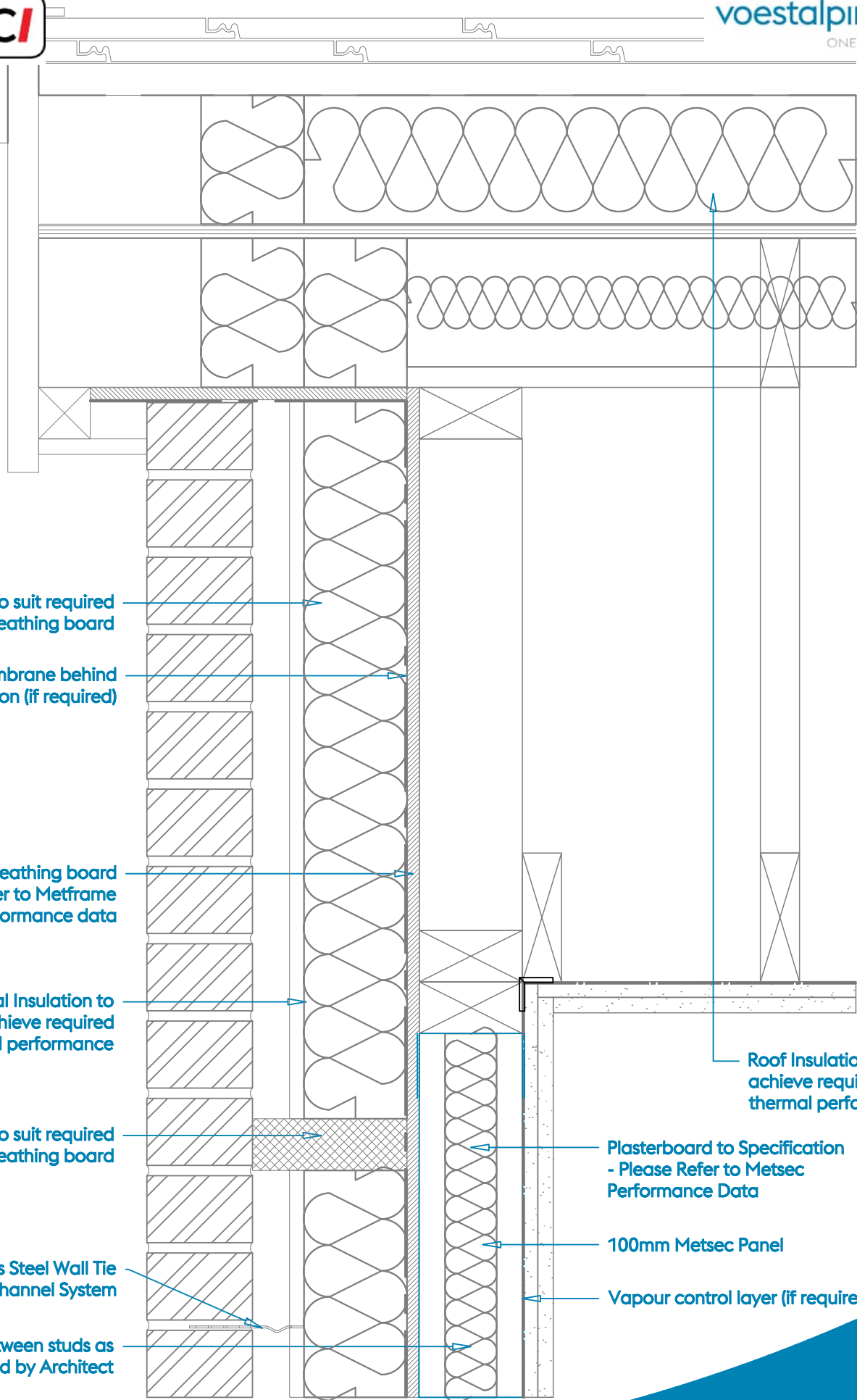
- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 250mm insulation (0.044 W/mK) at ceiling level

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\psi = 0.0574$	$f = 0.92$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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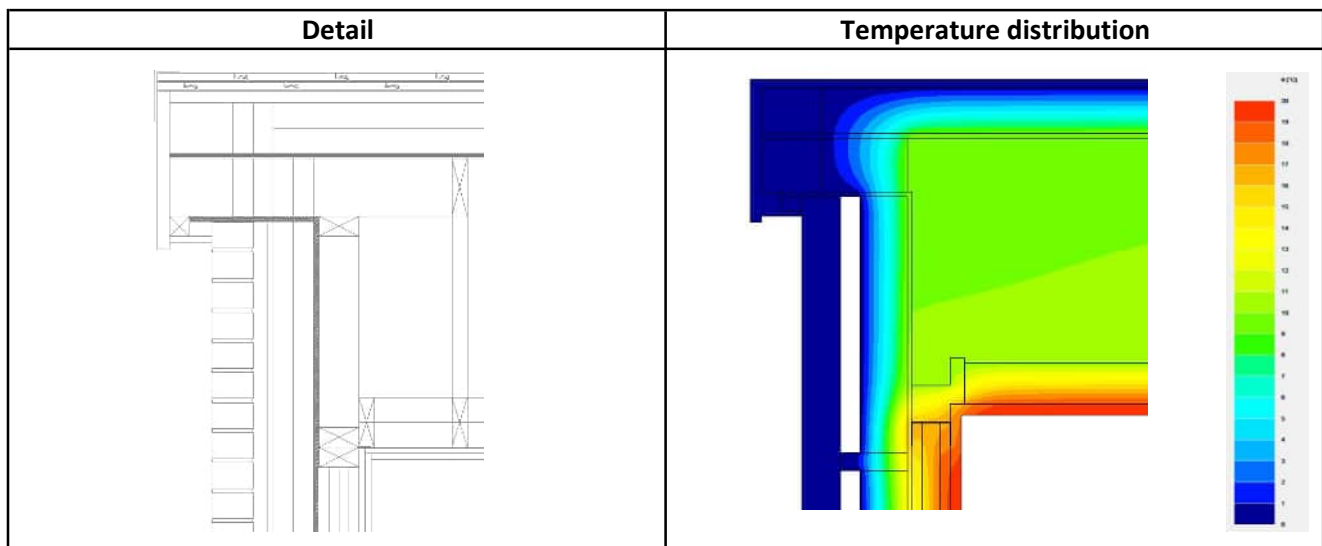
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Information		Brickwork external wall warm roof truss - gable		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A705		B
		Date:		10/02/23

E13 - Gable (insulation at rafter level)

Certificate number:
ATSP-E13-Q10622-0.098

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 125mm insulation (0.044 W/mK) at ceiling level
- 125mm insulation (0.035 W/mK) at rafter level

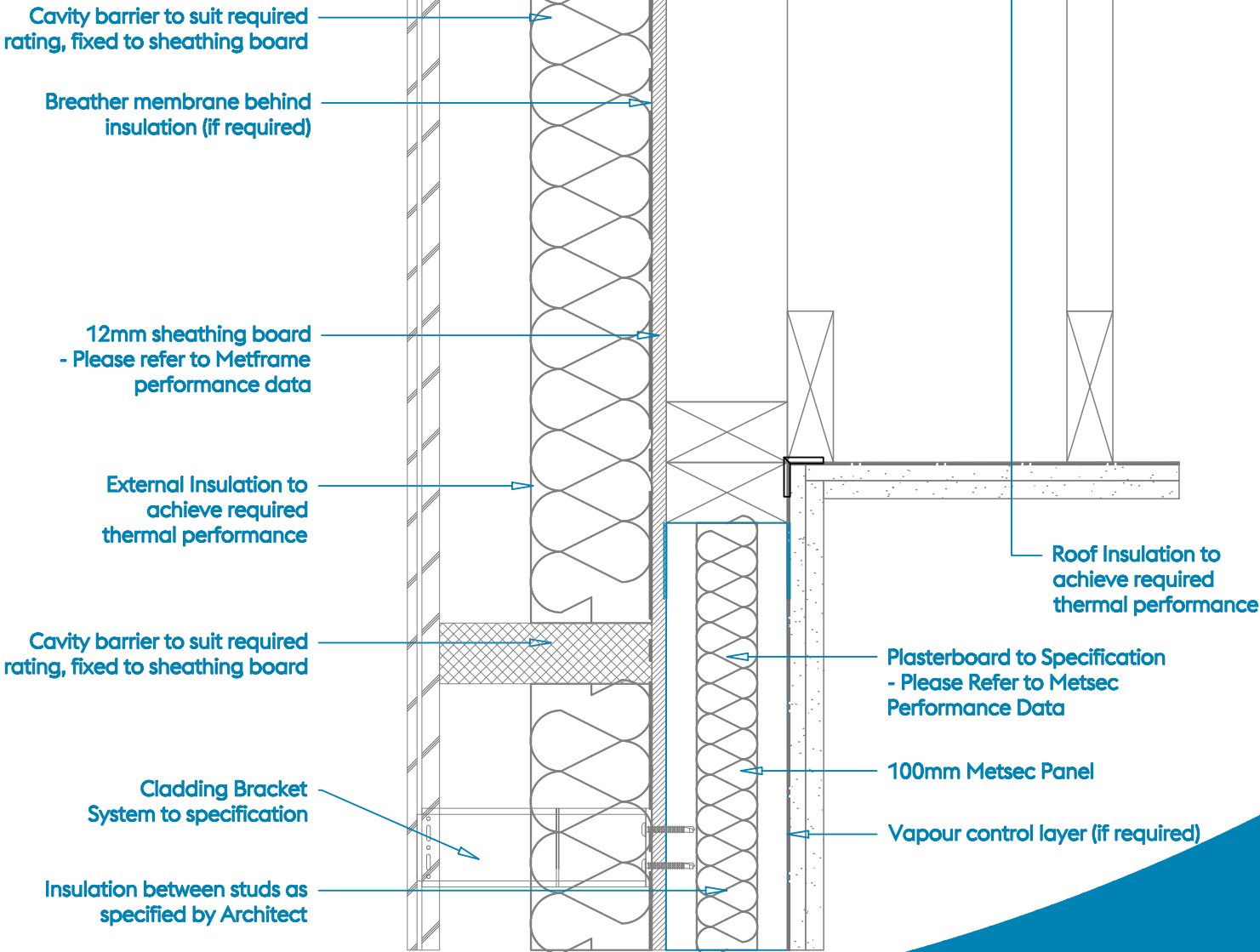


Linear Thermal Transmittance	Temperature factor
$\psi = 0.098$	$f = 0.90$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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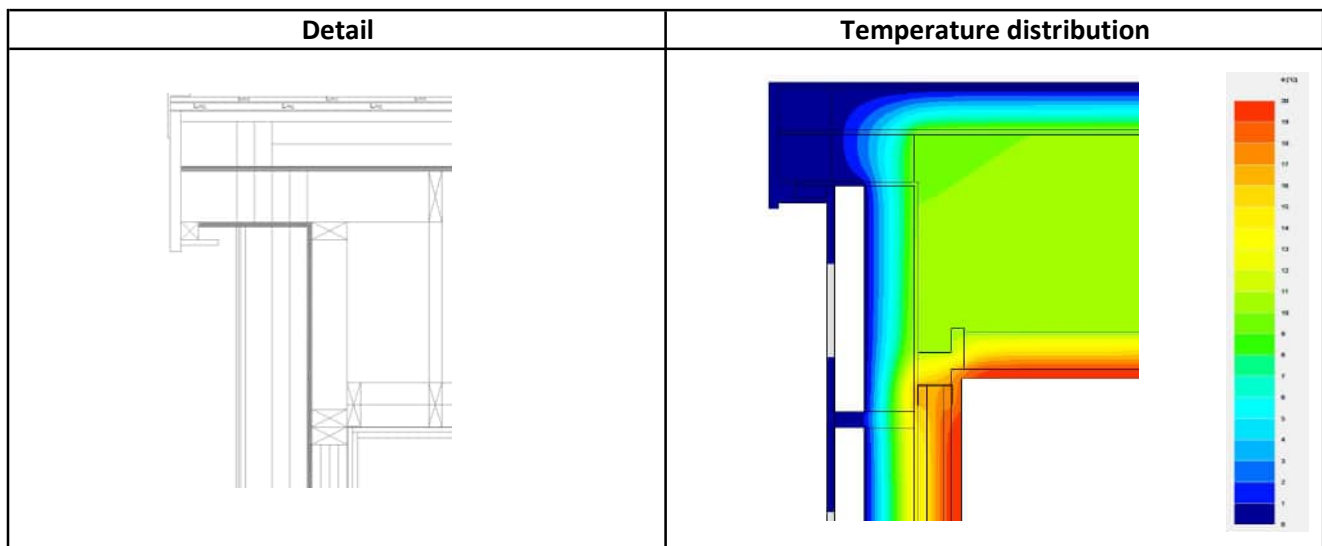
Issued For:		Title:	
Information		Clad external wall warm roof truss - gable	
Scale:	NTS	Drawn by:	OPJ
Approved by:		Date:	
BG		10/02/23	
Project:		Drawing No.	
Standard Details		MF-A715	
Revision:			B

E13 - Gable (insulation at rafter level)

Certificate number:
ATSP-E13-Q10622-0.0903

General construction specification checklist

- Metsec metal frame system
- Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 125mm insulation (0.044 W/mK) at ceiling level
- 125mm insulation (0.035 W/mK) at rafter level

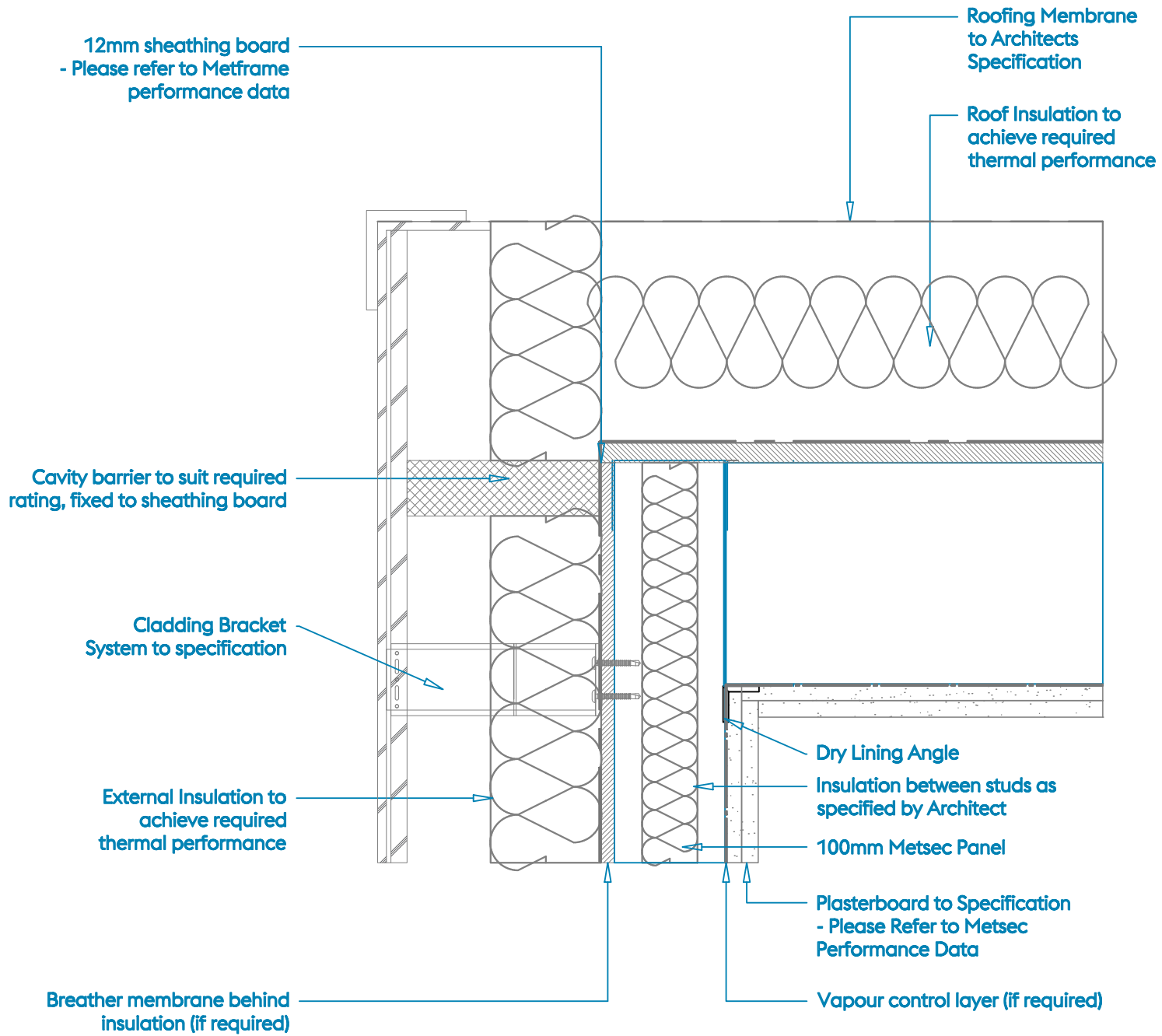


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0903$	$f = 0.91$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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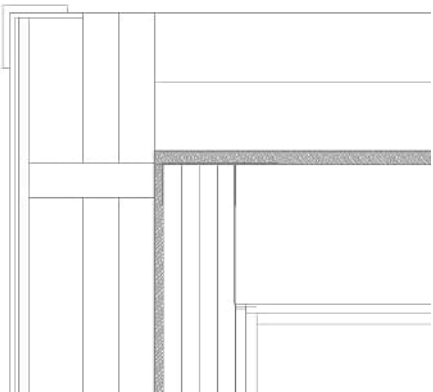
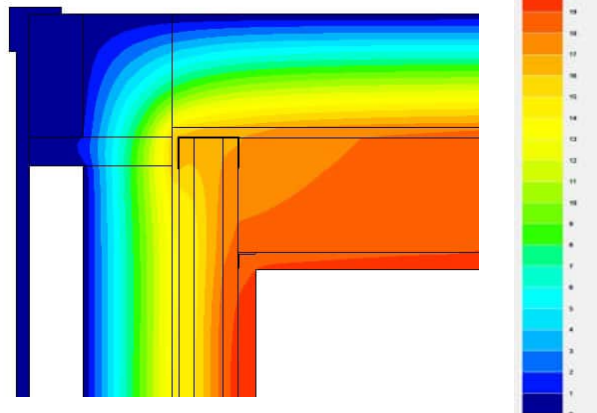
Information		Title: Clad external wall to flat roof joist		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A711	Revision: B	

E14 - Flat roof

Certificate number:
ATSP-E14-Q10622-0.0772

General construction specification checklist

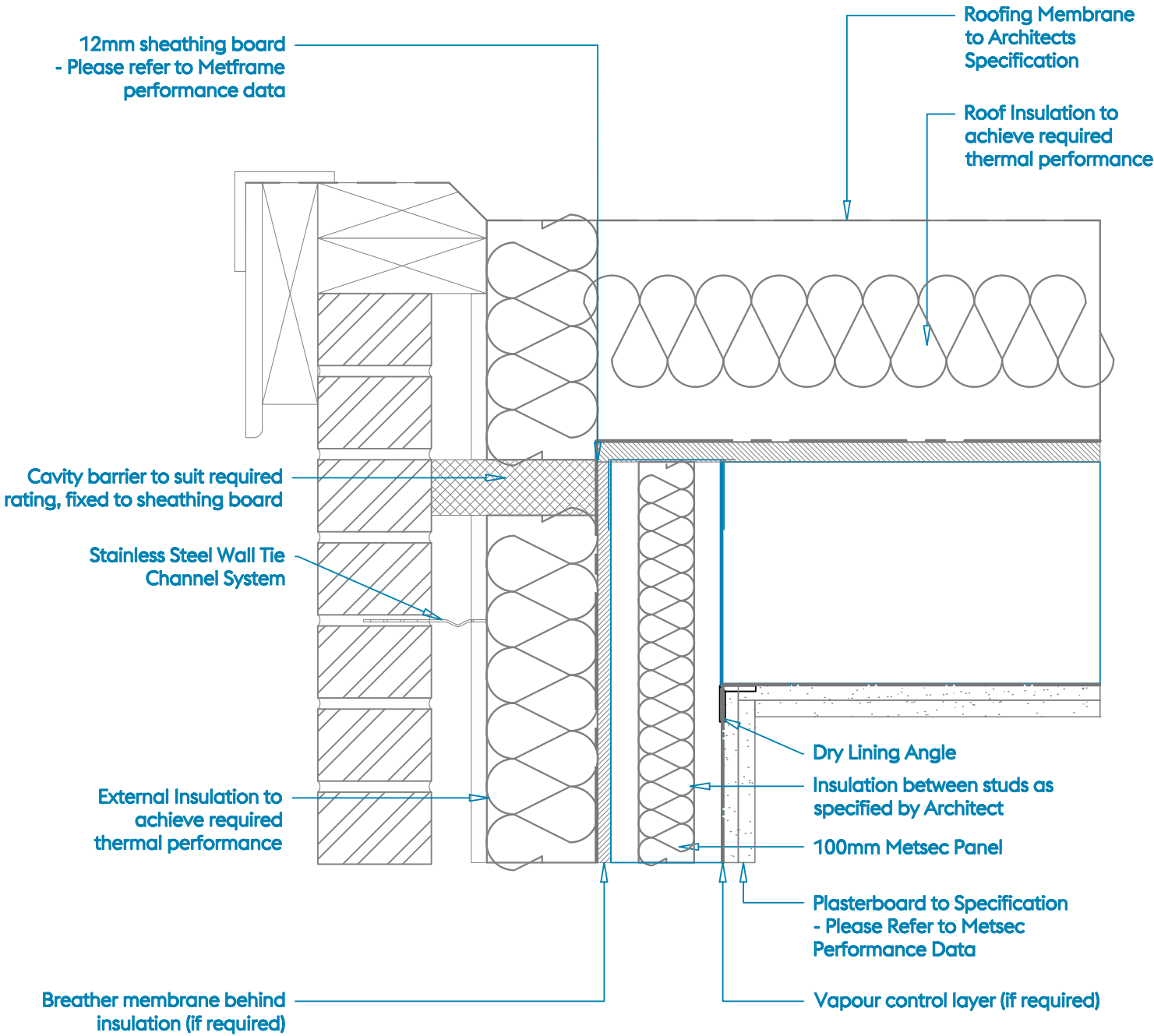
- Metsec metal frame system
- Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 200mm insulation (0.029 W/mK) on flat roof

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\psi = 0.0772$	$f = 0.94$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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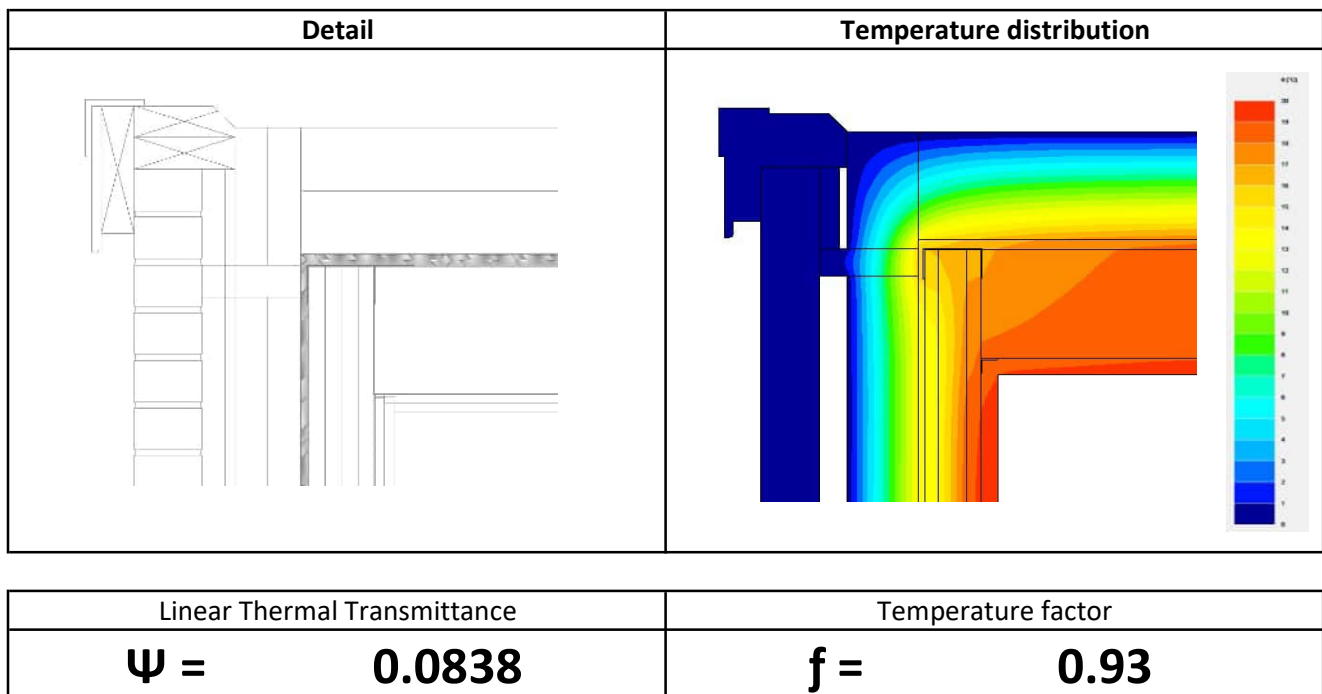
Information		Title: Brickwork external wall to flat roof joist		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A701	Revision: B	

E14 - Flat roof

Certificate number:
ATSP-E14-Q10622-0.0838

General construction specification checklist

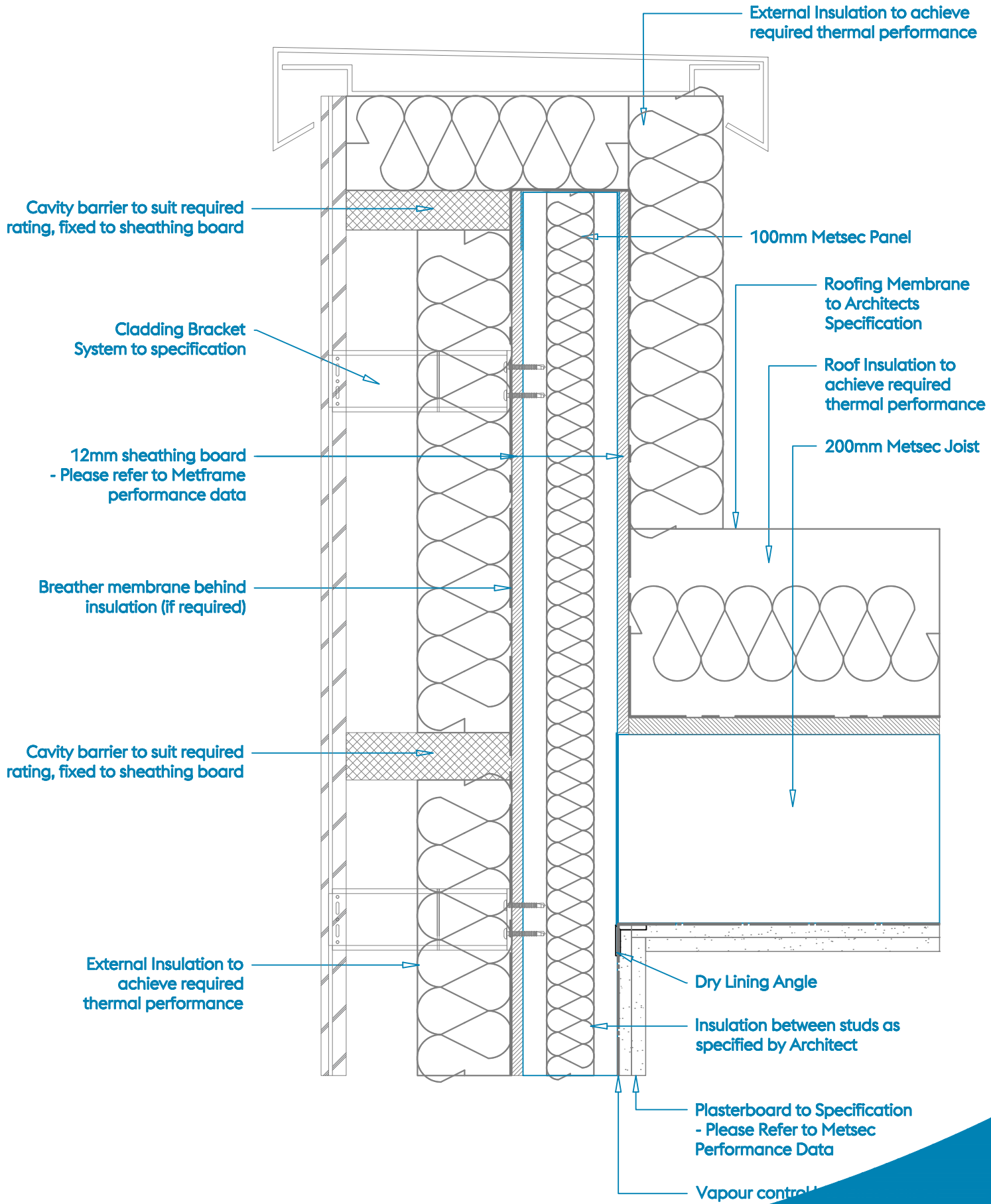
- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 200mm insulation (0.029 W/mK) on flat roof



Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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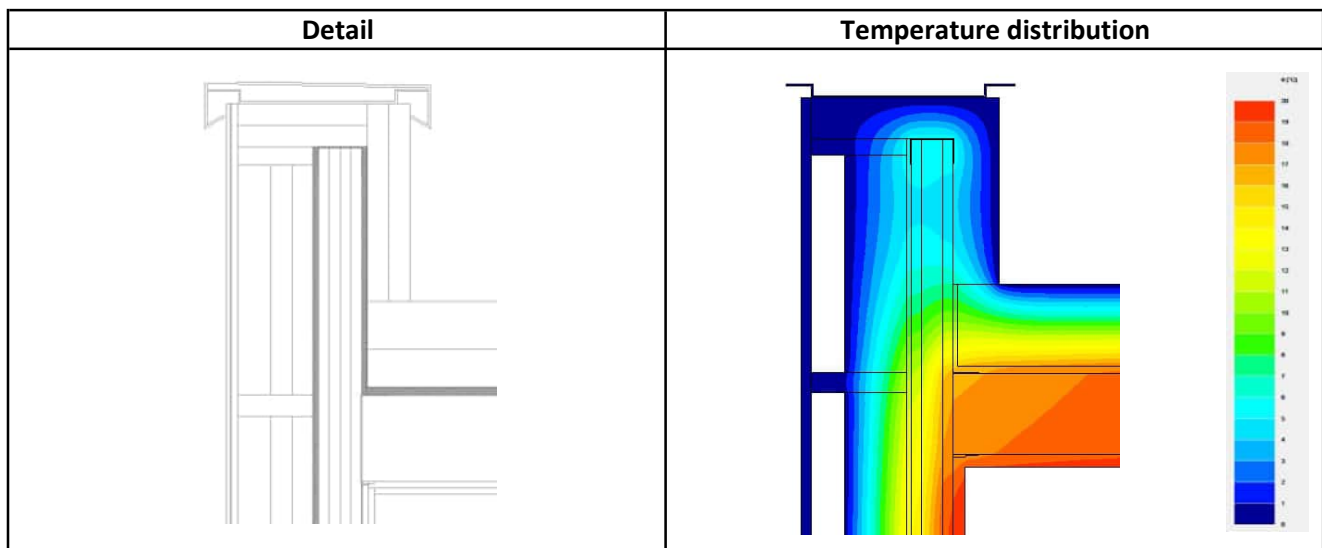
Issued For:		Title:		
Information		Clad external wall to flat roof joist - parapet		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A710		B
				10/02/23

E15 - Flat roof with parapet

Certificate number:
ATSP-E15-Q10622-0.0432

General construction specification checklist

- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
 - Cavity closer (0.038 W/mK)
- 200mm insulation (0.029 W/mK) on flat roof

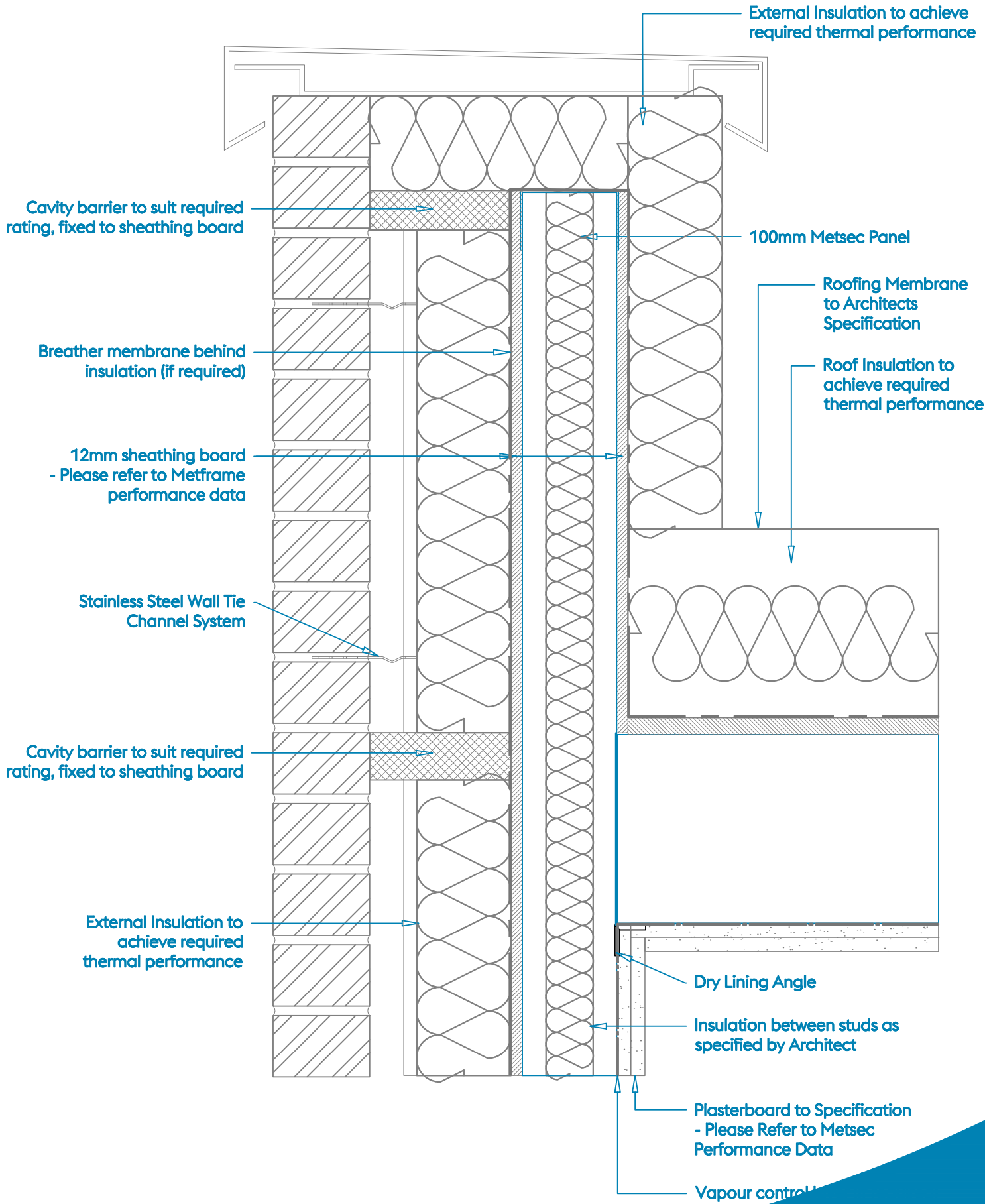


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0432$	$f = 0.91$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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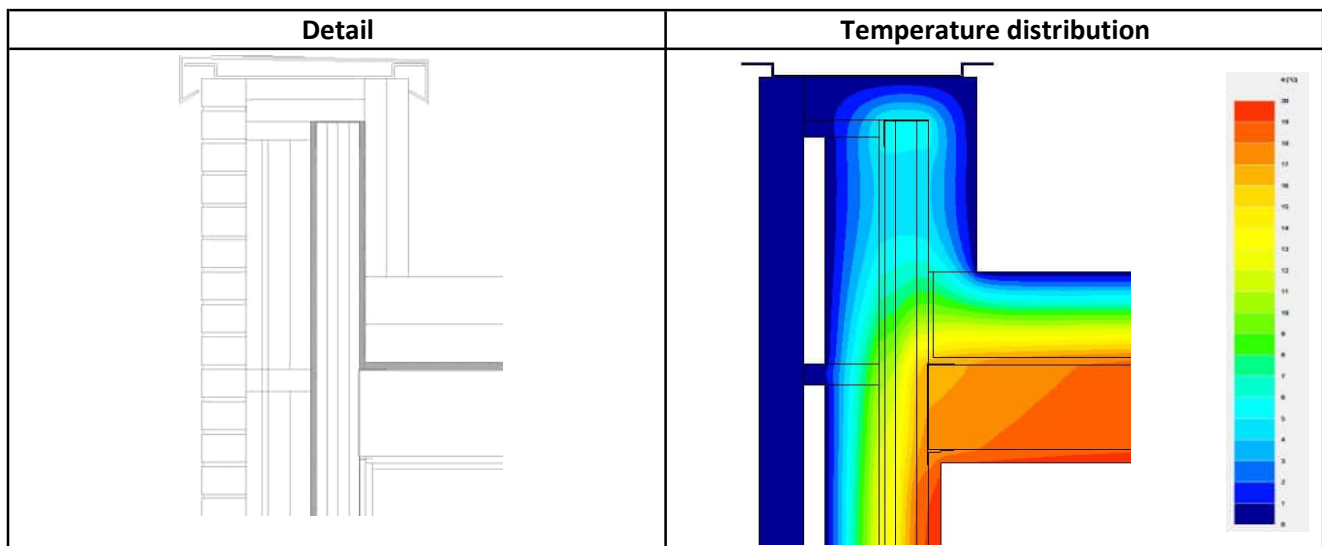
Issued For:		Title:	
Information		Brickwork external wall to flat roof joist - parapet	
Scale:	NTS	Drawn by:	OPJ
Approved by:	BG	Date:	10/02/23
Project:	Standard Details		Revision:
	MF-A700		B

E15 - Flat roof with parapet

Certificate number:
ATSP-E15-Q10622-0.1441

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)
- 200mm insulation (0.029 W/mK) on flat roof

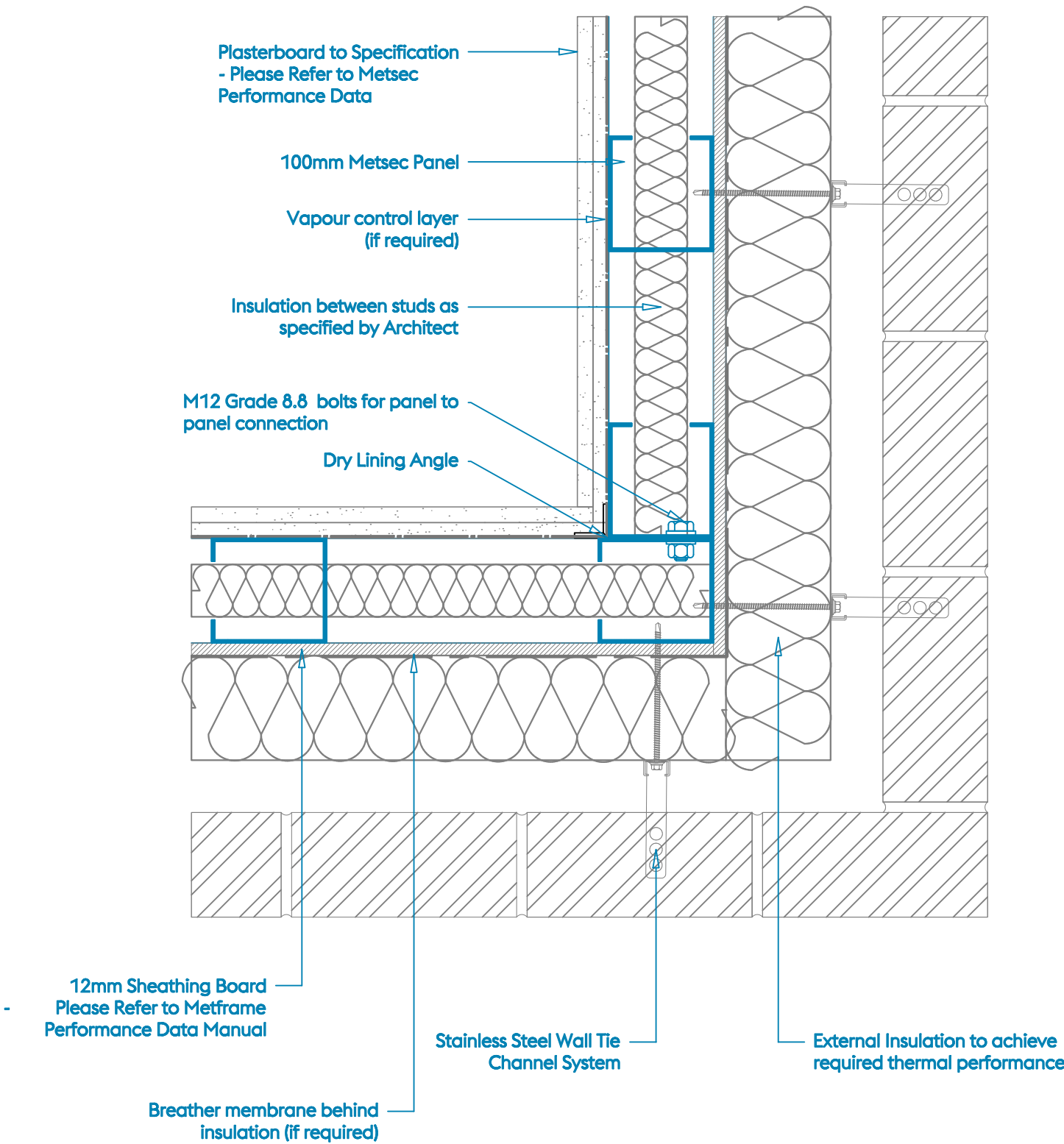


Linear Thermal Transmittance	Temperature factor
$\psi = 0.1441$	$f = 0.91$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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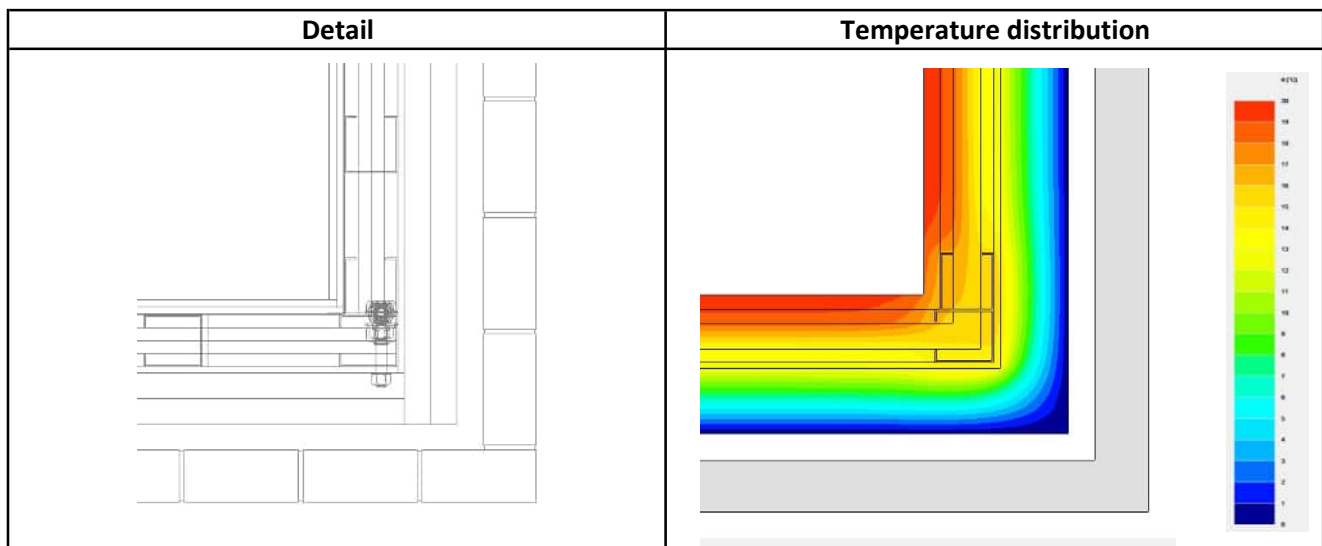
Information		Brickwork external wall corner junction		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A222		B
		Date:		10/02/23

E16 - Corner (normal)

Certificate number:
ATSP-E16-Q10622-0.024

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

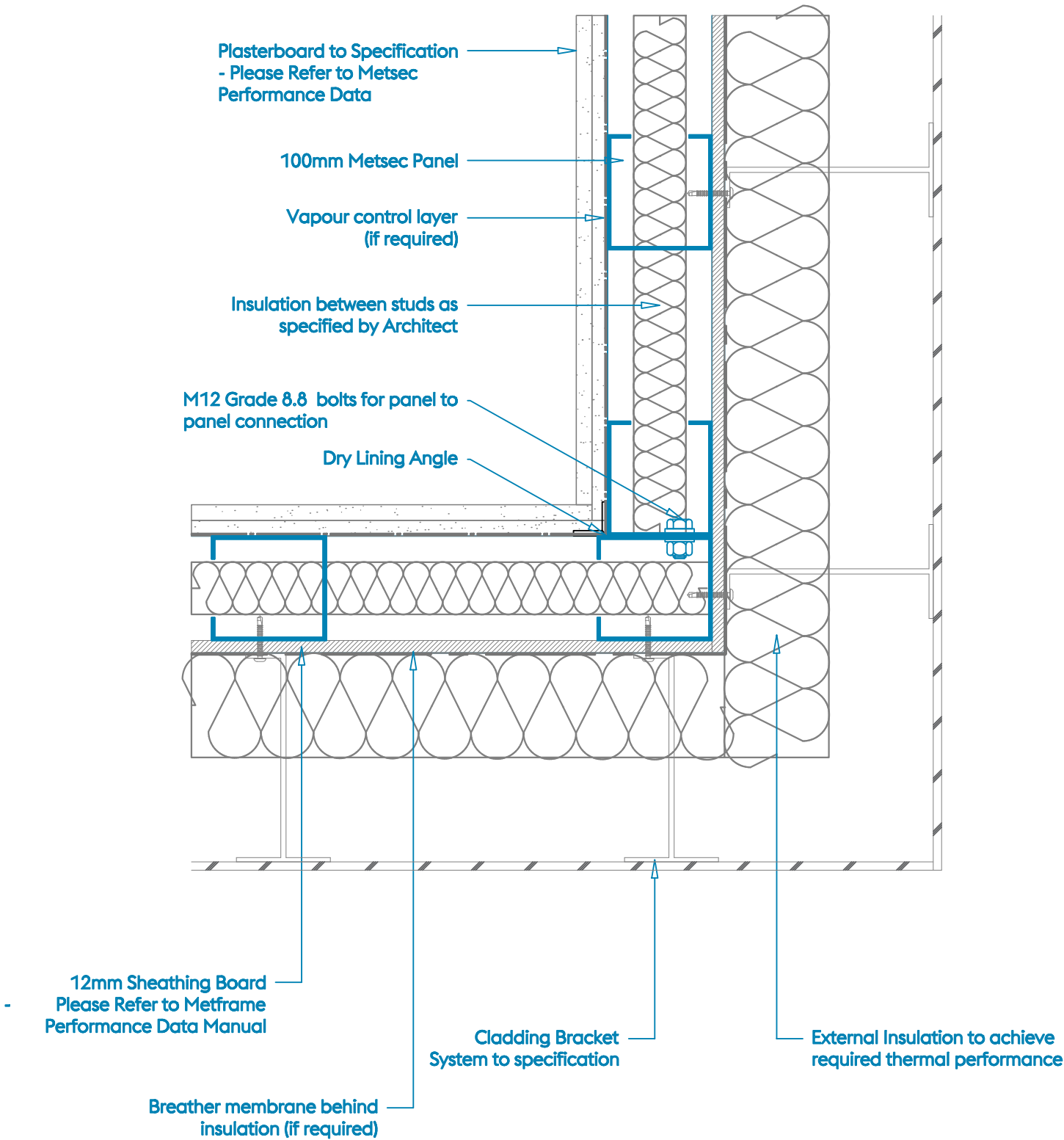


Linear Thermal Transmittance	Temperature factor
$\psi = 0.024$	$f = 0.90$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

Prepared by:	Karim Meraga
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Date:	28/09/2023
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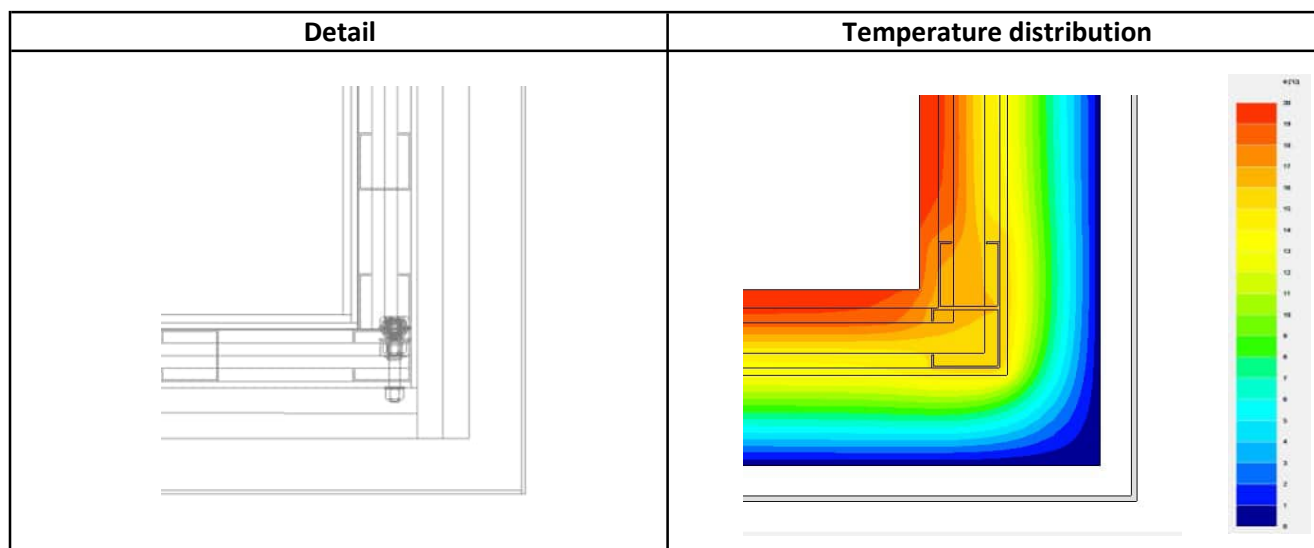
Information		Clad external wall corner junction		
Scale:	NTS	Drawn by:	OPJ	Approved by:
Project:		Drawing No.		Revision:
Standard Details		MF-A232		B

E16 - Corner (normal)

Certificate number:
ATSP-E16-Q10622-0.0269

General construction specification checklist

- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

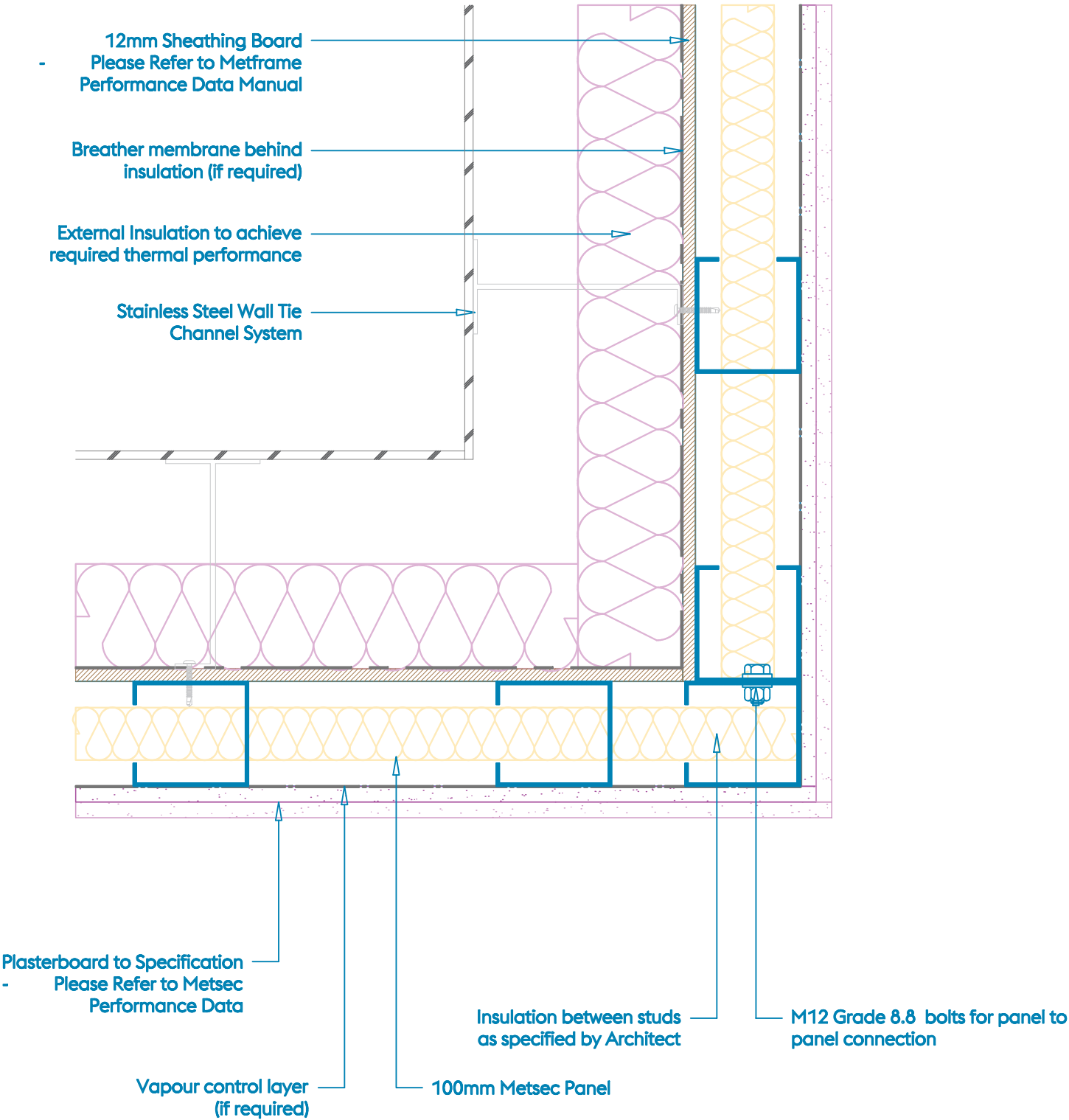


Linear Thermal Transmittance	Temperature factor
$\psi = 0.0269$	$f = 0.91$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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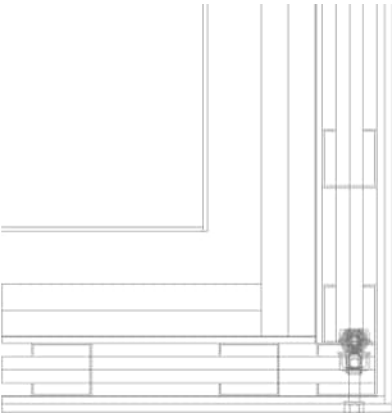
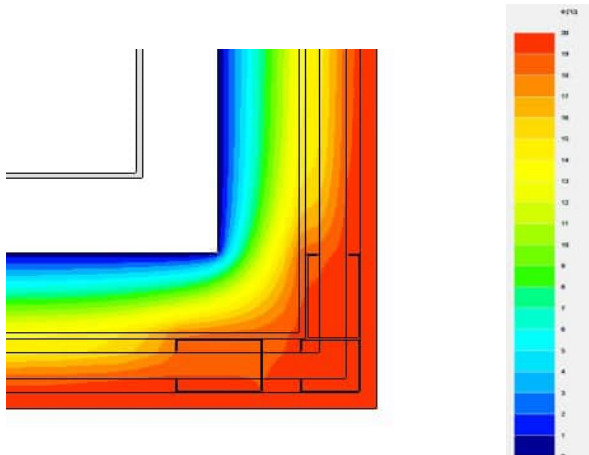
Information		Title: Clad external wall corner junction - Inverted		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A233	Revision: B	

E17 - Corner (inverted)

Certificate number:
ATSP-E17-Q10622--0.0834

General construction specification checklist

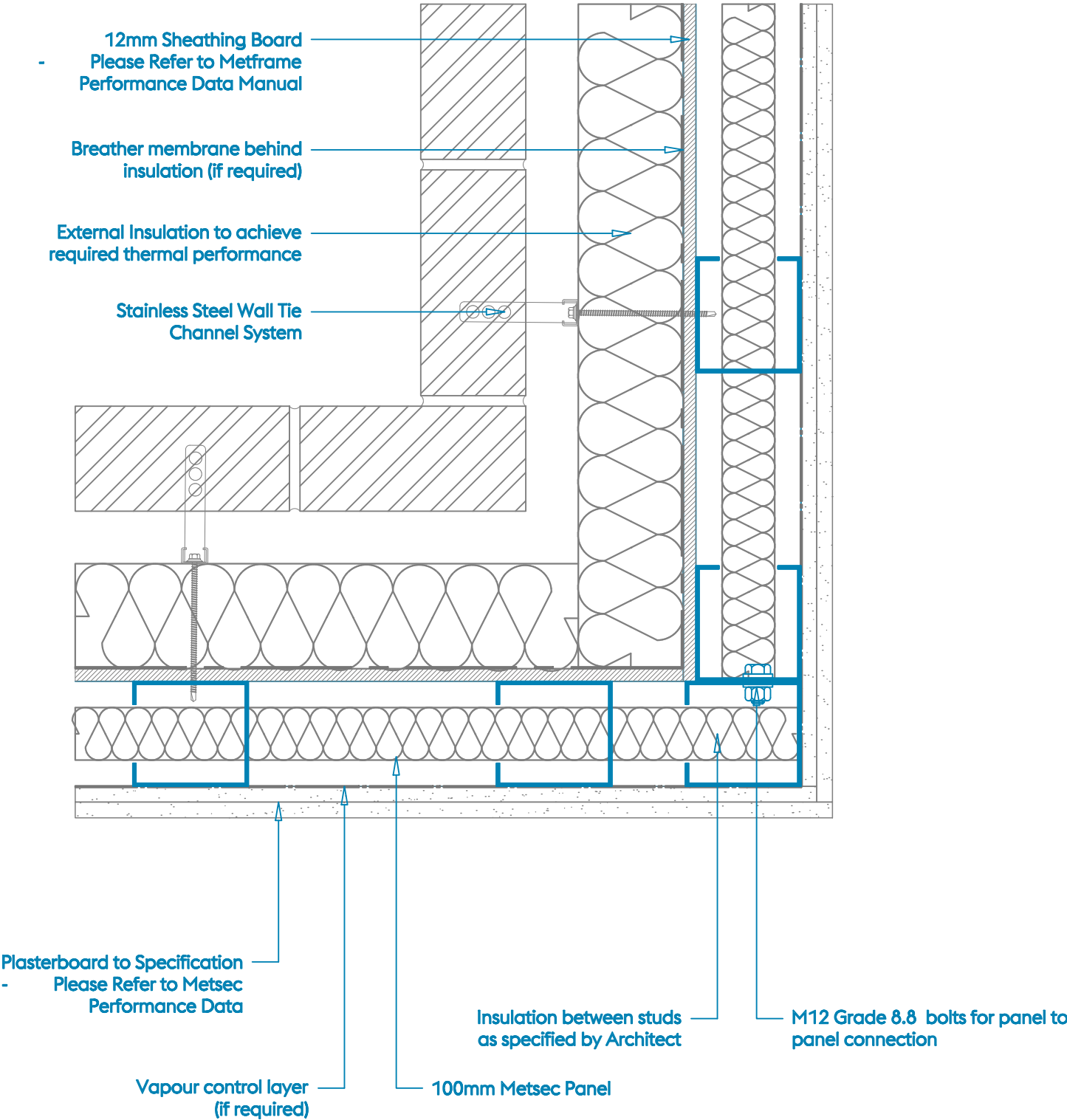
- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\Psi = -0.0834$	$f = 0.98$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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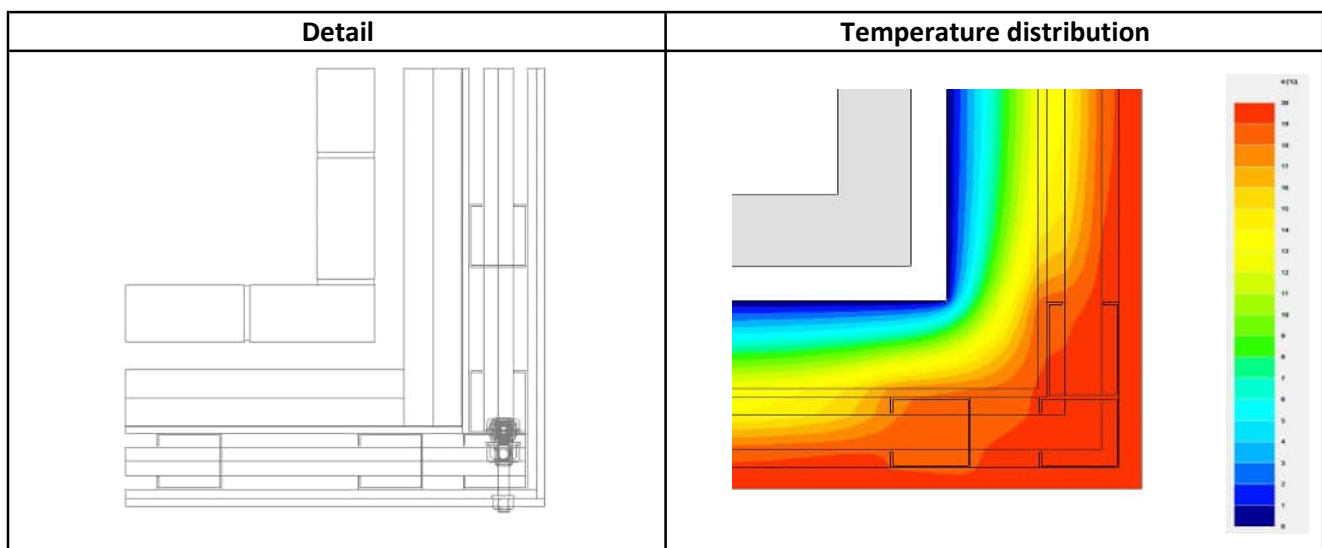
Information		Title: Brickwork external wall corner junction - inverted		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A223	Revision: B	

E17 - Corner (inverted)

Certificate number:
ATSP-E17-Q10622--0.1019

General construction specification checklist

- Metsec metal frame system
- Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

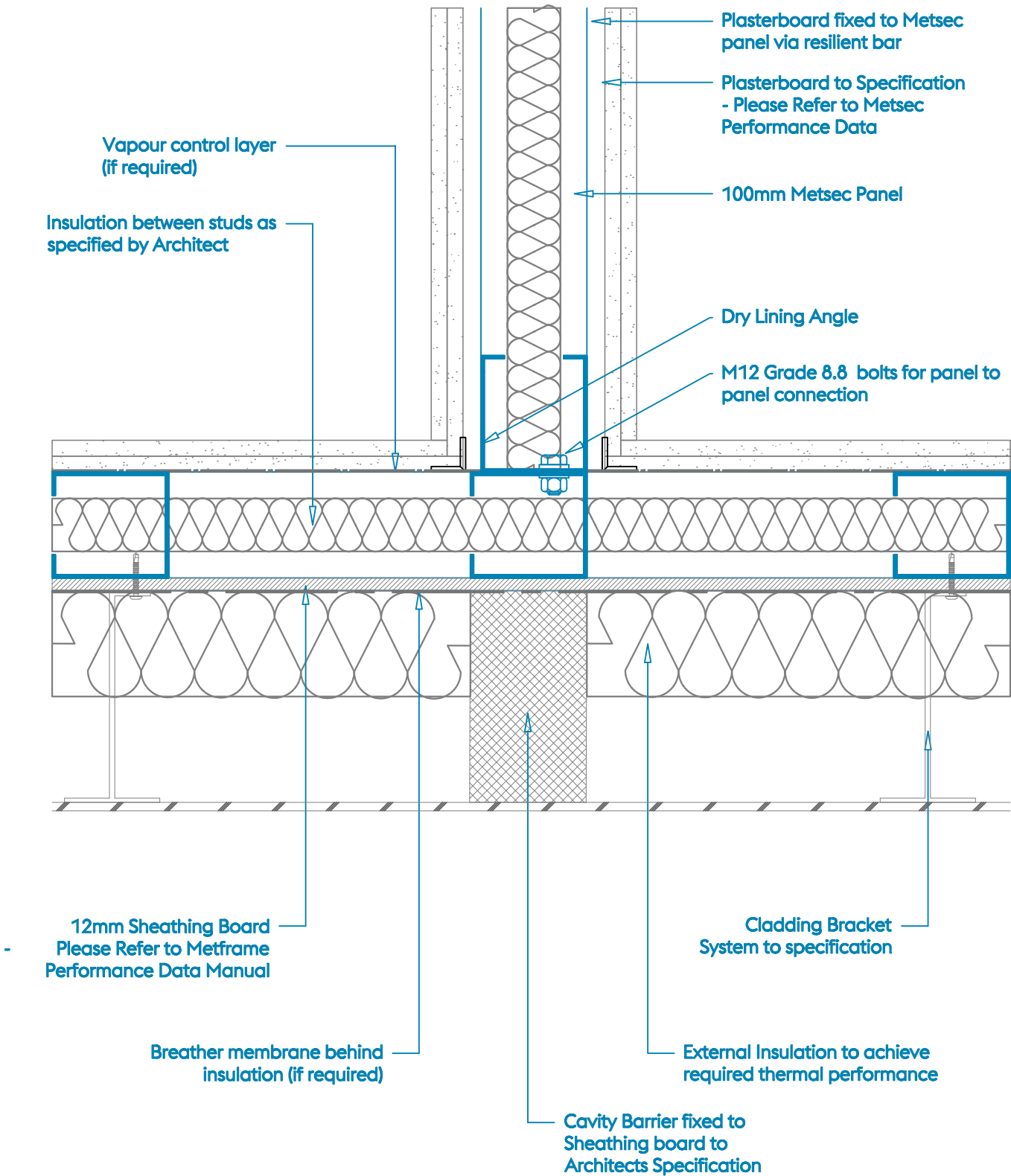


Linear Thermal Transmittance	Temperature factor
$\psi = -0.1019$	$f = 0.97$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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Information		Title: Clad external wall to single party wall junction		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A230		Revision: B

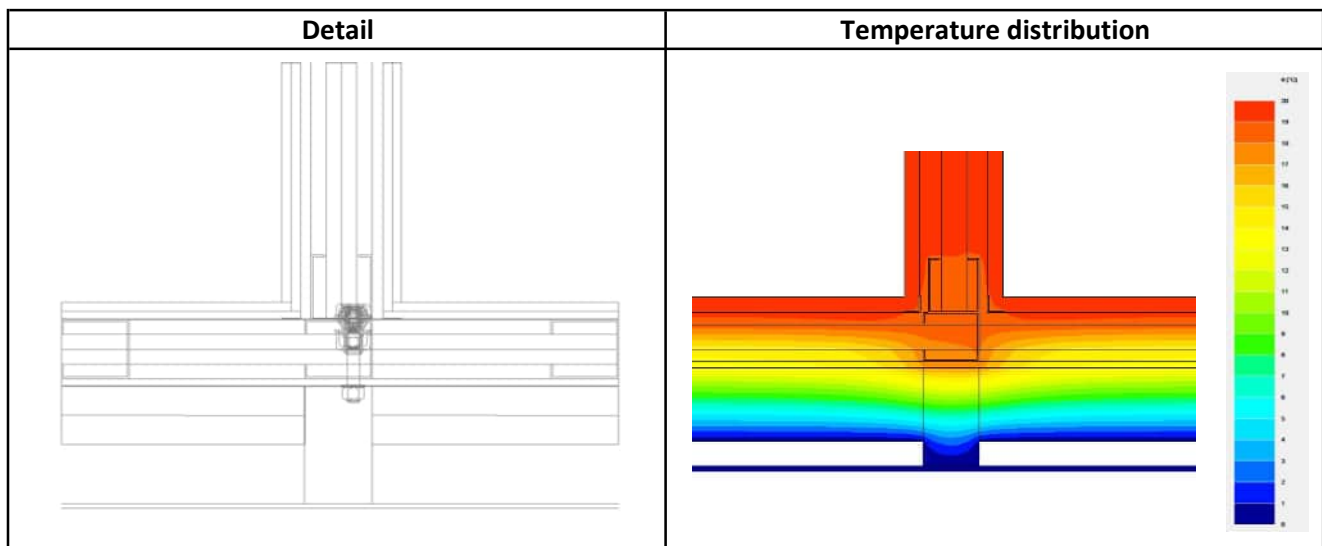
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E18 - Party wall between dwellings

Certificate number:
ATSP-E18-Q10622-0.001

General construction specification checklist

- Metsec metal frame system
 - Rainscreen outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 150mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

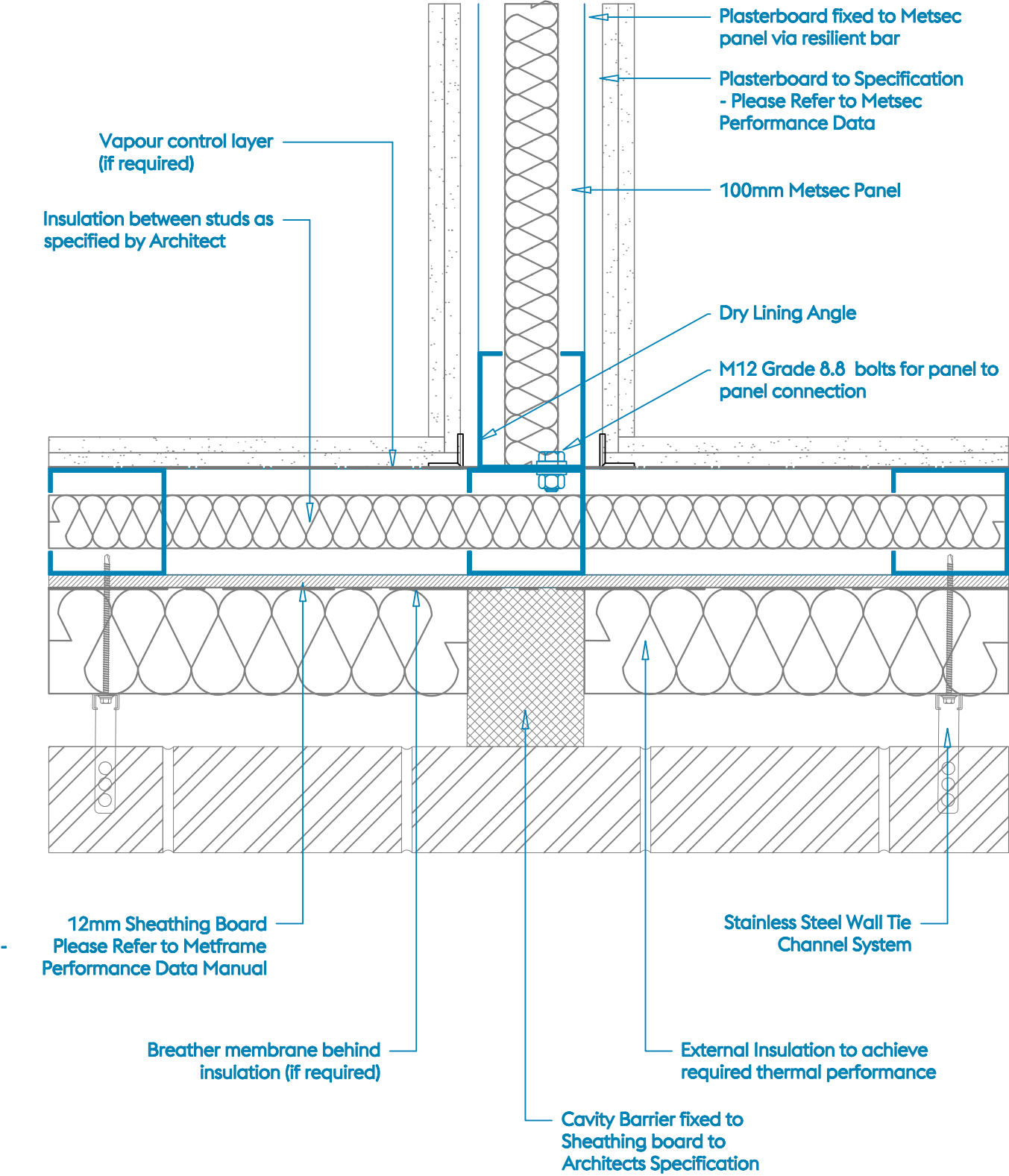


Linear Thermal Transmittance	Temperature factor
$\Psi = 0.001$ / Dwelling (0.002 total)	$f = 0.97$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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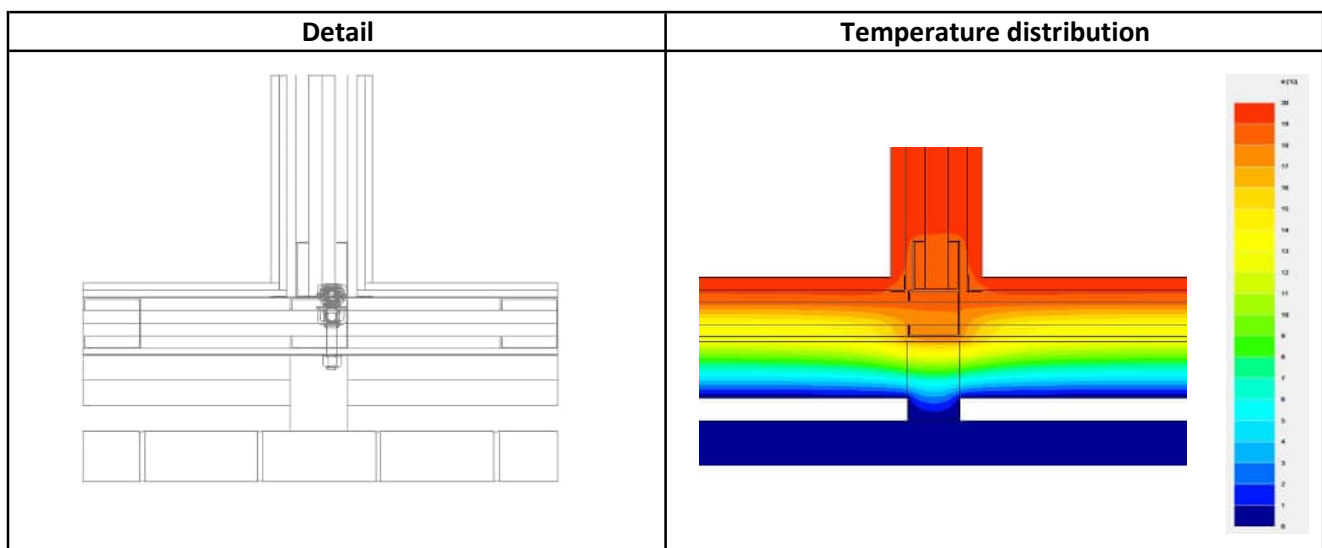
Information		Title: Brickwork external wall to single party wall junction		
Scale: NTS	Drawn by: OPJ	Approved by: BG	Date: 10/02/23	
Project: Standard Details		Drawing No. MF-A220		Revision: B

E18 - Party wall between dwellings

Certificate number:
ATSP-E18-Q10622--0.002

General construction specification checklist

- Metsec metal frame system
 - Brick outer leaf
- 50mm Isowool SF2 insulation (0.036 W/mK) tightly fitted between studs + 125mm Rockwool Duoslab (0.035 W/mK)
- Cavity closer (0.038 W/mK)

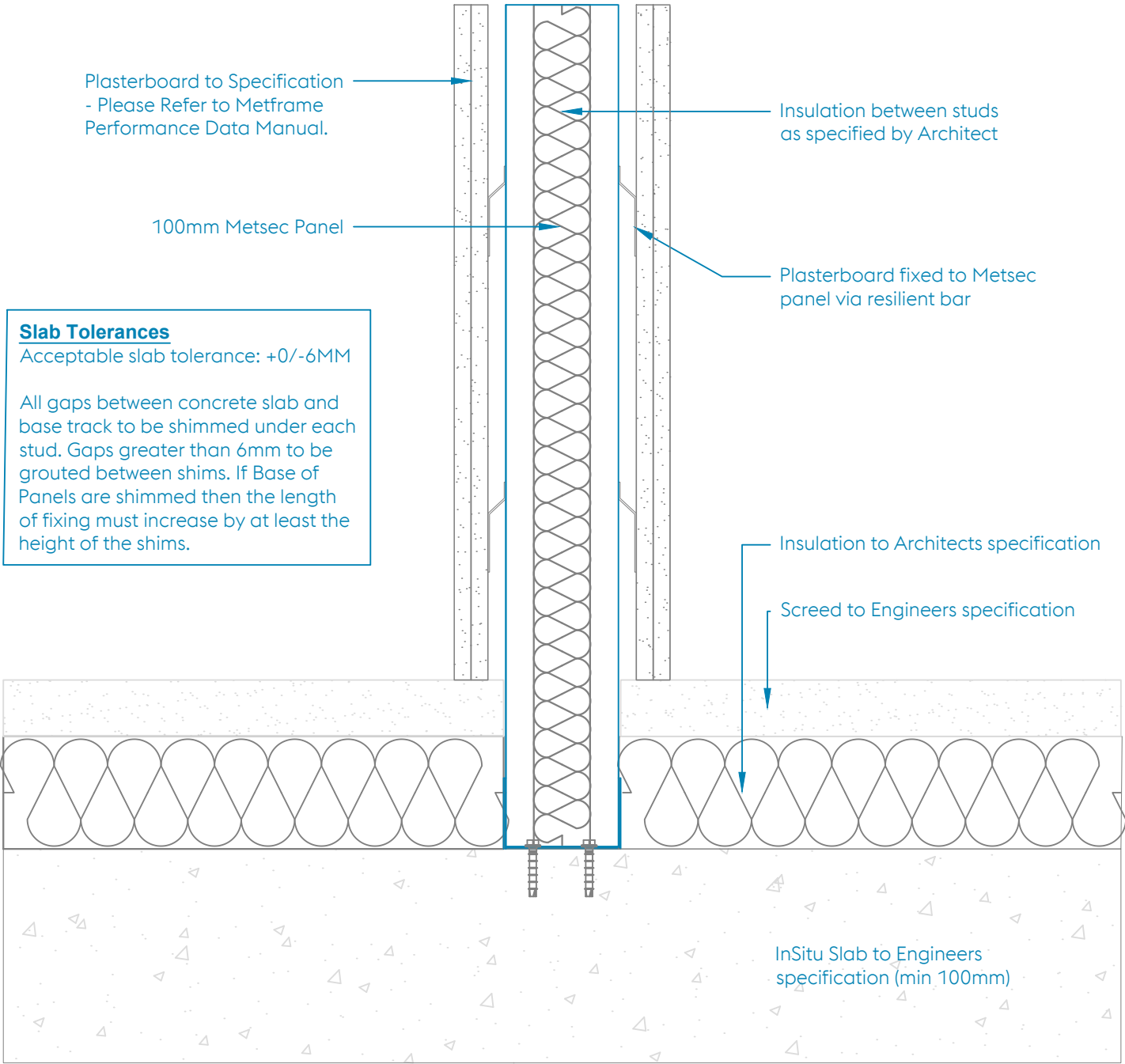


Linear Thermal Transmittance	Temperature factor
Ψ = -0.002 / Dwelling (-0.004 total)	f = 0.97

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
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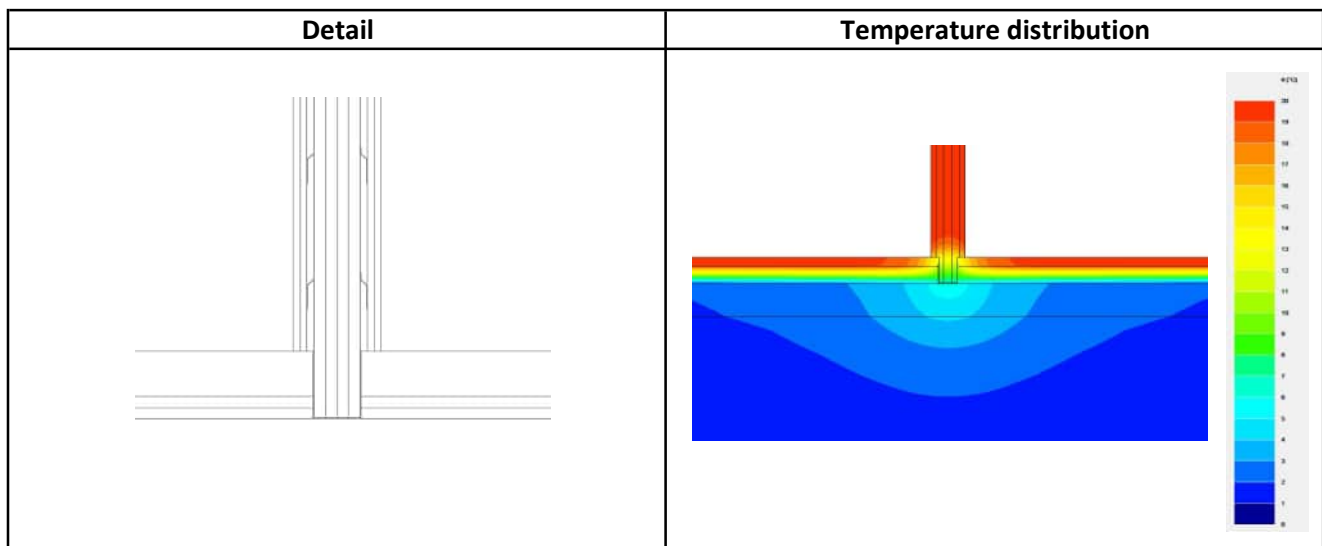
Information		Title:		
		Internal single party all to concrete slab		
Scale:	1:5	Drawn by:	OPJ	Approved by:
				BG
				Date:
				10/02/23
Project:		Drawing No.		Revision:
Standard Details		MF-A120		A

P1 - Party wall - Ground floor

Certificate number:
ATSP-P1-Q10622-0.211

General construction specification checklist

- Metsec metal frame system
- Perimeter insulation (0.022 W/mK)
- 100mm PIR beneath floor (0.022 W/mK)

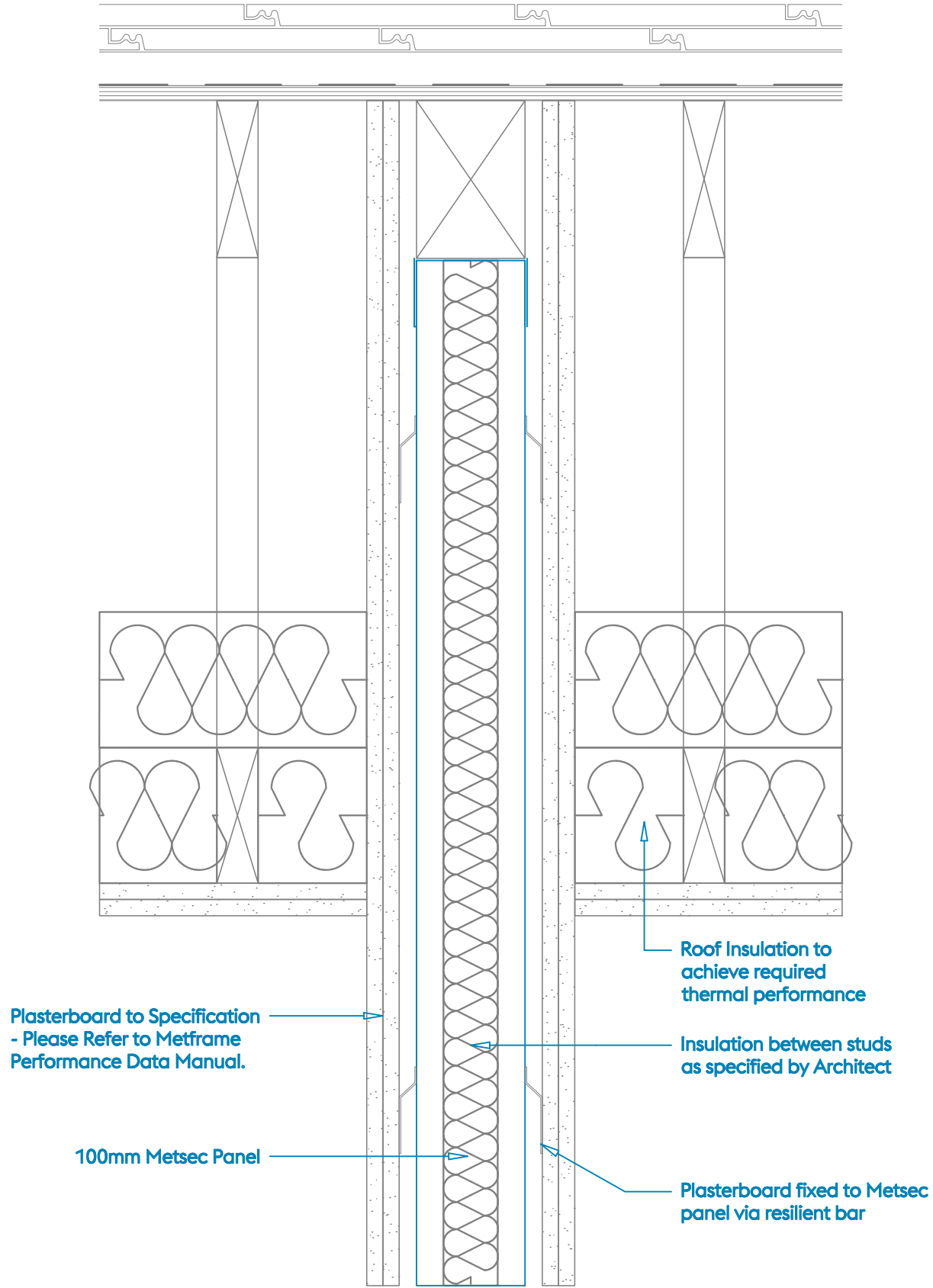


Linear Thermal Transmittance	Temperature factor
$\Psi = 0.211$ / Dwelling (0.4225 total)	$f = 0.75$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
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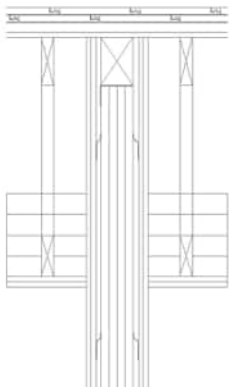
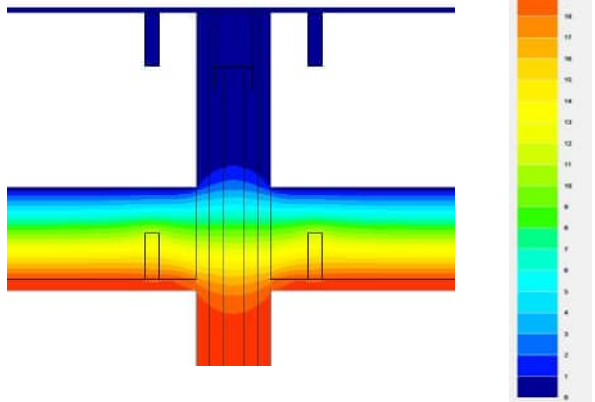
Issued For:		Title:		
Information		Internal single party wall cold roof truss		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A720		B
Date:				
10/02/23				

P4 - Party wall - Roof (insulation at ceiling level)

Certificate number:
ATSP-P4-Q10622-0.0865

General construction specification checklist

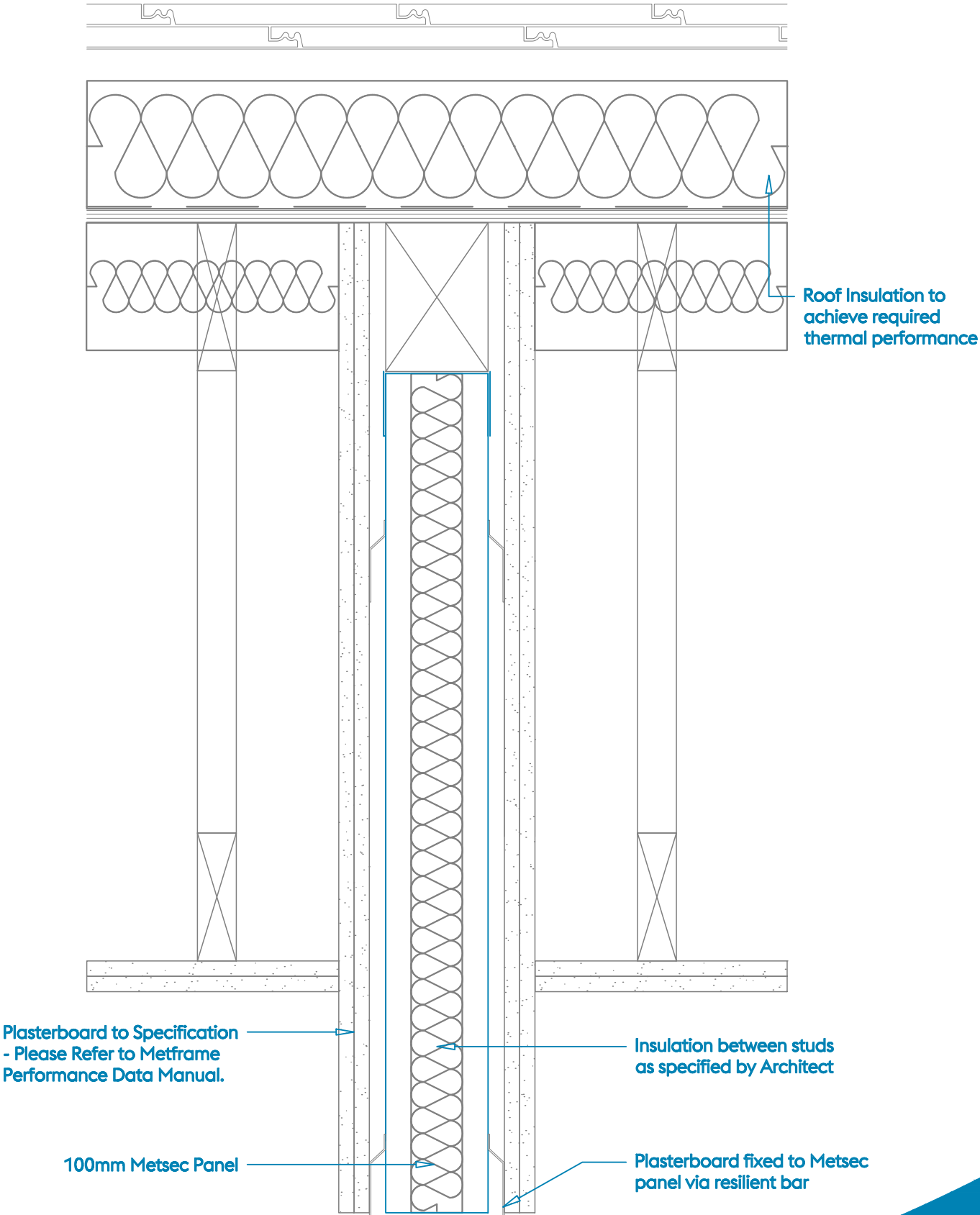
- Metsec metal frame system
- 250mm insulation (0.044 W/mK) at ceiling level

Detail	Temperature distribution
	
Linear Thermal Transmittance	Temperature factor
$\Psi = 0.0865$ / Dwelling (0.1729 total)	$f = 0.95$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
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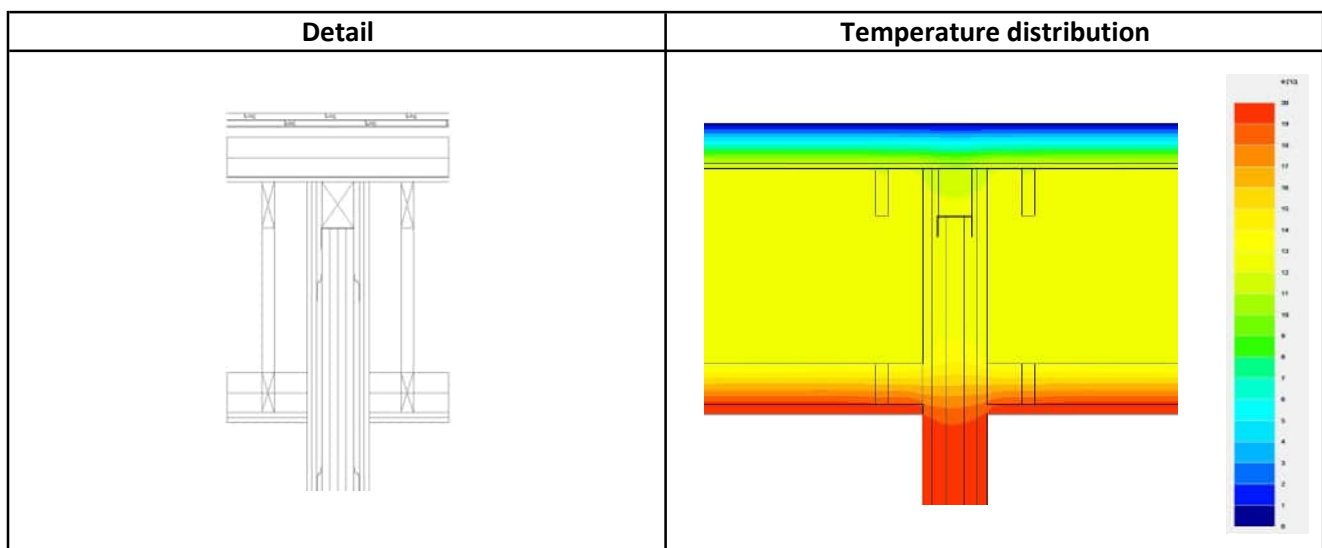
Issued For:		Title:		
Information		Internal single party wall warm roof truss		
Scale:	NTS	Drawn by:	OPJ	Approved by:
				BG
Project:		Drawing No.		Revision:
Standard Details		MF-A721		B

P5 - Party wall - Roof (insulation at rafter level)

Certificate number:
ATSP-P5-Q10622-0.0337

General construction specification checklist

- Metsec metal frame system
- 125mm insulation (0.044 W/mK) at ceiling level
- 125mm insulation (0.035 W/mK) at rafter level



Linear Thermal Transmittance	Temperature factor
$\Psi = 0.0337$ / Dwelling (0.0673 total)	$f = 0.94$

Temperature factor f lower than 0.75 indicates a risk of condensation/mould growth.
 Calculations carried out in accordance with EN ISO 10211-2007 (British Standards), IP 1/06 & BR497 (BRE Press) and with reference to EN ISO 6946 (British Standards), and BR443 (BRE Press)
 Results are applicable to the junction described above only.

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