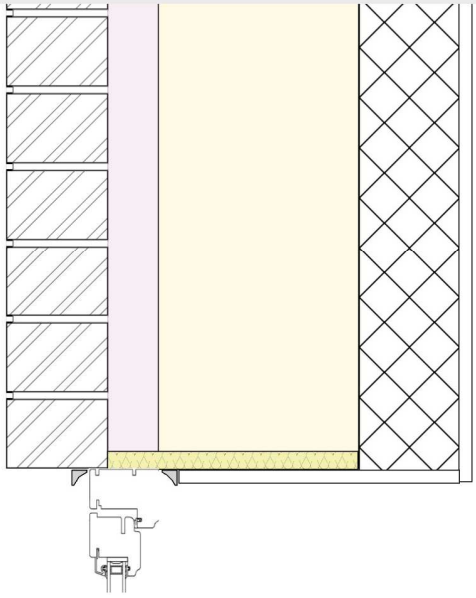
Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

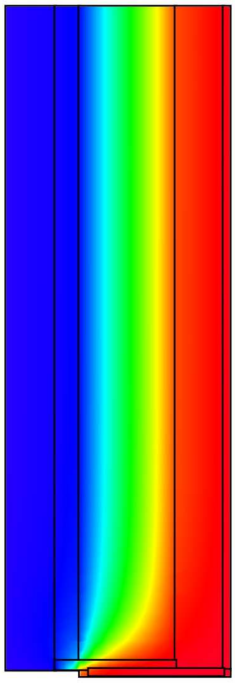
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-02 Lintel at Window Head (standard)		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.038
Temperature Factor	0.890

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.395 m	3.394 W/m
R1	20 C	0.1	0.312 m	1.243 W/m
R2	0 C	0.04	0.083 m	-0.5 W/m
R3	0 C	0.04	1.382 m	-4.138 W/m

Materials List

Description	Thickness (mm)	Lambda
Brick outer leaf	102	0.77
Standard cavity (Air Void)	50	(R) 0.18
Mineral wool insulation	200	0.032
Concrete block (lightweight high strength)	100	0.17
Plasterboard	13, 13 x 280	0.21
Insulation (generic)	18 x 250	0.035

U-values and effective lengths

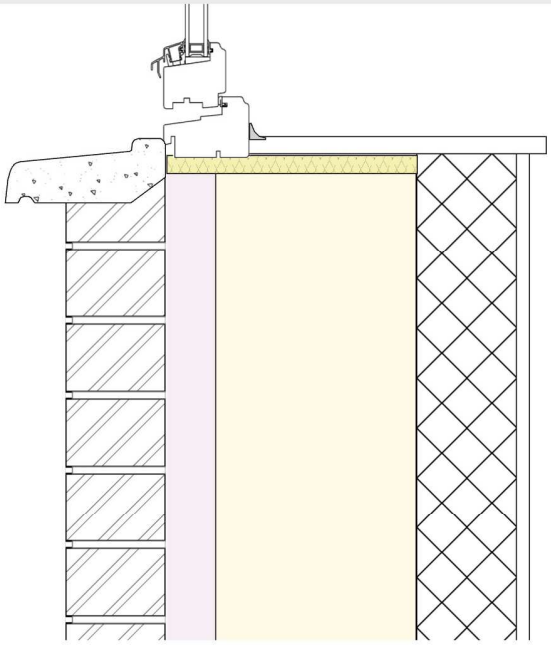
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.395 m	0.139 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

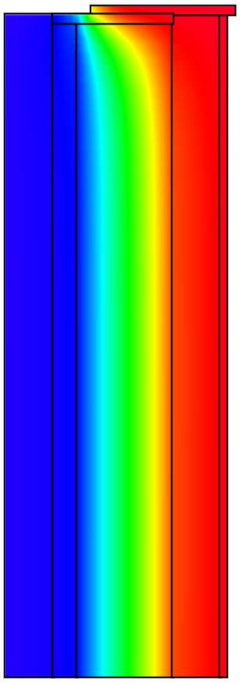
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-03 Window Cill (standard)		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.022
Temperature Factor	0.848

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	0 C	0.04	0.084 m	-0.316 W/m
R1	20 C	0.17	0.296 m	0.752 W/m
R2	20 C	0.13	0.017 m	0.001 W/m
R3	20 C	0.1	0.017 m	0.006 W/m
R4	20 C	0.13	1.389 m	3.453 W/m
R5	0 C	0.04	1.389 m	-3.897 W/m

Materials List

Description	Thickness (mm)	Lambda
Brick outer leaf	100	0.77
Standard cavity (Air Void)	50	(R) 0.18
Mineral wool insulation	200	0.032
Concrete block (lightweight high strength)	100	0.17
Plasterboard	13	0.21
Insulation (generic)	18 x 250	0.035
Plywood sheathing	17 x 300	0.12

U-values and effective lengths

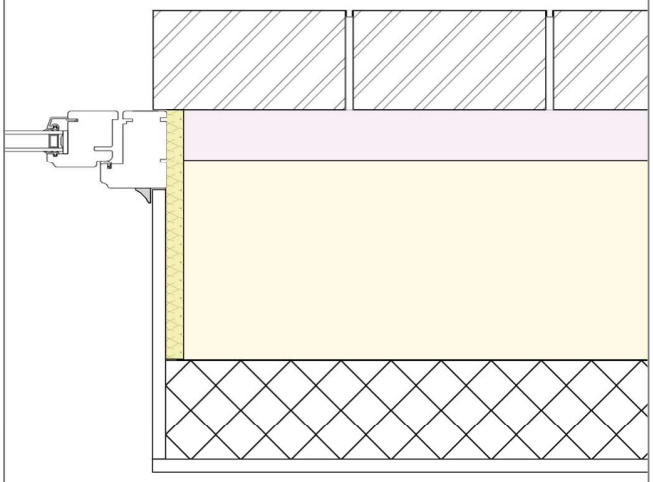
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.389 m	0.136 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

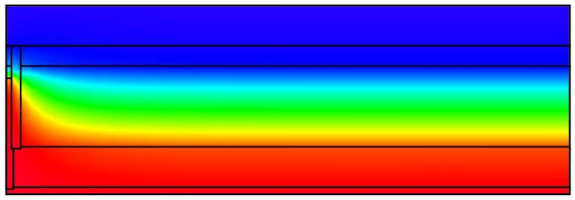
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-04 Windows and Doors - Jamb (standard)		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.035
Temperature Factor	0.834

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	0 C	0.04	1.389 m	-4.004 W/m
R1	20 C	0.13	1.389 m	3.407 W/m
R2	20 C	0.13	0.283 m	1.056 W/m
R3	0 C	0.04	0.1 m	-0.459 W/m

Materials List

Description	Thickness (mm)	Lambda
Brick outer leaf	100	0.77
Standard cavity (Air Void)	50	(R) 0.18
Mineral wool insulation	200	0.032
Concrete block (lightweight high strength)	100	0.17
Plasterboard	13, 270 x 13	0.21
Insulation (generic)	250 x 18	0.035

U-values and effective lengths

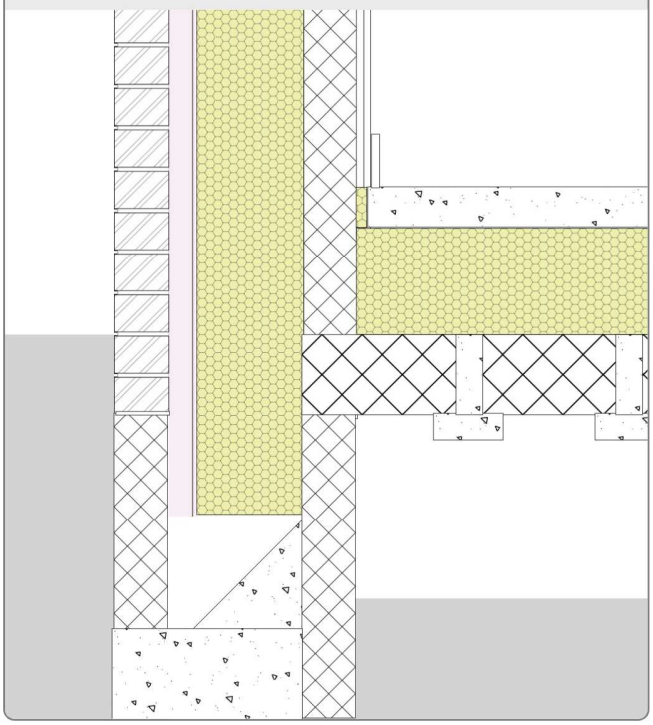
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.389 m	0.136 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

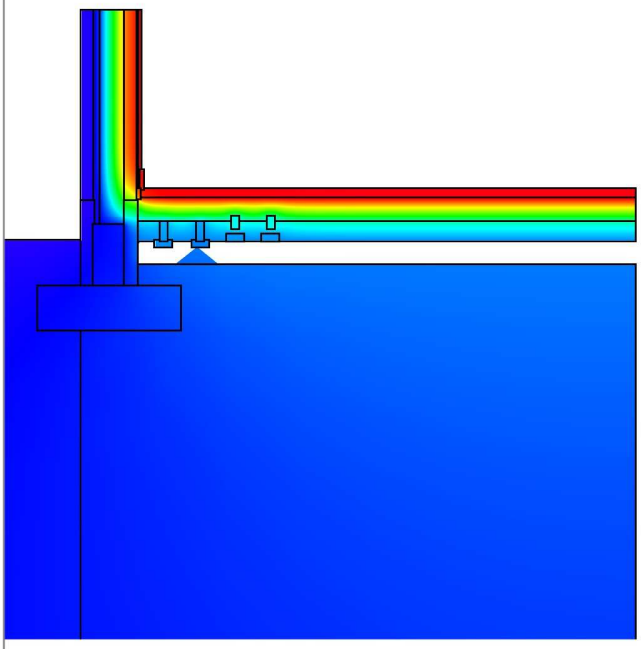
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-05 Beam and Block PF RCD		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.078
Temperature Factor	0.937

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.29 m	3.2 W/m
R1	20 C	0.17	0.02 m	0.047 W/m
R2	20 C	0.13	0.15 m	0.575 W/m
R3	20 C	0.17	3.98 m	10.724 W/m
R4	3.05 C	0.1	4.03 m	-9.488 W/m
R5	3.05 C	0.13	0.2 m	0.471 W/m
R6	3.05 C	0.1	4.03 m	5.653 W/m
R7	0 C	0.04	20 m	-6.581 W/m
R8	0 C	0.04	1.865 m	-4.602 W/m

Materials List

Description	Thickness (mm)	Lambda
Concrete screed	75	1.15
Rigid Insulation PU	200, 20 x 75	0.038
Concrete block (lightweight high strength)	150, 100	0.11
Brick outer leaf	103	0.77
Cavity with Foil Faced Insulation Cavity	50	(R) 0.665
Plaster Dabs	14.5	(R) 0.17
Plasterboard	12.5	0.21
Concrete block (dense) protected	100	1.13
Concrete floor beam	250, 355×250, 50 x 130, 150 x 50, 100 x 50	2.2
Plywood sheathing	100 x 15	0.13

U-values and effective lengths

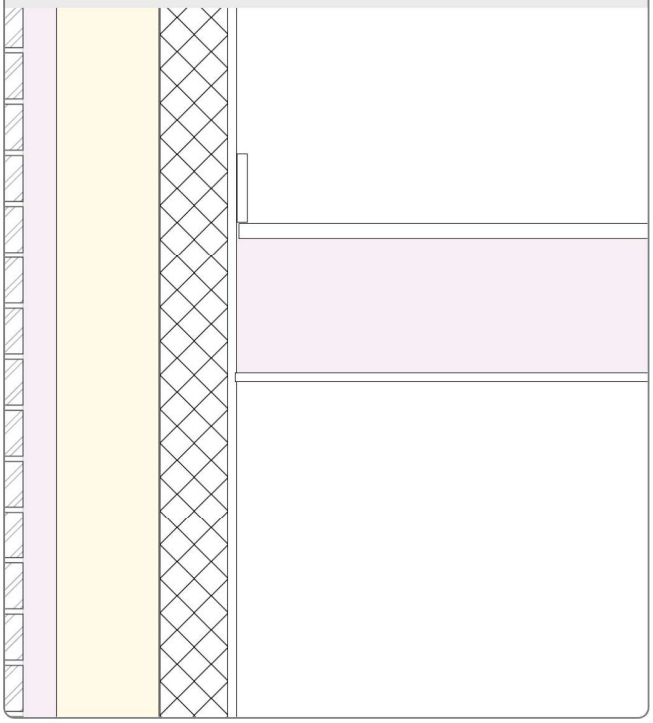
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.440 m	0.12 W/(m²K)	F_e (1.00)
U2	U value 2	4.000 m	0.141 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

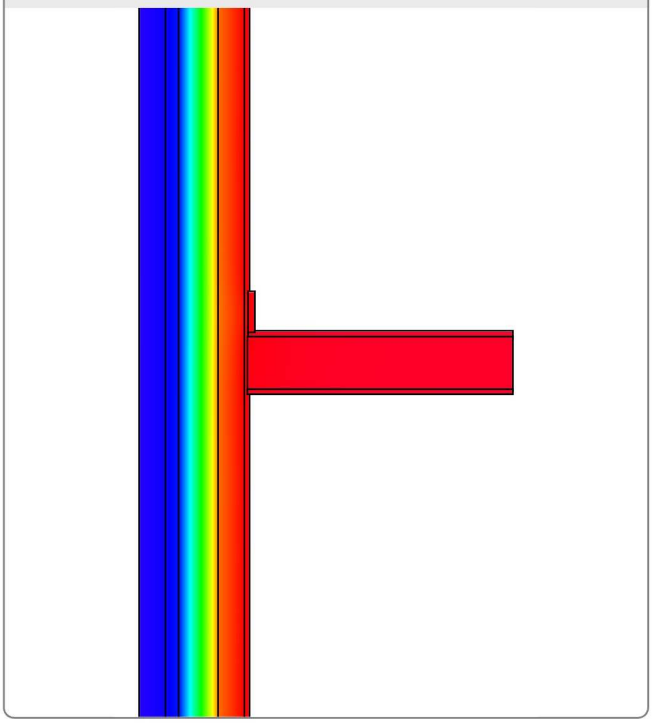
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-06 Intermediate Floor/ External Wall (standard)		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	-0.001
Temperature Factor	0.973

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.089 m	3.777 W/m
R1	20 C	0.17	0.02 m	0.044 W/m
R2	20 C	0.13	0.15 m	0.366 W/m
R3	20 C	0.17	0.98 m	0.295 W/m
R4	20 C	0.1	1 m	0.592 W/m
R5	20 C	0.13	1.239 m	4.241 W/m
R6	0 C	0.04	2.713 m	-9.315 W/m

Materials List

Description	Thickness (mm)	Lambda
Chipboard	22	0.12
Standard cavity (Air Void)	200, 50	(R) 0.09
Plasterboard	13	0.21
Brick outer leaf	100	0.77
Mineral wool insulation	150	0.032
Concrete block (lightweight high strength)	100	0.17
Plywood sheathing	100 x 15	0.13

U-values and effective lengths

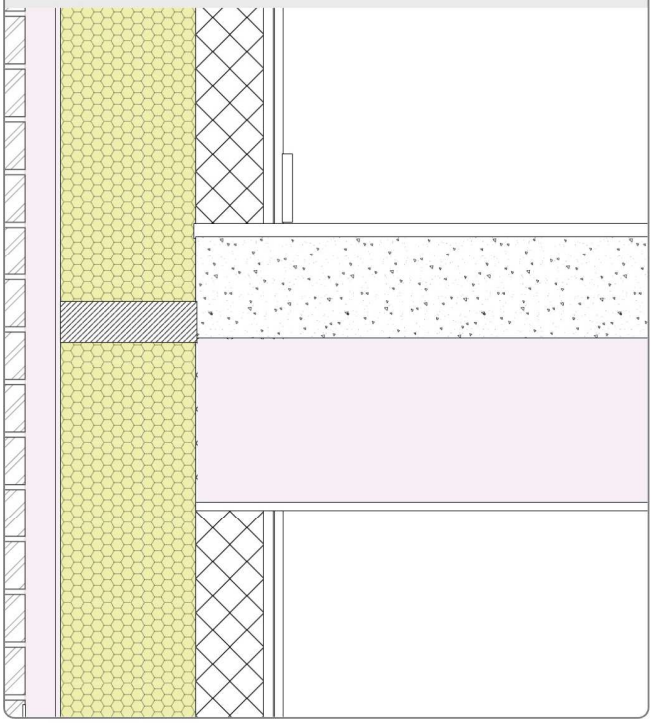
Nr.	Description	Length	Value	Correction factor
U1	U value 1	2.713 m	0.172 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

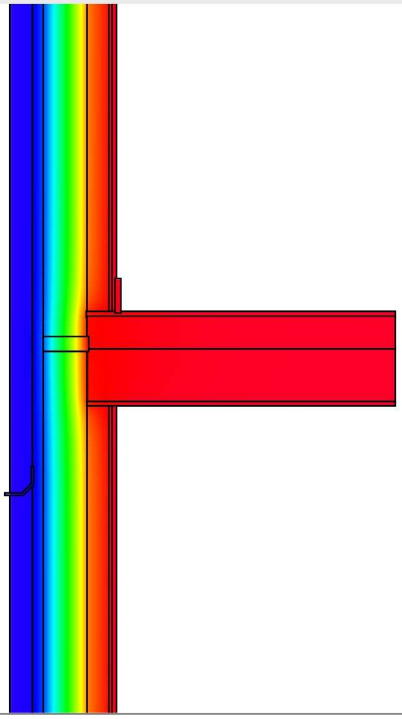
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-07 PF RCD		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.059
Per dwelling (Ψ-value) (W/m·K)	0.0295
Temperature Factor	0.981

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.29 m	3.016 W/m
R1	20 C	0.17	0.02 m	0.027 W/m
R2	20 C	0.13	0.15 m	0.235 W/m
R3	20 C	0.17	1.2535 m	0.613 W/m
R4	20 C	0.1	1.2735 m	0.769 W/m
R5	20 C	0.13	1.44 m	3.298 W/m
R6	0 C	0.04	3.3045 m	-7.958 W/m

Materials List

Description	Thickness (mm)	Lambda
Plasterboard	22, 12.5	0.21
Concrete floor beam	150	2.3
Standard cavity (Air Void)	240	(R) 0.21
Brick outer leaf	103	0.77
Cavity with Reflectashield TF	50	(R) 0.81
Rigid Insulation PU	200	0.032
Concrete block (lightweight high strength)	100	0.11
Plaster Dabs	14.5	(R) 0.17
Cavity fire stop	60 x 200	0.04
Plywood sheathing	100 x 15	0.13
Steel frame, Lintel, Wall tie etc	-	17

U-values and effective lengths

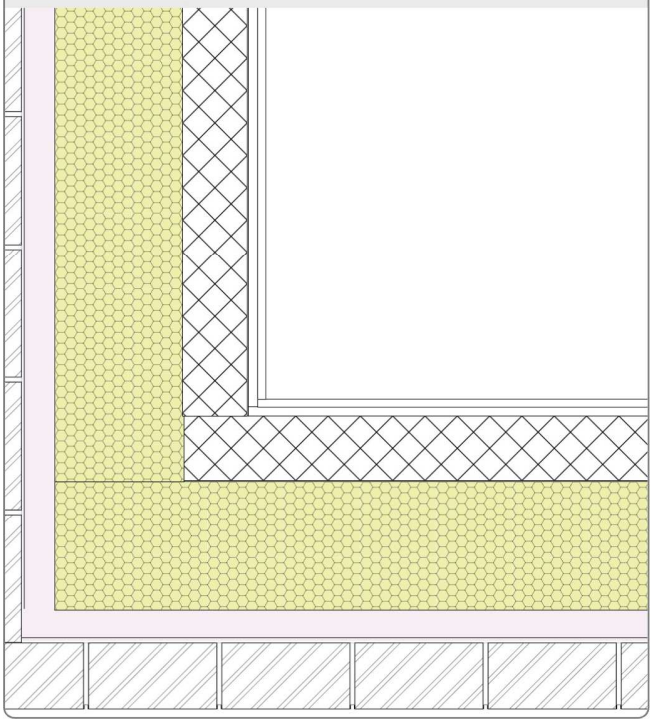
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.440 m	0.118 W/(m²K)	F_e (1.00)
U2	U value 2	1.440 m	0.118 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

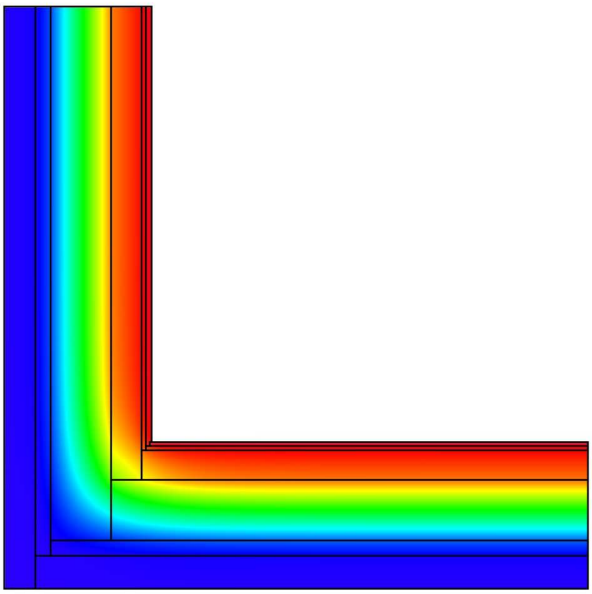
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-16 PF RCD		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.033
Temperature Factor	0.948

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.44 m	3.715 W/m
R1	20 C	0.13	1.44 m	3.72 W/m
R2	0 C	0.04	1.92 m	-3.717 W/m
R3	0 C	0.04	1.92 m	-3.718 W/m

Materials List

Description	Thickness (mm)	Lambda
Brick outer leaf	103	0.77
Cavity with Reflectashield TF	50	(R) 0.81
Rigid Insulation PU	200	0.032
Concrete block (lightweight high strength)	100	0.11
Plaster Dabs	14.5	(R) 0.17
Plasterboard	12.5	0.21

U-values and effective lengths

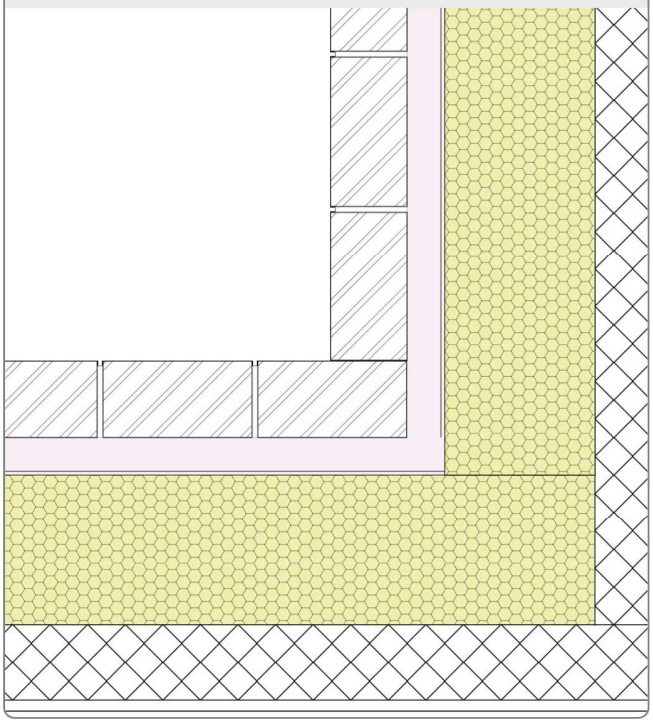
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.440 m	0.118 W/(m²K)	F_e (1.00)
U2	U value 2	1.440 m	0.118 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

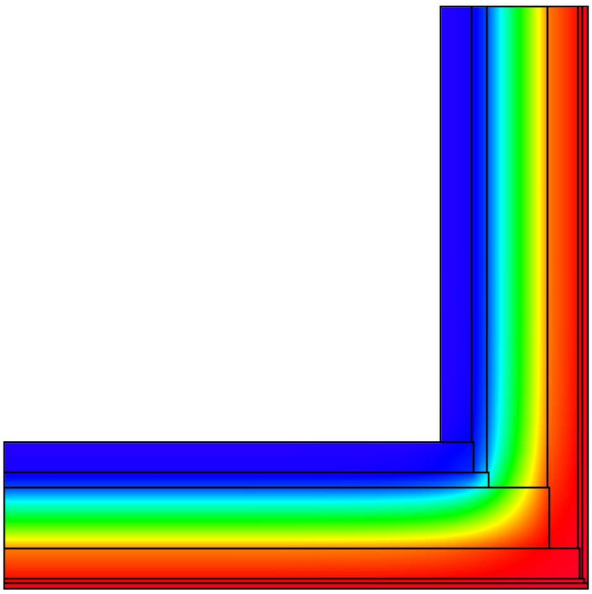
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-17 PF RCD		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	-0.069
Temperature Factor	0.985

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.92 m	3.828 W/m
R1	20 C	0.13	1.92 m	3.828 W/m
R2	0 C	0.04	1.44 m	-3.826 W/m
R3	0 C	0.04	1.44 m	-3.83 W/m

Materials List

Description	Thickness (mm)	Lambda
Plasterboard	12.5	0.21
Plaster Dabs	14.5	(R) 0.17
Concrete block (lightweight high strength)	100	0.11
Rigid Insulation PU	200	0.032
Cavity with Reflectashield TF	50	(R) 0.81
Brick outer leaf	103	0.77

U-values and effective lengths

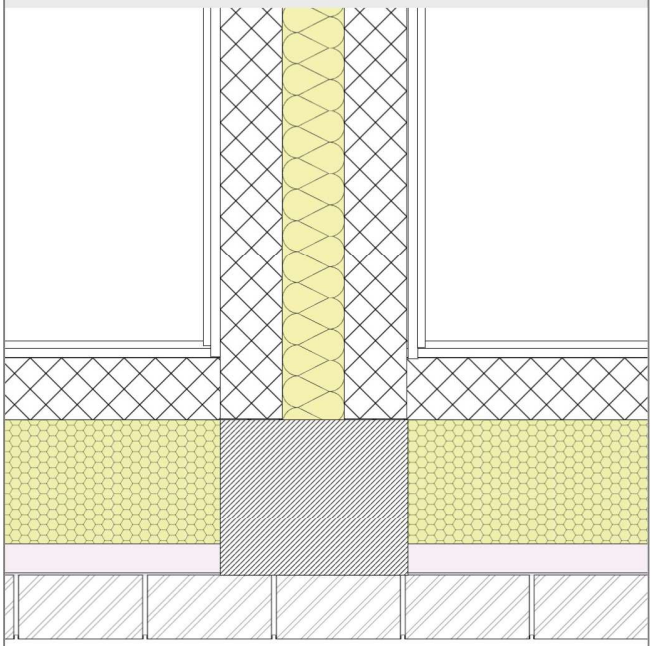
Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.920 m	0.118 W/(m²K)	F_e (1.00)
U2	U value 2	1.920 m	0.118 W/(m²K)	F_e (1.00)

Linear Thermal Transmittance (Ψ) and Temperature Factor (f_{Rsi}) Report

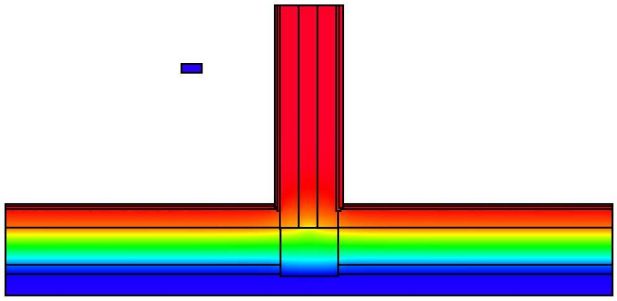
AutoPSI
Thermal Modelling Tool

Author	Matthew Carter	Date	15/10/26
Detail Description	E-18 PF RCD		
Project Name	Tiverton		
Calculation Type	2D	Software	AutoPSI

Detail Drawing



Temperature Distribution Result



Calculation Results

Linear Thermal Transmittance (Ψ-value) (W/m·K)	0.045
Per dwelling (Ψ-value) (W/m·K)	0.0225
Temperature Factor	0.968

Risk of Surface Condensation or Mould Growth *

Mould growth: buildings with absorbent internal surfaces – Critical Temperature Factor (f_{CRsi})		
Dwellings; residential buildings; schools	0.75	Low Risk

* The risk of surface condensation or mould growth assessment follows the criteria in BRE Information Paper IP 1/06 Assessing the effects of thermal bridging at junctions and around openings

The result has been generated using: **AutoPsi Thermal Modeling Tool: AutoPSI.co.uk**. The details have been calculated in accordance with BR497 2nd Edition 2016.

Boundary conditions and Flow of heat

Nr.	Temp	Rsi/Rse	Length	Flow of heat
R0	20 C	0.13	1.44 m	3.48 W/m
R1	20 C	0.13	1.068 m	0.356 W/m
R2	20 C	0.13	1.068 m	0.36 W/m
R3	20 C	0.13	1.44 m	3.484 W/m
R4	0 C	0.04	3.236 m	-7.68 W/m

Materials List

Description	Thickness (mm)	Lambda
Plasterboard	12.5, 15.5	0.21
Plaster Dabs	14.5	(R) 0.17
Concrete block (lightweight high strength)	100	0.11
Rigid Insulation PU	200	0.032
Cavity with Reflectashield TF	50	(R) 0.81
Brick outer leaf	103	0.77
Insulation (generic)	100	0.032
Timber	38 x 100	0.13
Cavity fire stop	250 x 300	0.044

U-values and effective lengths

Nr.	Description	Length	Value	Correction factor
U1	U value 1	1.440 m	0.118 W/(m²K)	F_e (1.00)
U2	U value 2	1.440 m	0.118 W/(m²K)	F_e (1.00)