

CONDENSATION RISK ANALYSIS

Property Reference	S17212	Issued on Date	17/10/2017
Survey Reference	Original	Prop Type Ref	
Project	New Dwelling, Horseshoe Lane, Chadlington, OX7 3NB		
Calculation Type	New Build (As Designed)		

SAP Rating	82 B	DER	12.55	TER	15.95
Environmental	87 B	% DER<TER	21.33		
CO ₂ Emissions (t/year)	3.01	DFEE	61.71	TFEE	65.78
General Requirements Compliance	Pass	% DFEE<TFEE	6.18		

Surveyor	Malcolm Lisle, Tel: 01142521995	Surveyor ID	8227-0002
Client			

Roof - Sloping Roof

Environmental conditions

External conditions	Temperature:	5	°C	Relative Humidity:	95	%
Internal conditions	Temperature:	15	°C	Relative Humidity:	65	%

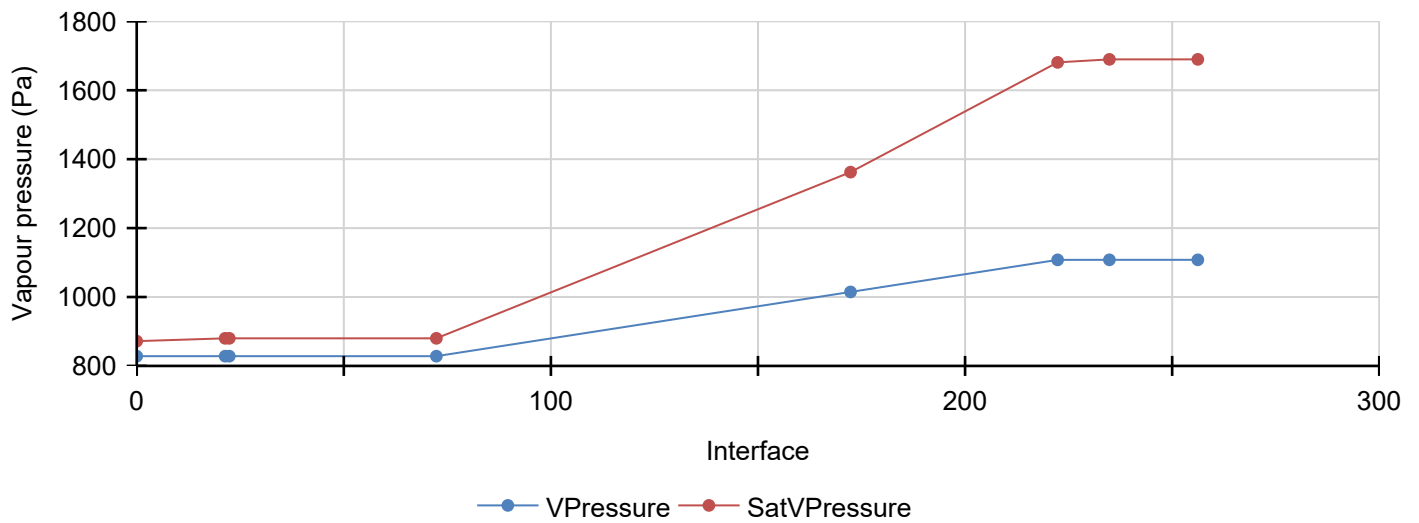
Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m ² .K/W	Cumulative thermal resistance m ² .K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.1000	0.1000	0.0	0.00	0.00
1.Tiling, clay	1.0	1.0000	0.0000	0.1000	250.0	0.25	0.25
2.Standard cavity	50.0	0.0000	0.0000	0.1000	0.0	0.00	0.25
3.Celotex FR5000	100.0	0.0210	4.7619	4.8619	43373.0	4337.30	4337.55
4.Celotex FR5000	50.0	0.0210	2.3810	7.2429	43373.0	2168.65	6506.20
5.Plasterboard, standard	12.5	0.2100	0.0595	7.3024	45.0	0.56	6506.76
Internal surface	-	0.0000	0.1000	7.3024	0.0	0.00	6506.76

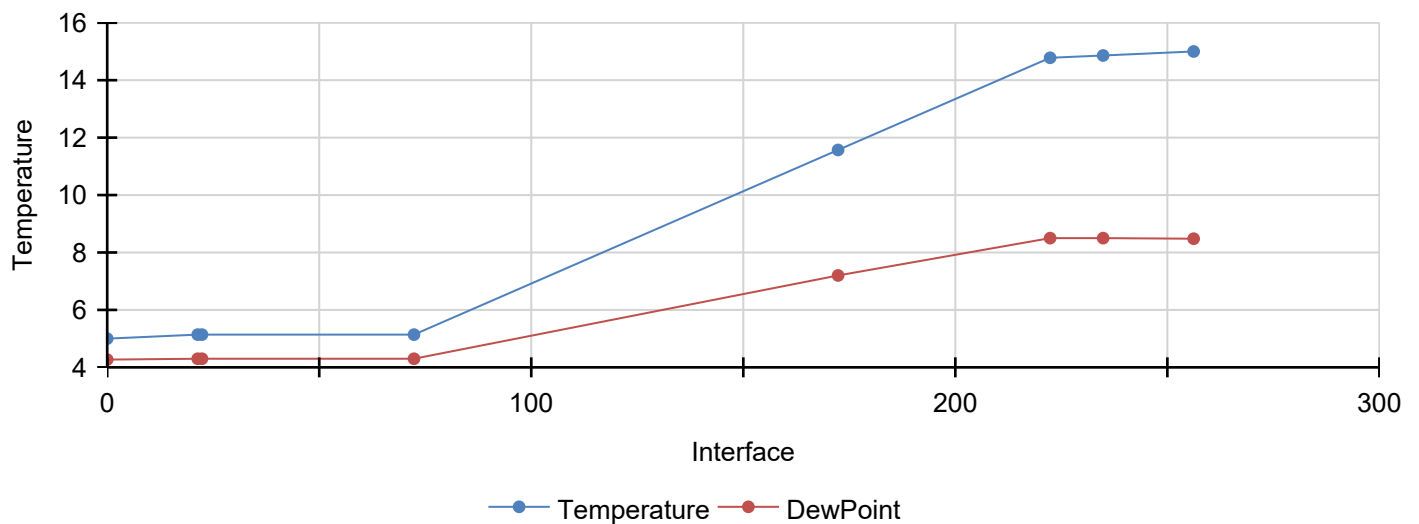
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m ² h	Cond. rate 60 days g/m ² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Tiling, clay	5.14	828.3	880.1	4.3	0.00	0.00	No
2. Tiling, clay / Standard cavity	5.14	828.3	880.1	4.3	0.00	0.00	No
3. Standard cavity / Celotex FR5000	5.14	828.3	880.1	4.3	0.00	0.00	No
4. Celotex FR5000 / Celotex FR5000	11.57	1014.7	1362.4	7.2	0.00	0.00	No
5. Celotex FR5000 / Plasterboard, standard	14.78	1107.8	1680.9	8.5	0.00	0.00	No
Plasterboard, standard / Internal surface	14.86	1107.9	1689.6	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1689.6	8.48	0.00	0.00	No

CONDENSATION RISK ANALYSIS



Interface temperature / Dew point graphical representation



CONDENSATION RISK ANALYSIS

Roof - Plane Roof

Environmental conditions

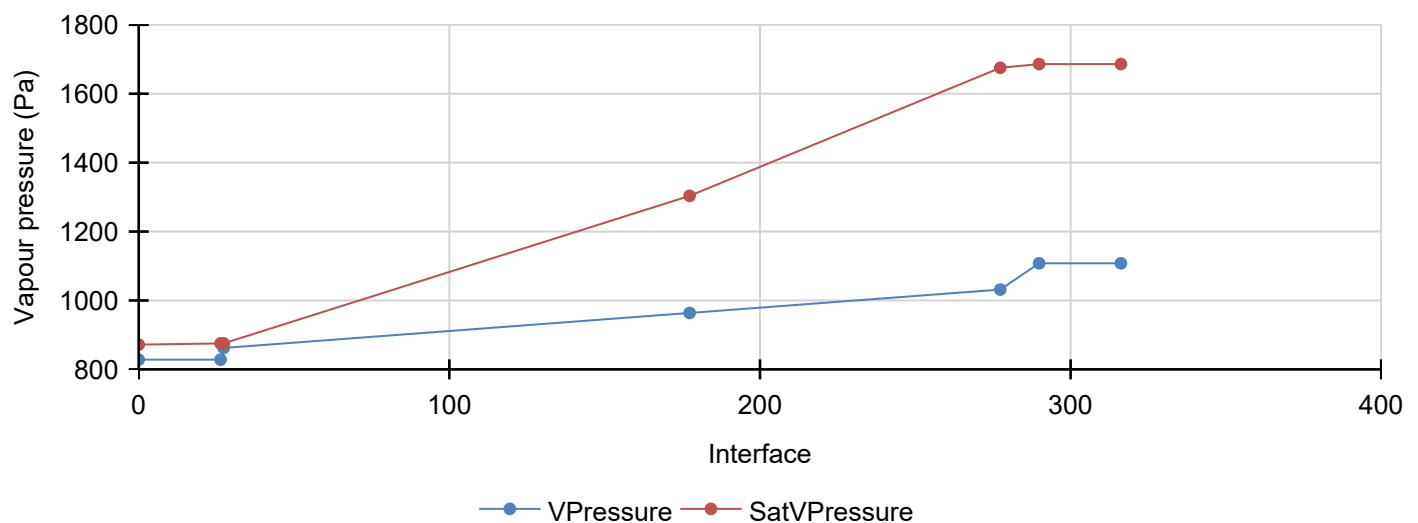
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.0346	0.0346	0.0	0.00	0.00
1.Tiling, clay	1.0	1.0000	0.0009	0.0355	250.0	0.25	0.25
2.Loft Space	-	0.0000	0.0600	0.0955	0.0	0.00	0.25
3.ROCKWOOL ROLL	150.0	0.0440	3.4091	3.5046	5.0	0.75	1.00
4.ROCKWOOL ROLL	100.0	0.0440	2.2727	5.7773	5.0	0.50	1.50
5.Plasterboard, standard	12.5	0.2100	0.0595	5.8368	45.0	0.56	2.06
Internal surface	-	0.0000	0.1000	5.8368	0.0	0.00	2.06

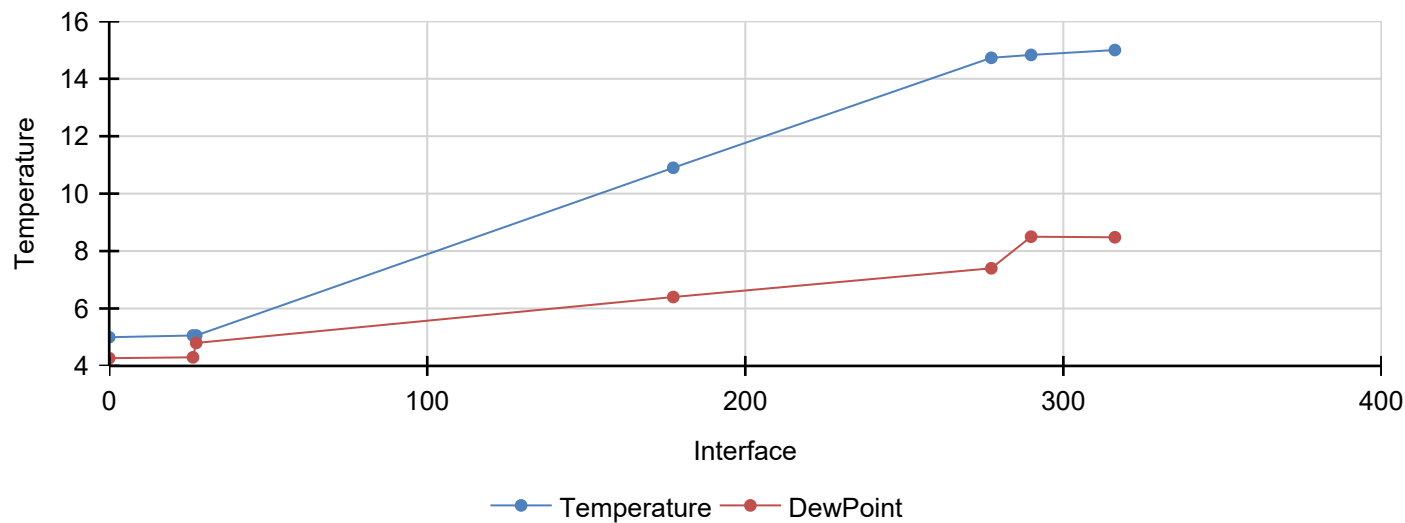
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Tiling, clay	5.06	828.3	875.4	4.3	0.00	0.00	No
2. Tiling, clay / Loft Space	5.06	862.2	875.5	4.8	0.00	0.00	No
3. Loft Space / ROCKWOOL ROLL	5.16	862.2	881.7	4.8	0.00	0.00	No
4. ROCKWOOL ROLL / ROCKWOOL ROLL	10.90	963.8	1303.6	6.4	0.00	0.00	No
5. ROCKWOOL ROLL / Plasterboard, standard	14.73	1031.6	1675.1	7.4	0.00	0.00	No
Plasterboard, standard / Internal surface	14.83	1107.9	1686.0	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1686.0	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS



CONDENSATION RISK ANALYSIS

Roof - Flat Roof

Environmental conditions

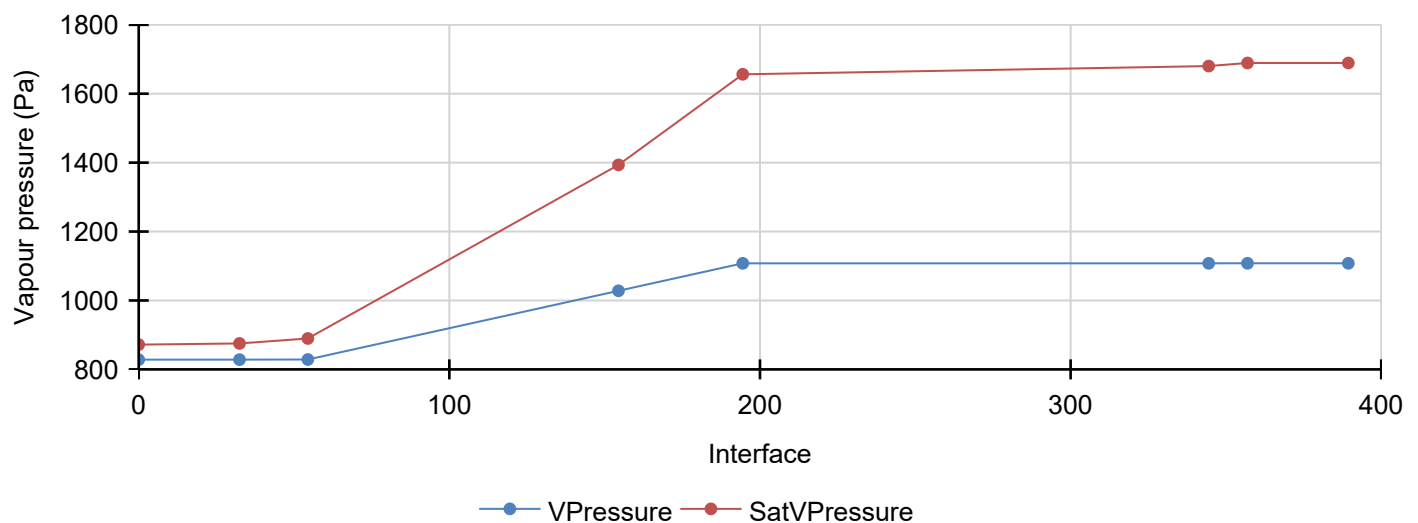
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.0400	0.0400	0.0	0.00	0.00
1.Plywood	22.0	0.1300	0.1692	0.2092	450.0	9.90	9.90
2.Celotex FR5000	100.0	0.0210	4.7619	4.9711	43373.0	4337.30	4347.20
3.Celotex FR5000	40.0	0.0210	1.9048	6.8759	43373.0	1734.92	6082.12
4.Standard cavity	150.0	0.0000	0.1600	7.0359	0.0	0.00	6082.12
5.Plasterboard, standard	12.5	0.2100	0.0595	7.0954	45.0	0.56	6082.68
Internal surface	-	0.0000	0.1000	7.0954	0.0	0.00	6082.68

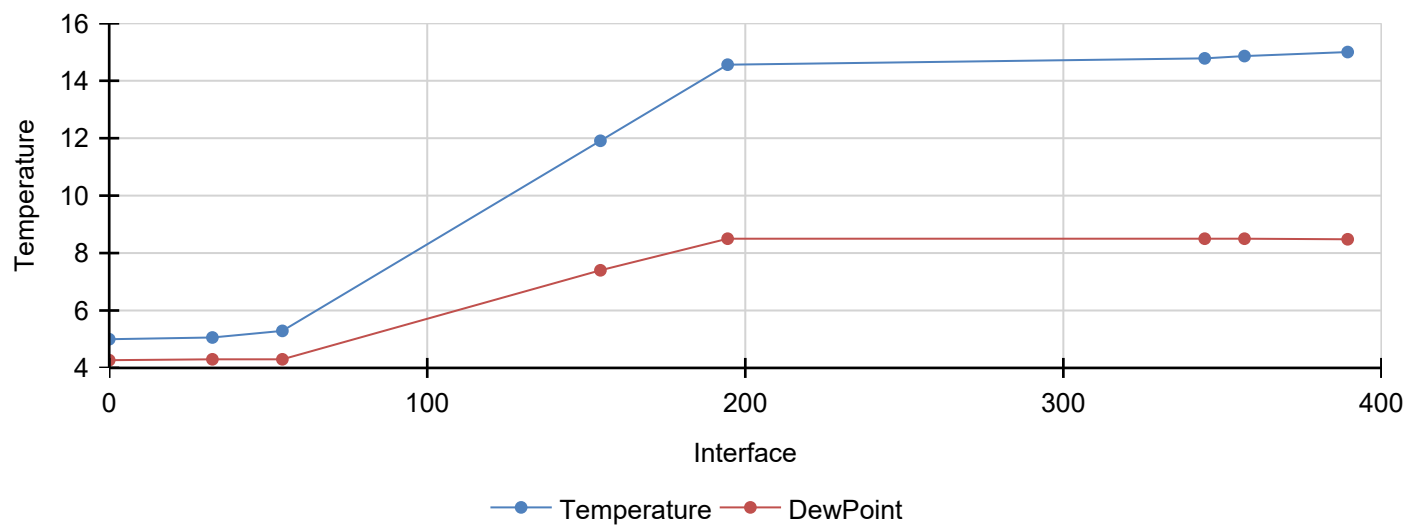
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Plywood	5.06	828.3	875.3	4.3	0.00	0.00	No
2. Plywood / Celotex FR5000	5.29	828.7	889.7	4.3	0.00	0.00	No
3. Celotex FR5000 / Celotex FR5000	11.91	1028.1	1393.4	7.4	0.00	0.00	No
4. Celotex FR5000 / Standard cavity	14.56	1107.8	1656.3	8.5	0.00	0.00	No
5. Standard cavity / Plasterboard, standard	14.78	1107.8	1680.2	8.5	0.00	0.00	No
Plasterboard, standard / Internal surface	14.86	1107.9	1689.2	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1689.2	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS



CONDENSATION RISK ANALYSIS

Wall - Main Cottage

Environmental conditions

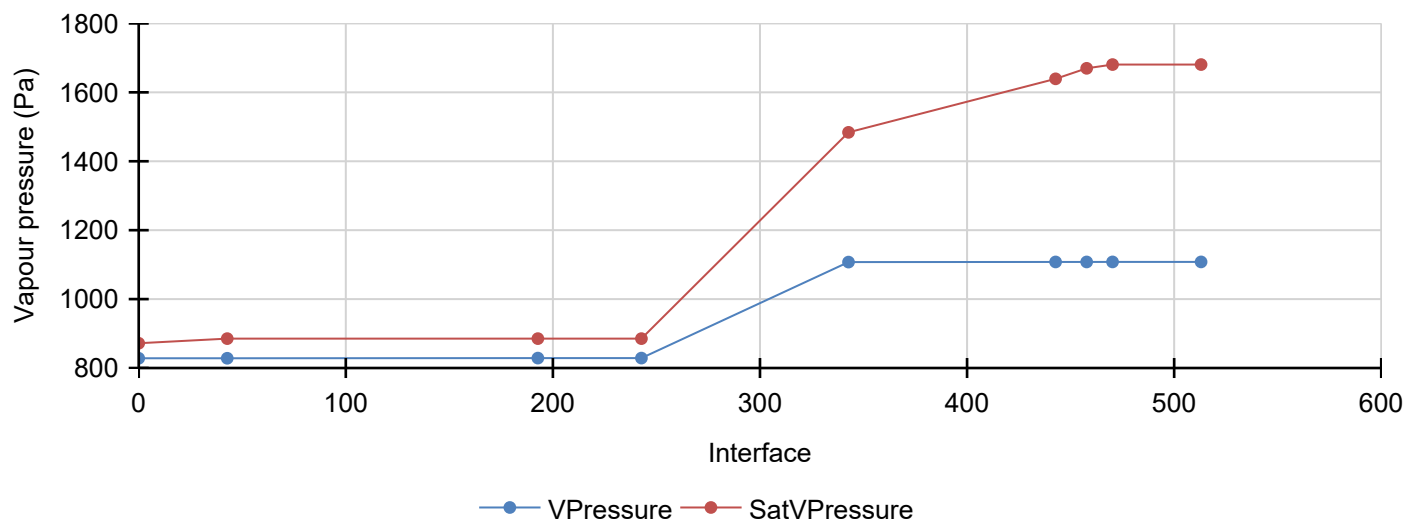
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.1300	0.1300	0.0	0.00	0.00
1.Sandstone	150.0	2.3000	0.0000	0.1300	60.0	9.00	9.00
2.Standard cavity	50.0	0.0000	0.0000	0.1300	0.0	0.00	9.00
3.Celotex CW4000	100.0	0.0220	4.5455	4.6755	43373.0	4337.30	4346.30
4.Thermalite Turbo	100.0	0.1100	0.9091	5.5845	60.0	6.00	4352.30
5.airspace/plaster dabs	15.0	0.0000	0.1700	5.7545	0.0	0.00	4352.30
6.Plasterboard, standard	12.5	0.2100	0.0595	5.8141	45.0	0.56	4352.86
Internal surface	-	0.0000	0.1300	5.8141	0.0	0.00	4352.86

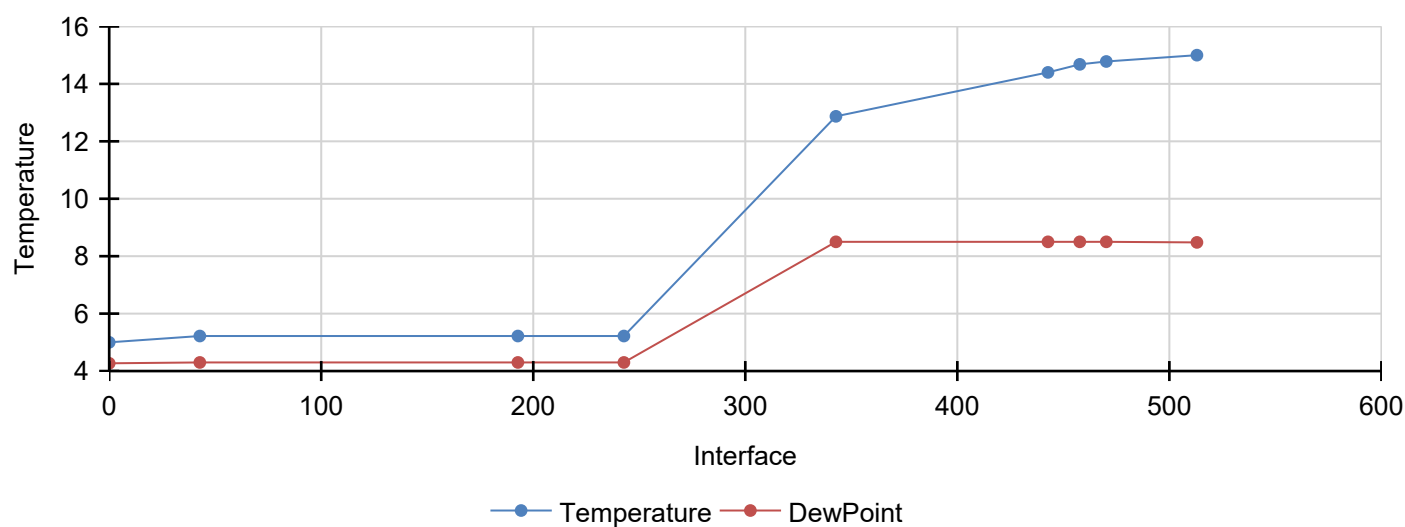
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Sandstone	5.22	828.3	885.3	4.3	0.00	0.00	No
2. Sandstone / Standard cavity	5.22	828.8	885.3	4.3	0.00	0.00	No
3. Standard cavity / Celotex CW4000	5.22	828.8	885.3	4.3	0.00	0.00	No
4. Celotex CW4000 / Thermalite Turbo	12.87	1107.4	1483.9	8.5	0.00	0.00	No
5. Thermalite Turbo / airspace/plaster dabs	14.40	1107.8	1639.2	8.5	0.00	0.00	No
6. airspace/plaster dabs / Plasterboard, standard	14.68	1107.8	1669.7	8.5	0.00	0.00	No
Plasterboard, standard / Internal surface	14.78	1107.9	1680.6	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1680.6	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS



CONDENSATION RISK ANALYSIS

Wall - Lower Cottage

Environmental conditions

External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

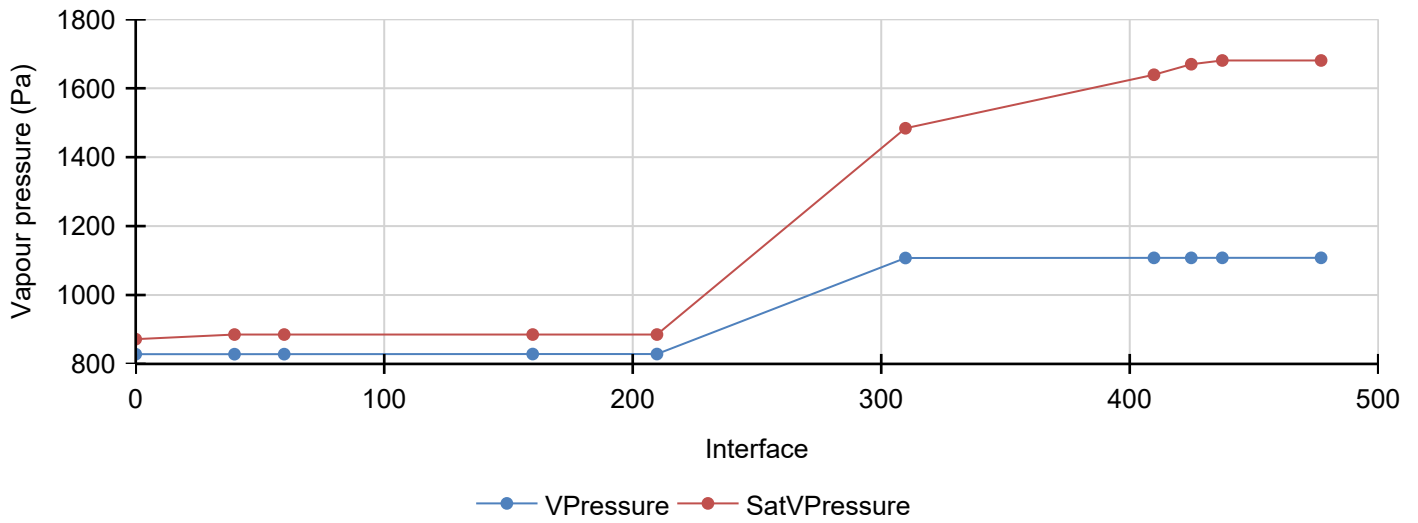
Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.1300	0.1300	0.0	0.00	0.00
1.Render - Cement and Sand	20.0	1.0000	0.0000	0.1300	100.0	2.00	2.00
2.Blockwork, medium	100.0	0.5700	0.0000	0.1300	50.0	5.00	7.00
3.Standard cavity	50.0	0.0000	0.0000	0.1300	0.0	0.00	7.00
4.Celotex GA4000	100.0	0.0220	4.5455	4.6755	43373.0	4337.30	4344.30
5.Thermalite Turbo	100.0	0.1100	0.9091	5.5845	60.0	6.00	4350.30
6.airspace/plaster dabs	15.0	0.0000	0.1700	5.7545	0.0	0.00	4350.30
7.Plasterboard, standard	12.5	0.2100	0.0595	5.8141	45.0	0.56	4350.86
Internal surface	-	0.0000	0.1300	5.8141	0.0	0.00	4350.86

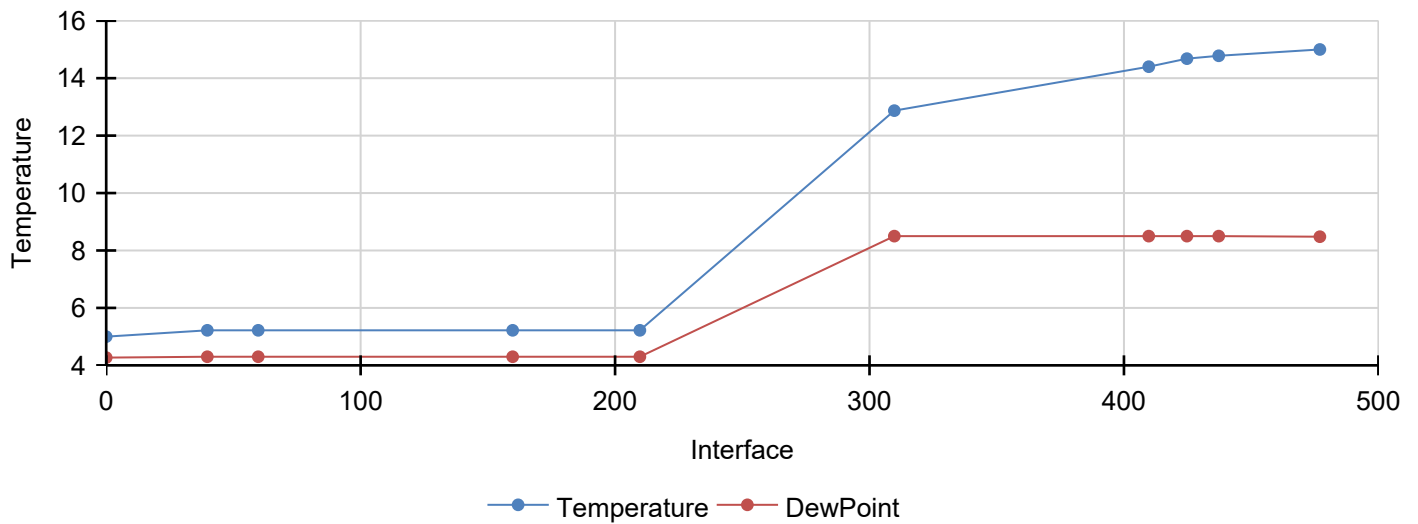
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Render - Cement and Sand	5.22	828.3	885.3	4.3	0.00	0.00	No
2. Render - Cement and Sand / Blockwork, medium	5.22	828.4	885.3	4.3	0.00	0.00	No
3. Blockwork, medium / Standard cavity	5.22	828.7	885.3	4.3	0.00	0.00	No
4. Standard cavity / Celotex GA4000	5.22	828.7	885.3	4.3	0.00	0.00	No
5. Celotex GA4000 / Thermalite Turbo	12.87	1107.4	1483.9	8.5	0.00	0.00	No
6. Thermalite Turbo / airspace/plaster dabs	14.40	1107.8	1639.2	8.5	0.00	0.00	No
7. airspace/plaster dabs / Plasterboard, standard	14.68	1107.8	1669.7	8.5	0.00	0.00	No
Plasterboard, standard / Internal surface	14.78	1107.9	1680.6	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1680.6	8.48	0.00	0.00	No

CONDENSATION RISK ANALYSIS



Interface temperature / Dew point graphical representation



CONDENSATION RISK ANALYSIS

Wall - Retaining Wall

Environmental conditions

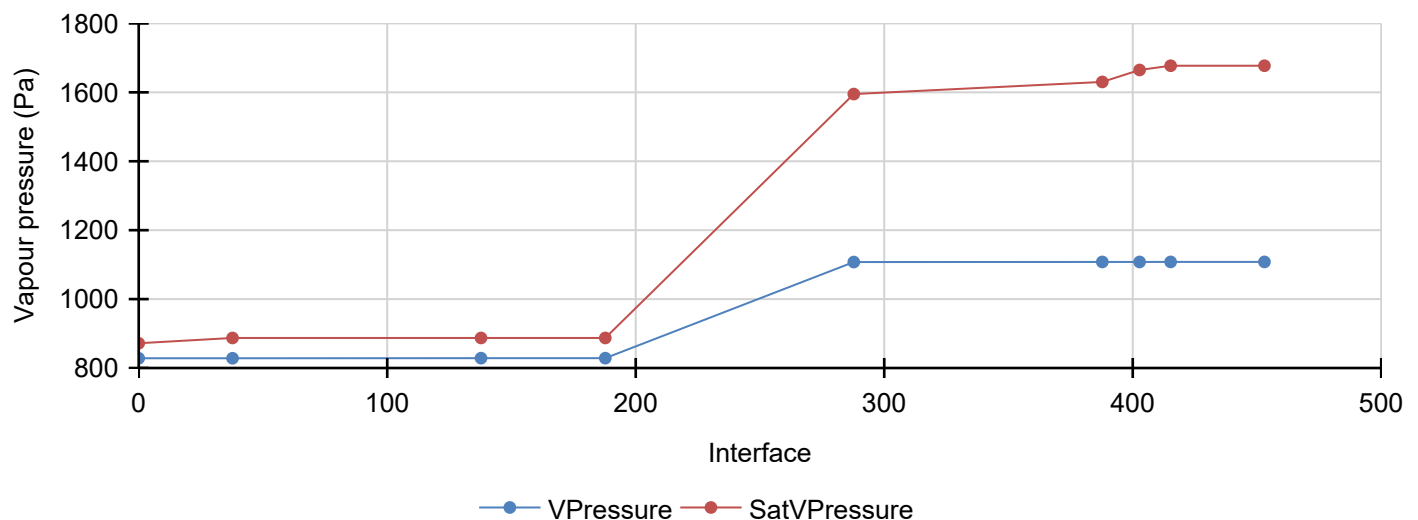
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.1300	0.1300	0.0	0.00	0.00
1.Blockwork, medium	100.0	0.5700	0.0000	0.1300	50.0	5.00	5.00
2.Standard cavity	50.0	0.0000	0.0000	0.1300	0.0	0.00	5.00
3.Celotex CW4000	100.0	0.0220	4.5455	4.6755	43373.0	4337.30	4342.30
4.Blockwork, medium	100.0	0.5700	0.1754	4.8509	50.0	5.00	4347.30
5.airspace/plaster dabs	15.0	0.0000	0.1700	5.0209	0.0	0.00	4347.30
6.Plasterboard, standard	12.5	0.2100	0.0595	5.0804	45.0	0.56	4347.86
Internal surface	-	0.0000	0.1300	5.0804	0.0	0.00	4347.86

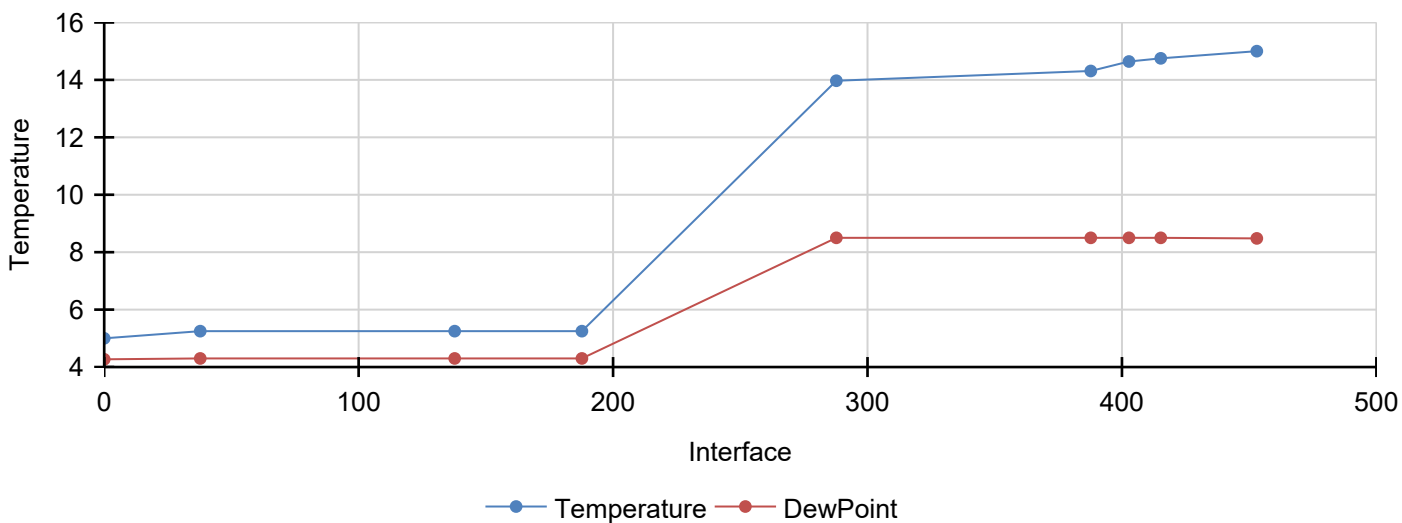
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Blockwork, medium	5.25	828.3	887.2	4.3	0.00	0.00	No
2. Blockwork, medium / Standard cavity	5.25	828.6	887.2	4.3	0.00	0.00	No
3. Standard cavity / Celotex CW4000	5.25	828.6	887.2	4.3	0.00	0.00	No
4. Celotex CW4000 / Blockwork, medium	13.97	1107.5	1595.0	8.5	0.00	0.00	No
5. Blockwork, medium / airspace/plaster dabs	14.31	1107.8	1630.2	8.5	0.00	0.00	No
6. airspace/plaster dabs / Plasterboard, standard	14.64	1107.8	1664.9	8.5	0.00	0.00	No
Plasterboard, standard / Internal surface	14.75	1107.9	1677.2	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1677.2	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS



CONDENSATION RISK ANALYSIS

Floor - Upper Ground Floor

Environmental conditions

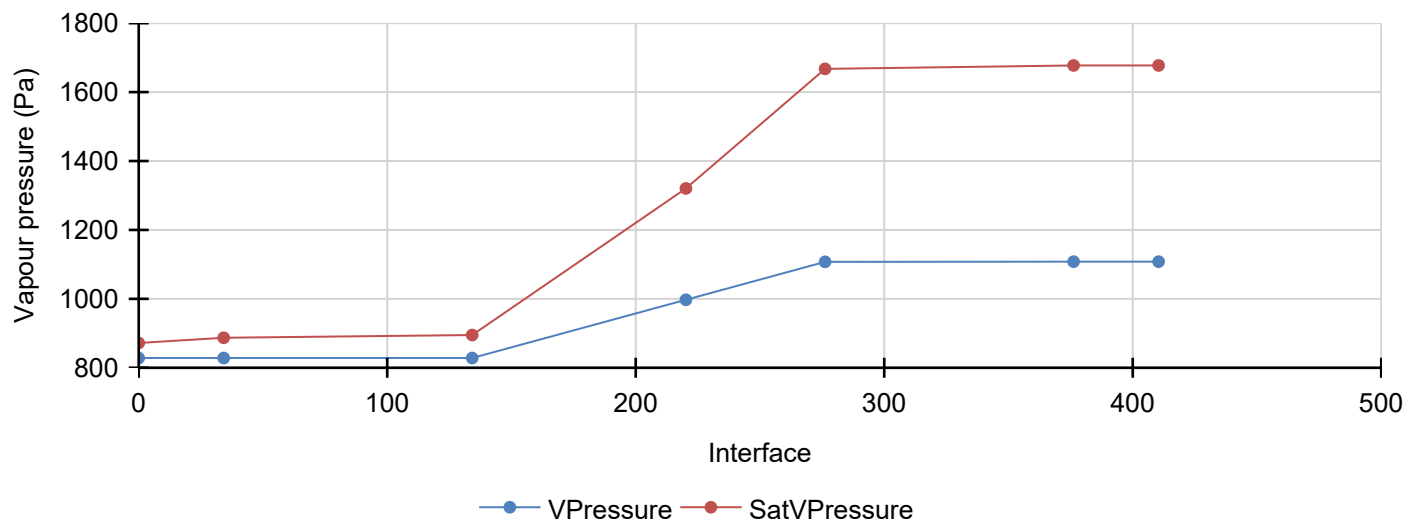
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.1700	0.1700	0.0	0.00	0.00
1.Screed	100.0	1.1500	0.0870	0.2570	0.0	0.00	0.00
2.Celotex SL5000 (86mm +)	86.0	0.0220	3.9091	4.1660	43373.0	3730.08	3730.08
3.Celotex SL5000 (56mm)	56.0	0.0230	2.4348	6.6008	43373.0	2428.89	6158.97
4.Blockwork, dense	100.0	1.5900	0.0629	6.6637	100.0	10.00	6168.97
Internal surface	-	0.0000	0.1700	6.6637	0.0	0.00	6168.97

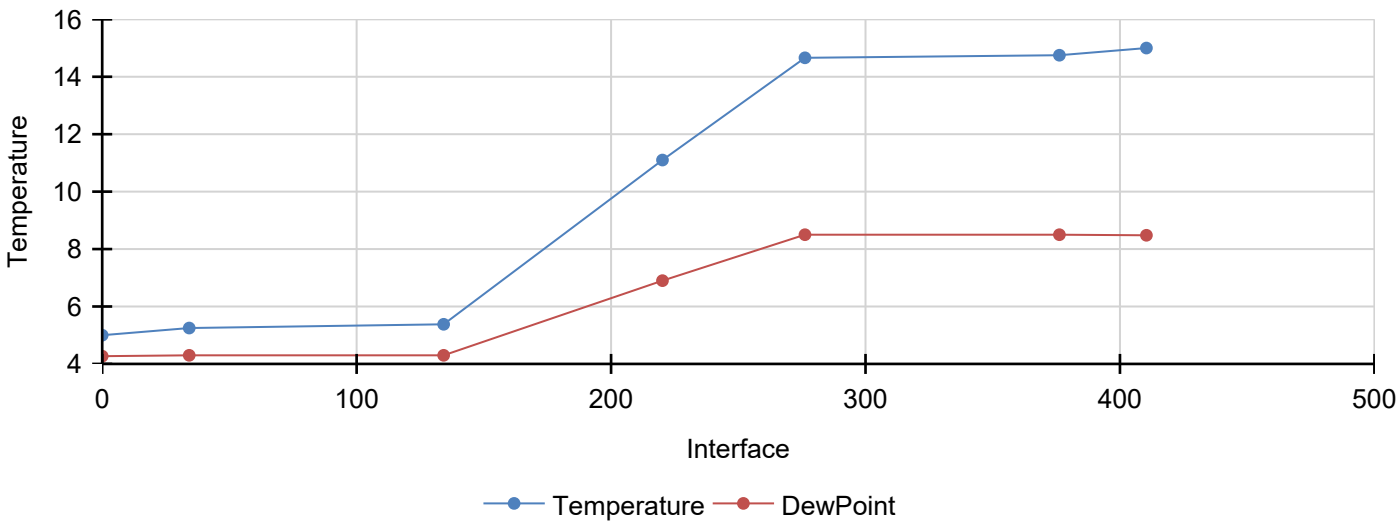
Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Screed	5.25	828.3	887.1	4.3	0.00	0.00	No
2. Screed / Celotex SL5000 (86mm +)	5.38	828.3	895.0	4.3	0.00	0.23	No
3. Celotex SL5000 (86mm +) / Celotex SL5000 (56mm)	11.10	997.3	1320.4	6.9	0.00	0.00	No
4. Celotex SL5000 (56mm) / Blockwork, dense	14.66	1107.4	1667.4	8.5	0.00	0.00	No
Blockwork, dense / Internal surface	14.75	1107.9	1677.3	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1677.3	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS



CONDENSATION RISK ANALYSIS

Floor - Lower Ground Floor

Environmental conditions

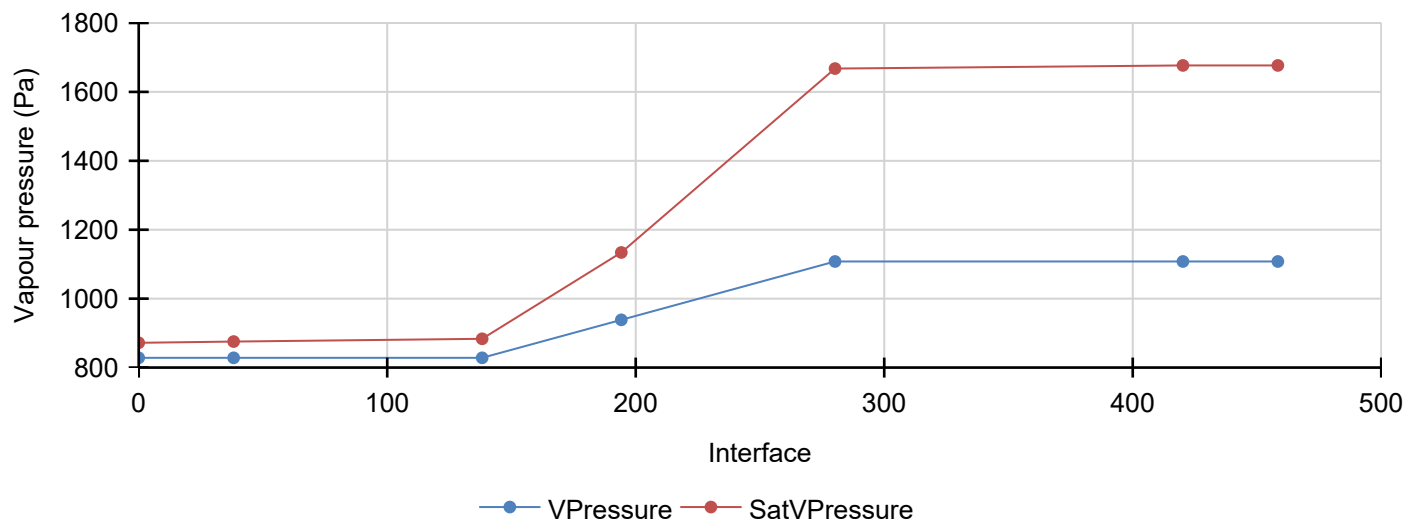
External conditions Temperature: °C Relative Humidity: %
Internal conditions Temperature: °C Relative Humidity: %

Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m².K/W	Cumulative thermal resistance m².K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.0400	0.0400	0.0	0.00	0.00
1.Screed	100.0	1.1500	0.0870	0.1270	0.0	0.00	0.00
2.Celotex SL5000 (56mm)	56.0	0.0230	2.4348	2.5617	43373.0	2428.89	2428.89
3.Celotex SL5000 (86mm +)	86.0	0.0220	3.9091	6.4708	43373.0	3730.08	6158.97
4.Concrete, reinforced (2% steel)	140.0	2.5000	0.0560	6.5268	0.0	0.00	6158.97
Internal surface	-	0.0000	0.1700	6.5268	0.0	0.00	6158.97

Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m² h	Cond. rate 60 days g/m² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Screed	5.06	828.3	875.5	4.3	0.00	0.00	No
2. Screed / Celotex SL5000 (56mm)	5.19	828.3	883.5	4.3	0.00	0.24	No
3. Celotex SL5000 (56mm) / Celotex SL5000 (86mm +)	8.83	938.5	1134.0	6.1	0.00	0.00	No
4. Celotex SL5000 (86mm +) / Concrete, reinforced (2% steel)	14.66	1107.9	1667.7	8.5	0.00	0.00	No
Concrete, reinforced (2% steel) / Internal surface	14.75	1107.9	1676.8	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1676.8	8.48	0.00	0.00	No



Interface temperature / Dew point graphical representation

CONDENSATION RISK ANALYSIS

