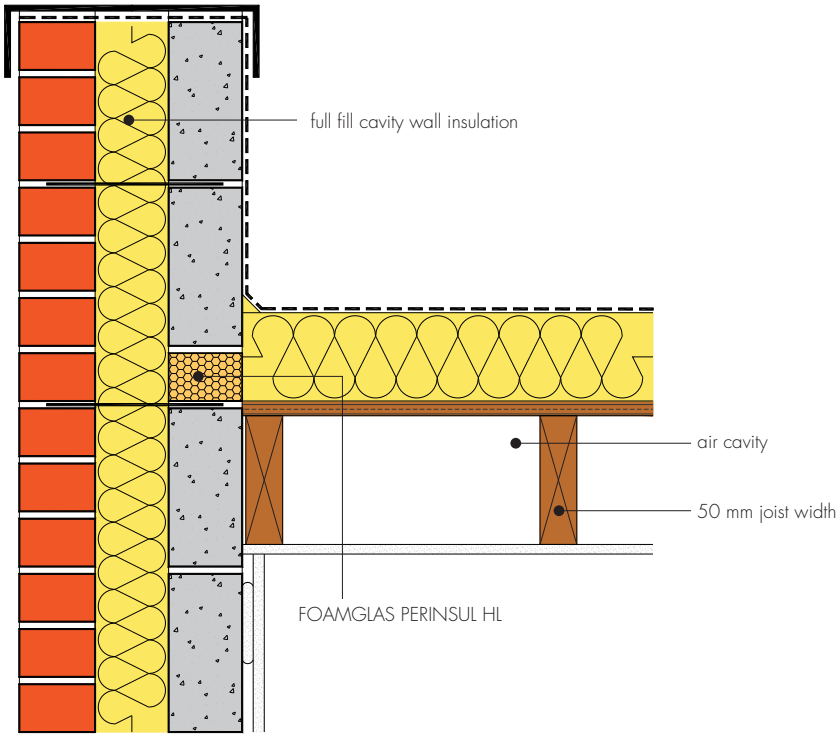
FOAMGLAS® PERINSUL HL

External Masonry Cavity Wall. Full Fill

Flat roof with parapet — Warm deck — Insulation above joists

CD0057

constructive DETAILS



This indicative guidance illustrates good practice for design and construction with respect to achieving thermal performance and air barrier continuity only. It must be implemented taking due regard of site conditions and all other requirements imposed by Building Regulations.

Notes

- FOAMGLAS PERINSUL HL 65 mm by 100 mm with λ = 0.058 $W \cdot m^{-1} \cdot K^{-1}$
- 100 mm thickness inner leaf blocks
- Maximum 200 mm air cavity thickness (between roof joists)
- 50 mm minimum joist width
- Ensure that roof insulation tightly abuts the inner face of the parapet wall and fully overlaps the Perinsul HL unit maintaining continuity with wall insulation
- If required by BS 5250 : 2011 use of a vapour control layer between deck and insulation
- ensure that the full fill wall insulation is installed correctly between the inner and outer leaf of the cavity wall with no gaps
- ensure that the full fill wall insulation is fit for purpose with regard to water absorption and wall exposure
- seal between the ceiling and wall with either plaster, adhesive or flexible sealant.

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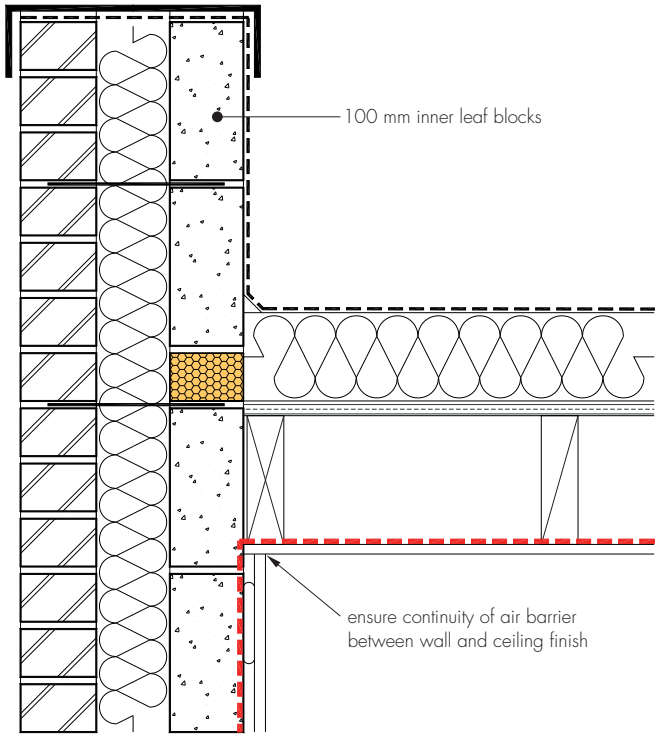

denotes 'notional' line of continuous air barrier to be maintained

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Calculated ψ-values for this detail

	Wall U value less than or equal to 0.20 $W \cdot m^{-2} \cdot K^{-1}$		Wall U value between 0.21 and 0.25 $W \cdot m^{-2} \cdot K^{-1}$		Wall U value between 0.26 and 0.30 $W \cdot m^{-2} \cdot K^{-1}$	
Inner leaf block conductivity ($W \cdot m^{-1} \cdot K^{-1}$)	ψ-value ($W \cdot m^{-1} \cdot K^{-1}$)	Temperature factor	ψ-value ($W \cdot m^{-1} \cdot K^{-1}$)	Temperature factor	ψ-value ($W \cdot m^{-1} \cdot K^{-1}$)	Temperature factor
0.19	0.078	0.95	0.085	0.95	0.094	0.93
0.57	0.103	0.93	0.111	0.93	0.118	0.92
1.13	0.121	0.93	0.129	0.92	0.136	0.91

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These values are valid for roof U value equal or less than 0.20 $W \cdot m^{-2} \cdot K^{-1}$.

In all the example calculations, wall ties are stainless steel double triangle types (2.5 per m^2), with 100 mm blocks. Examples to achieve theses U values are:

Wall U values $\leqslant$ 0.30 $W \cdot m^{-2} \cdot K^{-1}$ can be achieved with:

— 100 mm $\leqslant$ insulation thickness $\leqslant$ 115 mm with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 0.19 $W \cdot m^{-1} \cdot K^{-1}$ or less

— 110 mm $\leqslant$ insulation thickness $\leqslant$ 125 mm with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 1.13 $W \cdot m^{-1} \cdot K^{-1}$ or less

Wall U values $\leqslant$ 0.25 $W \cdot m^{-2} \cdot K^{-1}$ can be achieved with:

— 120 mm $\leqslant$ insulation thickness $\leqslant$ 150 mm with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 0.19 $W \cdot m^{-1} \cdot K^{-1}$ or less

— 130 mm $\leqslant$ insulation thickness $\leqslant$ 160 mm with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 1.13 $W \cdot m^{-1} \cdot K^{-1}$ or less

Wall U values $\leqslant$ 0.20 $W \cdot m^{-2} \cdot K^{-1}$ can be achieved with:

— 155 mm minimum insulation thickness with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 0.19 $W \cdot m^{-1} \cdot K^{-1}$ or less

— 165 mm minimum insulation thickness with $\lambda \leqslant 0.036$ $W \cdot m^{-1} \cdot K^{-1}$ and inner block conductivity of 1.13 $W \cdot m^{-1} \cdot K^{-1}$ or less.

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Guidance checklist

Date: ..... Site manager/supervisor: .....

Site name: ..... Plot No: .....

Ref	Item	Yes/No Inspected (initials and date)
1	Is the FOAMGLAS PERINSUL HL insulated block as specified? — Dimensions: width 100 mm and thickness 65 mm — Thermal conductivity of 0.058 $W \cdot m^{-1} \cdot K^{-1}$.	☐ ☐ ..... ☐ ☐ .....
2	Are both vertical faces of the insulated block fully in contact with wall/roof insulation?	☐ ☐ .....
3	Is the ceiling air cavity thickness 200 mm maximum?	☐ ☐ .....
4	Is the width joist 50 mm minimum?	☐ ☐ .....
5	Is the full fill wall insulation installed correctly with no gaps?	☐ ☐ .....
6	Is the full fill wall insulation appropriate for moisture and wall exposure?	☐ ☐ .....
7	Is the roof insulation firmly against the inner face of the parapet wall leaving no gaps?	☐ ☐ .....
8	Is the continuity of the air barrier between the ceiling and the wall achieved? If not, please provide details.	☐ ☐ .....

Notes (include details of any corrective action)

Constructive Details Ltd
Bucknalls Lane,
Watford
Hertfordshire WD25 9BA

t: + 44 (0)1923 665300
f: + 44 (0)1923 665301

e: enquiries@constructivedetails.co.uk
w: www.constructivedetails.co.uk