thermenergy

PART L 2010 : EXTENSIONS (DOMESTIC) : PART L1B

EXTERNAL WALLS

Cavity Masonry Wall U-Value = 0.28W/m²K

Option 1A : Full-Fill Insulation (Batts) 300mm wall

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
100mm Rockwool Batts (or Dritherm, Isover etc)
100mm Celcon Block (Celcon Standard 3.6N)
13mm Plaster Finish (or plasterboard on dabs) internal finish

Option 1B : Full-Fill Insulation (Batts) 285mm wall

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
85mm Dritherm 32
100mm Celcon Block (Celcon Standard 3.6N)
13mm Plaster Finish (or plasterboard on dabs) internal finish

Option 1C : Full-Fill Insulation (Batts) 275mm wall

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
75mm Xtratherm (Xtratherm CavityTherm PIR board)
100mm Concrete Block (any type of block - dense, medium, or aircrete)
13mm Plaster Finish (or plasterboard on dabs) internal finish

Option 2 : Full-Fill Insulation (Blown)

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
100mm Blown Insulatior (eg Instafibre)
100mm Celcon Block (Celcon Solar 2.9N)
13mm Plaster Finish (or plasterboard on dabs) internal finish

Option 2 : Partial-Fill Insulation

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
50mm Residual Cavity (clear cavity, low-E)
45mm Celotex CW4000 (or Kingspan, Xtratherm etc)
100mm Celcon Block (Celcon Standard 3.6N)
13mm Plaster Finish (or plasterboard on dabs) internal finish

Timber Frame Wall U-Value = 0.28W/m²K

Option 1 : 89mm Timber Frame

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
50mm Clear Cavity
4mm YBS Breather-Foil
9mm Sheathing Board (plywood or osb)
60mm Celotex GA4000 (or Kingspan, Xtratherm etc) between timber studs
12.5mm Plasterboard

EXTERNAL WALLS (cont)

Option 2 : 140mm Timber Frame

102.5mm Facing Brick (or rendered/clad 100mm block) outer leaf
50mm Clear Cavity
4mm YBS Breather-Foil
9mm Sheathing Board (plywood or osb)
140mm Mineral Wool (eg Rockwool etc) between timber studs
12.5mm Plasterboard

Option 3 : Timber Frame (no masonry outer leaf)

Tiles/Cladding on Battens
90mm Celotex GA4000 (or Kingspan, Xtratherm etc) between 125mm timber studs
12.5mm Plasterboard

GROUND FLOOR

Concrete Floors U-Value = 0.22W/m²K

Option 1
125mm Jablite (Jabfloor 70) Expanded Polystyrene

Option 2
100mm Styrofoam or Polyfoam Extruded Polystyrene

Option 3
75mm Celotex or Kingspan Rigid Foil-Faced Foam Board (PUR or PIR or Phenolic)

Timber Floors U-Value = 0.22W/m²K

Option 1
150mm Rockwool Between Timber Floor Joists (supported on netting)

Option 2
100mm Celotex GA4000 Between Timber Floor Joists (on battens, nails, or clips)

UPPER FLOORS

For example - floors over integral garages, or floors over basement level car parking

Concrete Floors U-Value = 0.22W/m²K

Option 1
80mm Celotex GA4000 To underside of concrete floor + battens + ceiling finish

Timber Floors U-Value = 0.22W/m²K

Option 1
200mm Rockwool Between timber floor joists

ROOF

Roof Voids U-Value = 0.16W/m²K

Option 1

270mm Rockwool	100mm between joists + 170mm cross-laid over joists

Sloping Ceilings U-Value = 0.18W/m²K

Option 1 (between rafters)

165mm Celotex	165mm between rafters (600mm centres)

Option 2 (between rafters)

175mm Celotex	175mm between rafters (400mm centres)

Option 3 (between/under rafters)

135mm Celotex	100mm between rafters + 35mm under rafters (600 centres)
145mm Celotex	100mm between rafters + 45mm under rafters (400 centres)

Option 4 (multi-foil)

75mm Celotex (between rafters)	(80mm Celotex if rafters at 400mm centres)
Multi-foil insulation (across rafters)	Thinsulex or Tri-Iso or Superquilt etc (gap both sides)

Flat Roofs U-Value = 0.18W/m²K

Option 1 (between joists)

165mm Celotex XR4000	165mm between joists (600mm centres assumed)

Option 1 (over joists)

126mm Celotex TD4000	126mm composite board (over timber roof deck)

WINDOWS/DOORS

Windows U-Value = 1.60W/m²K (or Window Energy Rating Band C)

Double-glazed + 16mm argon gap + soft coat low-E glass

Doors U-Value = 1.80W/m²K

Double-glazed + 16mm argon gap + soft coat low-E glass

Note : The above applies to both new and replacement windows/doors/rooflights