

Roof (Pitched to single storey side extension)

Matching interlocking conc tiles on 25x38 treated battens on Tyvek or equal breathable membrane on 150x50 Rafters at 400 crs bolted to 150x50 ceiling joists with M12 bolts and plate connectors or min two no 100mm timberlock screws per connection. 220x50mm ridge board. Joists supported at midspan by 150x50 binder and hangers at max 1800 crs Rafters notched onto wall plates and fixed with truss clips. To flat ceiling areas lay min 300mm Crown Wool insulation (150 between joists and 150 across joists) to achieve 'U' value of max 0.16Wm²/k. 12.5mm Duplex foilbacked plasterboard to flat ceiling areas (or use polythene as vapour barrier), taped and 5mm skim finished. Provide 1M long 30x5mm vertical galv ms straps at 1200crs to roof/wall junction. Gable wall strapped to roof across 3no rafters with nogging between.

Roof (Pitched to existing loft)

To existing sloped ceiling area in loft, insulate with 100 Celotex between existing rafters (add 150x50 rafters between existing rafters extending from ashlar wall to ridge) leaving 50 air gap above and TLX Silver thermal insulation to underside rafters fixed with 25x38 battens @ 400 crs and to continue down ashlar walls to floor level. Add 100 Celotex between studs to ashlar walls. To achieve max 'U' value of 0.18Wm²/k. To remaining flat ceiling area in loft lay min 300mm Crown Wool insulation (150 between joists and 150 across joists) to achieve 'U' value of max 0.16Wrn²/k. Maintain 50mm air gap at insulation. 12.5mm plasterboard to ceiling (TLX to act as vapour barrier), taped and 5mm skim finished. Rooflight trimmers to be fixed with jiffy hangers.

Roof (Flat - warm_deck)

PVC (Polyvinyl Chloride) or PIB (Polyisobutylene) to ISO14040 single ply roof membrane laid to Single Ply Roofing Association (SPRA) guidelines Or Cure-it GRP waterproofing system (graphite grey 00 A 13) to BS and ETAG standards and to comply with BS6229 code of practice for flat roofs (min 1:60 falls) on 18mm OSB3 T&G deck on 120 PIR rigid flat roof insulation as warm deck on 500-gauge VCL on 12mm Stirling board on firing pieces on 175x50 joists at 400 crs. To underside fix 12.5mm foil backed plasterboard and 5mm skim finish. To achieve max 'U' value of 0.18Wm²/k. Provide 1M long 30x5mm vertical galv ms straps at 1800crs to roof/wall junction.

450x650 deep trench fill foundation to min depth of 1.0m or as directed by Building Control Inspector. Foundation concrete spec to be GEN1 (1:3:9 mix) or GEN3 (1:2:4 mix) with reinforcement where building over drains to BS 8500-2.

Ground Floor Construction (Ground Bearing Slab)

Min 75mm screed on 500-gauge separation layer on 80mm Celotex rigid foam board insulation with 25mm edge upstands to perimeter on 100mm concrete slab on 1200-gauge DPM lapped with DPC on min 150 compacted and blinded hardcore. Alternatively, insulation can be placed under slab and separation layer will not be required. Floor to be level with existing. Max 'U' value 0.22 Wm²/k.

<u>Timber</u> Structural

Structural timbers double pressure impregnated to BS5268 Pt. 5. Strength class and grades to BS5268 Pt.2 '84. Use C24 timbers only, or as specified by engineer. External timbers pre-treated with approved preservatives. Quality of workmanship to BS1186.

External Walls - 100 Timber Frame (Boarding to dormer)

100x50 studs at 400 crs with 100x50 sole and head plates. Nogging at 1200 height. Insulate between studs with 90 Celotex insulation with 25mm Celotex to inside face before fixing plasterboard. To outside fix Hardi plank boarding onto 25x38mm treated vert battens at 400 crs. (Where on boundary fix 6mm masterboard over ply) on breather paper on 9mm Sterling board fixed to studs. Internally fix 12.5mm plasterboard fixed through 25 Celotex into studs (Celotex to act as vapour barrier). Finish with 5mm skim coat. All to achieve 'U' value of 0.28Wm²/k. Alternatively, 150x50 studs may be used with 150 Crown Wool/Dritherm insulation batts between studs.

External Walls (Cavity brickwork to side extension)

300mm cavity brickwork with 100mm cavity (100mm Plasmor Fablite or equal 3.5KN blocks). Use min 100mm Crown Dritherm 34 cavity wall batts to achieve 'U' value of 0.28Wm²/k. Stainless wall ties (225mm long) at 750 horiz. and 450 vert. staggered crs. 300 crs. at openings. Internally apply 12.5 plasterboard on dabs and 5mm skim finish. Use insulated Damcor vert DPC at all openings or proprietary cavity closers. Sulphate resisting brick below DPC (facing brick to exposed areas). Use Hyload DPC. All to achieve 'U' value of 0.28Wm²/k.

PRINT @ A3 SHEET SIZE

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