

MODERN POLYURETHANE INSULATION SYSTEMS SAVE NEW BUILD CONSTRUCTION FROM SAP FAILURE ...

FROM SAP FAIL.....

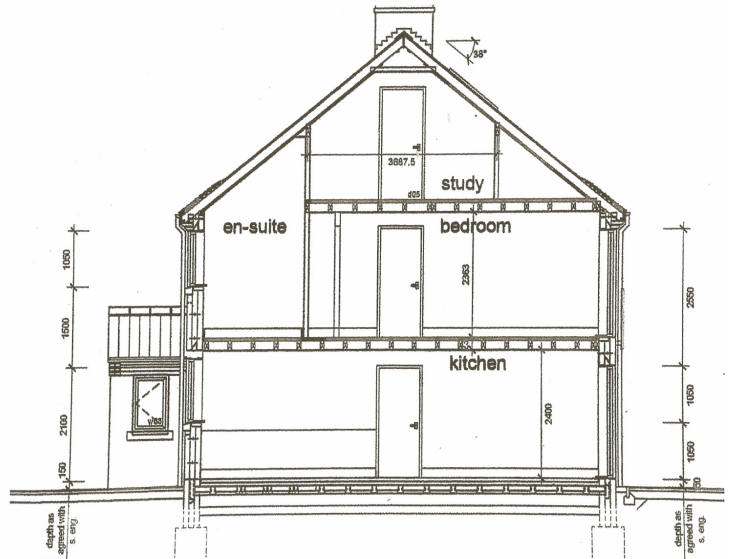
The Problem:

4/5 bedroom, 4 bathroom detached dwelling with rooms in roof. Brick and block cavity construction with plasterboard dry lining. SAP pass required for Building Regulations and Premier Guarantee.

Failed to meet the TER (Target CO₂ Emission Rate) based on the Architects' design and specification, due to a combination of:

- Traditional insulation materials specified
- Limited space for roof insulation
- Large north-facing windows and patio doors
- Large baths and hot water storage tank

Masonry construction method with 10mm joints and dry lined typically provides poor air tightness results. Air permeability estimated at 10 m³/h/m².



FUNDAMENTAL IMPROVEMENTS TO THE FABRIC OF THE BUILDING VIA ITS INSULATION SYSTEMS ARE THE ANSWER

.....TO SAP PASS

The Solution:

Insubond Ltd sprayed and injected as follows—

Sprayed Isothane Duratherm® insulation foam:

- From eaves to ridge between 150mm rafters
- Additional foam to the eaves and above small ceiling giving average depth 175mm
- Averaging approved by Building Inspectors guaranteed internal room height for third storey
- Allowed for features—vaulted ceilings, exposed beams and more useable cupboard space at eaves
- U-Value 0.16 W/m²K.

Injected Isothane Technitherm® cavity insulation foam:

- From equipment on 3.5 tonne van
- Via internal blockwork holes
- 100mm cavity
- Barrier to water ingress
- Sealed join to roof insulation
- U-Value 0.21 W/m²/K

An Air Permeability result of 3 m³/h/m² was in line with Best Practice and resulted in a 10% improvement in the SAP rating. PTO



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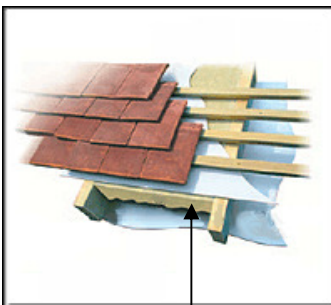
INVESTOR IN PEOPLE



“Duratherm® insulated the most awkward areas giving a complete seal. Its flexibility allowed for additional features”



“Technitherm® provided a complete water resistant inner seal to the cavity with no need for Cavity Trays or Weep Holes”



Duratherm®



Door Fan Test

UNBEATABLE AIR-TIGHTNESS ACHIEVED

Build:

Concrete strip foundation; brick and insulated block wall with 100mm cavity; beam & insulated block ground floor; posi joist first & second floor with cut roof; rafter depth 150mm & steel purlins.

Architect Specified:

Roof: 120mm PIR Board, estimated U-Value 0.20 W/m²K.
 External walls: 50mm partial fill PIR Board, calculated U-Value 0.26 W/m²K.



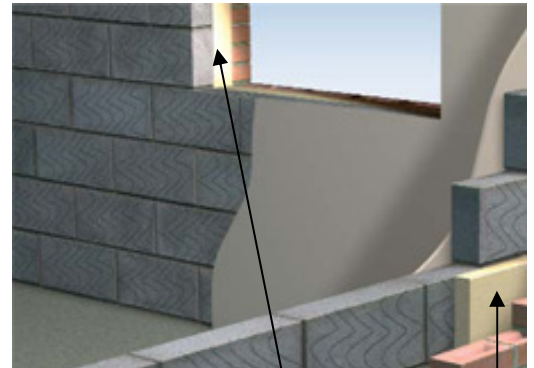
The test house

Used:

Roof: **Duratherm®** insulation at various depths averaging 175mm, U-Value **0.16 W/m²K**, BBA Certificate 08/4567, (certified as ‘Insubond Insulation’).

External walls: 100mm **Technitherm®** cavity foam, U-Value **0.21 W/m²K**, BBA Certificate 97/3426.

Duratherm® insulation also applied at 25mm below under-floor heating for thermal and acoustic improvements.



Technitherm®

Technitherm®:

A non settling water resistant closed cell cavity insulant which is also recommended as an effective flood protection measure or wall stabilisation system. Engineered on site to provide a structural rigid Polyurethane Foam which adheres to both the inner and outer leafs to create the most effective full fill cavity insulation available.

Duratherm®:

A polyurethane foam with superior insulation values and usability. Engineered on site to perform the most awkward of tasks. Depths can be easily varied to accommodate specialist designs and details whilst fully complying with Building Regulations.

Isothane Ltd provides a U-value and Condensation Risk analysis service free of charge.

WE ALSO HAVE AN AIR-TIGHTNESS OF 3 FOR A DETACHED TIMBER FRAME HOUSE

Test reports available on request



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