

**SPECIFICATION – PART L BUILDING REGULATION 2021**

**07.03.2024 Luke Butler – Elmhurst Accreditation Number: Y070-0001**

**Plasmor, Knottingley Tel: 01977 673221 Fax: 01977 607071**

**email: luke.butler@plasmor.co.uk**

**SAP Calculation LSB 21-0312**      **Air Source Heat Pump, LPG Boiler, PV  
New House, Hill House, Colden Lane, Old  
Alresford**

**External wall (Brick):**      Brickwork  
5-10mm Cavity  
90-95mm Insulation (Kingspan K106, Celotex  
Thermaclass 21, Unilin Cavitytherm CT/PIR  
K=0.021)  
100mm Plasmor Aglite  
Plasterboard on dabs  
Plaster skim  
**U-Value = 0.18W/m<sup>2</sup>K**

**Dormer cheeks:**      100mm Insulation between studs (K = 0.022  
Kingspan, Unilin, Celotex)  
50mm Insulation over studs (K = 0.022  
Kingspan, Unilin, Celotex)  
Plasterboard  
Plaster skim  
**U-Value = 0.18W/m<sup>2</sup>K**

**Stud walls to room in roof:**      Insulation at rafter level so thermal insulation is  
not needed between the studs.

**Ground floor:**      Screed  
150mm Insulation (K=0.022 Kingspan, Unilin,  
Celotex)  
Plasmor Aglite beam and block or Solid Concrete  
**U-Value = 0.12W/m<sup>2</sup>K**

**Plane roof:**      250mm Mineral Wool K=0.040 over joists  
200mm Mineral Wool K=0.040 between joists  
12.5mm Plasterboard  
Plaster skim  
**U-Value = 0.09W/m<sup>2</sup>K**

**Sloped roof:**      50mm Clear cavity between rafters  
100mm Insulation between rafters (K = 0.022  
Kingspan Unilin, Celotex)  
50mm Insulation under rafters (K = 0.022  
Kingspan Unilin, Celotex)  
Plasterboard  
Plaster skim  
**U-Value = 0.16W/m<sup>2</sup>K**

<b>Flat roof areas:</b>	<p>22mm Plywood  150mm Insulation (K = 0.022 Kingspan, Unilin, Celotex)  22mm Plywood  Plasterboard  Plaster skim  <u><b>U-Value = 0.15W/m<sup>2</sup>K</b></u></p>
<b>Doors:</b>	To achieve <u><b>U-Value of 1.1W/m<sup>2</sup>K</b></u>
<b>Windows:</b>	To achieve <u><b>U-Value of 1.3W/m<sup>2</sup>K</b></u> Double glazed, uPVC, g value of glazing = 0.63
<b>Heating system:</b>	<p>Air Source Heat Pump installed  To underfloor heating &amp; radiators  <i>Once heating designs have been completed, please contact the Technical Office so the SAP calculation can be amended if required,</i></p> <p>Bulk LPG System boiler also installed  Boiler interlock  Delayed start thermostat</p>
<b>Heating controls:</b>	Time and Temperature Zone Control
<b>Hot water:</b>	<p>From cylinder – size, make and model to be confirmed. Cylinder to have:  Primary pipework insulated.  Cylinder stat  Water heating timed separately.  And to be in heated space</p>
<b>Showers (flow rate):</b>	<p>9 litres/min  From unvented cylinder</p>
<b>Secondary heating:</b>	Wood only burner to be installed, minimum efficiency of 70%
<b>Air pressure:</b>	To achieve a design figure of 4.0m <sup>3</sup> /hm <sup>2</sup>
<b>Ventilation:</b>	Natural with extract fans
<b>Efficacy of all fixed lighting:</b>	Minimum 80lm/W
<b>Renewables:</b>	<p>A minimum of 6kWp of PV to be installed to the southeast or southwest orientation.</p> <p>Export capable meter</p> <p>PV diverter to be fitted so excess electricity generated can feed the immersion in the hot water cylinder</p>

<b>Thermal bridging:</b>	Calculated in SAP 10 based on the use of independently assessed Registered Construction Details and Unilin calculated junction details.
<b>Lintels:</b>	Keystone Hi-therm lintels or equivalent installed throughout
<b>Photographic evidence:</b>	Requirement to provide evidence as detailed in Appendix B of Part L 2021
<b>Part O (Overheating):</b>	All dwellings subject to Part L 2021 are required to show compliance to Part O – Overheating. It is likely that the result of this calculation will lead to amendments to window dimensions/ glazing properties which will need to be fed back into the SAP calculation. Once completed, please send a copy of the overheating calculation and/or updated drawings to allow the amendments to be made

#### **SAP result Plot 1**

**TER: 8.08**  
**DER: 7.66**

**TFEE: 48.55**  
**DFEE: 47.88**

**TPER: 44.36**  
**DPER: 44.29**

**EPC – 82 B**

## Thermal bridging checklist for SAP Part L 2021

To enable us to issue the EPC, please sign off the relevant construction details below and return to us with the 'As Built' form.



Junction		Psi Value Calculated By	Full Fill Details	Psi value
E2	Keystone	Keystone	Windows and doors – other lintels. Keystone Hi-therm	0.064
E3	E3-01 RCD	RCD	Windows and doors – sills	0.019
E4	E4-01 RCD	RCD	Windows and doors – jambs	0.014
E5	E5-12 RCD	RCD	Ground bearing floor/suspended ground floor concrete	0.063
E6	E6-01 RCD	RCD	Intermediate floor	0.001
E10	E10-01 RCD	RCD	Pitched roof – eaves insulation at ceiling level	0.062
E11	UI-CTPIR-E11-RF-03 V2	Unilin	Pitched roof – eaves insulation at rafter level	0.06
E16	E16-01 RCD	RCD	Corner (Normal)	0.044
E17	E17-01 RCD	RCD	Corner (Inverted)	-0.079
R1	UI-GEN-R1-Head-01 V1	Unilin	Head of roof window	0.061
R2	UI-GEN-R2-Sill-01 V1	Unilin	Sill of roof window	0.06
R3	UI-GEN-R3-Jamb-01 V1	Unilin	Jamb of roof window	0.056

SAP Reference: **LSB 21-0312**

Site details: **New House, Hill House, Colden Lane, Old Alresford**

Signed \_\_\_\_\_

Date \_\_\_\_\_

Name (please print) \_\_\_\_\_