

SAP Input Summary – Design

Purton Development

SAP 2021 Part L Regulations (SAP 10.2)

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Lovell Partnership Ltd (Cardiff)



DE-25153	First Issue	First Revision	Second Revision	Third Revision
Date	15 th June 2026	16 th June 2026		
Produced by	Nathan Boyle	Nathan Boyle		
Checked by	-	-		
Applicable regulations	SAP 2021 Part L Regulations (SAP 10.2)			
Revision Notes		Minor Amendments to U-Values, Emitters, Thermal Bridging Etc..		

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1. SAP Input Summary

1.1 These calculations are based on Approved Document Part L (2021)

Reference/Source			Details	Comments
Floor U-Values	Ground Floor	Specification	0.11 W/m ² K	Proposed Construction 75mm Screed, 150mm Topsheet Insulation, 150mm EPS Grey Insulation Between Concrete Beams – U-Value Calculation to be Confirmed
	Party Floor	Specification	0.00 W/m ² K	Screed on Insulation, Precast Concrete Plank Floor – Kappa Value 40KJ/m ² K
Wall U-Values	External Walls – Brick	Specification	0.17 W/m ² K	12.5mm Plasterboard on Plaster Dabs, 100mm Medium Density Concrete Block ($\lambda = 0.57$), 100mm Unilin Thin-R XT/CW Partial Fill Wall Insulation ($\lambda = 0.022$), 50mm LowE High Resistance Cavity, 102.5mm Brick Outer Leaf
	Party Walls	Specification	0.00 W/m ² K	Walls Must be Fully Filled to Achieve 0.00W/m ² K U-Value – Construction Lightweight Plasterboard on Dabs, Medium Density Concrete Block Either Side of Party Wall Insulation – Kappa Value 110KJ/m ² K Wall Built to Robust Detail E-WM-20
Roof U-Values	Roof – Insulation at Joists	Specification	0.09 W/m ² K	12.5mm Plasterboard, 100mm Mineral Wool Quilt ($\lambda = 0.044$) Between Timber Joists @ 400mm Centres, 400mm Mineral Wool Quilt ($\lambda = 0.044$) Above Joists, Laid Counter Direction to Unheated Roof Void
	Party Roof	Specification	0.00 W/m ² K	Screed on Insulation, Precast Concrete Plank Floor – Kappa Value 30KJ/m ² K
Thermal Mass	Internal Walls – Block	Specification	0.00 W/m ² K	Internal Block Walls with Plasterboard on Dabs – Kappa Value 75KJ/m ² K
	Internal Walls – Stud	Specification	0.00 W/m ² K	Internal Stud Walls with Plasterboard – Kappa Value 9KJ/m ² K
	Internal Ceiling	Specification	0.00 W/m ² K	Plasterboard Ceiling to Timber Joists – Kappa Value 9KJ/m ² K

Reference/Source			Details	Comments
	Internal Floor	Specification	0.00 W/m ² K	Timber Floor to Timber Floor Joists – Kappa Value 18KJ/m ² K
Openings U-Values	Windows	Specification	1.20 W/m ² K	Double Glazed, Argon Filled, Low-E Coated Glazing G Value: 0.63
	French Doors	Specification	1.40 W/m ² K	Double Glazed, Argon Filled, Low-E Coated Glazing G Value: 0.63
	Solid Door	Specification	1.20 W/m ² K	Solid Composite Door or Similar
Thermal Bridging	y-value	Calculated	Various	Bespoke Psi Junctions used Throughout
	Please note: Calculated / bespoke psi value details need to be used in the SAP Calculations. ACD details are no longer available for use in SAP Calculations. All details need to be built in accordance with working drawings from which the psi values are calculated to remain valid within the SAP Calculation. Failure to follow the construction drawings from which the psi values are completed from will require 1. The psi values to be updated to remain in the SAP Calculations 2. The incorporation of default PSI values to be recorded in the SAP Calculation. Please note the use of default junction heat loss values will adversely affect the performance of the dwelling(s) against Part L.			
Ventilation	Air Tightness	Specification	4.00m ³ /hm ²	All New Build Dwellings to be Air Tested
	Mechanical Ventilation	Specification	dMEV	Vent Axia Lo-Carbon NBR dMEV C 125 Decentralised Mechanical Extract Ventilation (dMEV) System (PCDB No 500778) Installed to 1 x Kitchen and Addition Wet Rooms (Utility Room/Toilet/Bathroom/Ensuites) Only
Heating	Heating System	Specification	Air Source Heat Pumps (ASHP)	2, 3 & 4 Bedroom Dwellings – Ideal Heating 8.0 kW HP290 Monobloc Air Source Heat Pump – ID No. 107984 1 Bedroom Dwellings - Ideal Heating 4.5 kW HP290 Monobloc Air Source Heat Pump – ID No. 107968 – Pump 2013 or Later and Installed in Heated Space, Design Flow Temperature <45°C, MCS Installation Assumed
	Controls	Specification	Programmer	All Dwellings - Programmer with Room Thermostat and TRVs
	Distribution	Specification	Radiators	All Dwellings - Oversized Radiators Installed Throughout

Reference/Source			Details	Comments
Hot Water Services	Hot Water Heating	Specification	From Ideal Source Heat Pump	4 Bedroom Dwellings - 300litre Ideal HP300DHW Heat Pump Rated Hot Water Cylinder – Declared Heat Loss 1.74 kWh/day 2 & 3 Bedroom Dwellings - 250litre Ideal HP250DHW Heat Pump Rated Hot Water Cylinder – Declared Heat Loss 1.52 kWh/day 1 Bedroom Dwellings - 180litre Ideal HP180DHW Heat Pump Rated Hot Water Cylinder – Declared Heat Loss 1.70 kWh/day Cylinder to be Installed with a Cylinderstat, All Primary Pipework Fully Insulated and Cylinder on Independent Timer from Main Heating. Cylinder Installed in Heated Space with Electric Immersion Heat Transfer Area 2.5m² For 180litre Cylinder, 3m² for 250/300litre Cylinder
	Waste Water Heat Recovery System (WWHRS)	Specification	N/A	No WWHRS Installed
	Showers	Specification	10 Litres/Min	Connected to Hot Water Cylinder – Cold Water Source from Mains
Secondary Heating System	Secondary Heating	Specification	N/A	No Secondary Heating Specified
Lighting		Specification	100% Low Energy Lighting	Lights Rated at 15W with an Efficacy of 100Lumens/Watt Full lighting Schedule to be Provided
Tariff & Metering		Specification	Electricity Tariff	Standard Electricity Tariff Assumed
			Gas Meter	No Gas Meter Installed, No Gas on Site
			Electricity Meter	Smart Electricity Meter Installed
Renewables		Specification	Photovoltaics (PV)	PV Maybe Required For Local Planning Policies

Reference/Source	Details	Comments
Regulations	England Part L1 (2021) SAP 10.2	

Disclaimer: Please note that the inputs outlined above are key to the project's compliance with **Part L** of building regulations. Should any of the details above not accurately represent the proposals of the project or if any of the measures above cannot be incorporated for any reason, please let us know, as the project may fail the regulations. If changes are made to the above specification without contacting us, and the project fails there will be a consultation fee charged to help ensure the building passes the relevant regulations.

2. Thermal Junctions

Ref	External Wall Junctions	Psi Value	Bespoke	Default	Reference
E2	Other Lintels (Including Other Steel Lintels)	0.193	✓		Catnic CG 100/150 10-11-17
E3	Sill	0.027	✓		MPF-150-E3-01
E4	Jamb	0.022	✓		MPF-150-E4-01
E5	Ground Floor	0.101	✓		MPF-150-E5-02
E6	Intermediate Floor within a Dwelling	0.001	✓		MPF-150-E6-01
E7	Party Floor Between Dwellings (Block of Flats)	0.037	✓		MPF-150-E7-01
E10	Eaves (Insulation at Ceiling Level)	0.069	✓		MPF-150-E10-01
E24	Eaves (Insulation at Ceiling Level, Inverted)	0.150		✓	
E12	Gable (Insulation at Ceiling Level)	0.087	✓		MPF-150-E12-01
E16	Corner (Normal)	0.039	✓		MPF-150-E16-01
E17	Corner (Inverted)	-0.081	✓		MPF-150-E17-01
E18	Party Wall Between Dwellings	0.039	✓		MPF-150-E18-04
E25	Staggered Party Wall Between Dwellings	0.033	✓		MPF-150-E25-04

Ref	Party Wall Junctions	Psi Value	Bespoke	Default	Reference
P1	Ground Floor	0.103	✓		MPW-P1-03
P2	Intermediate Floor Within a Dwelling	0.000		✓	
P3	Intermediate Floor Between Dwellings (Block of Flats)	0.000		✓	
P4	Roof (Insulation at Ceiling Level)	0.101	✓		MPW-P4-01

Please note: For calculated / bespoke psi value details to be used in the SAP Calculations the thermal Junction checklist guidance MUST be implemented on site. Failure to adhere to these standardised junction details will require the use of default PSI values for the junction heat loss which will adversely affect the performance of the dwelling(s) against Part L. If you cannot meet the requirements of the ACDs or the construction changes, please inform us at the earliest stage so compliance can be achieved before the project progresses.

3. EPC Requirements - Photographic Evidence

3.1 Requirements from 15th June 2022

In accordance with Approved Document Part L volume 1 – ([ADLv1 Appendix B, page 79](#)) all On Construction Energy Assessors (OCDEAs) are now required to obtain site photographs as part of the evidence needed to produce a Building Regulations Compliance report and/or Energy Performance Certificate (EPC). **Please start collating this evidence as soon as construction starts.**

B6 – Photographs should be taken for each Dwelling on a development as a record during then construction of a property. All photos should be made available to the energy assessor and the building control body. Photos may be taken by anyone involved in the project.

B7 – for each individual property, a series for photographs is to be taken recording the following typical details:

1. Foundations, substructure, and ground floor, to show thermal continuity and quality of insulation in the following spaces:
 - a. At ground floor perimeter edge insulation
 - b. At external door threshold
 - c. Below external Damp proof course on external walls,
2. External Walls: for each main wall type, to show thermal continuity and quality of insulation in the following spaces:

Ground floor to wall junction

 - d. Structural penetrating elements
3. Roof: for each main roof type, to show thermal continuity and quality of insulation in the following spaces:

Joist / rafter level

 - e. Eaves and gables edges

4. Openings: for each opening type, to show thermal continuity and quality of insulation in the following spaces:

Window position in relation to the cavity closer or insulation line

- f. External door set positioning in relation to cavity closer or insulation line

5. Air tightness: additional photographs for details above where not visible in continuity if insulation image

6. Building Servies: all plant associated with space heating, hot water, ventilation and Low or zero carbon technology equivalent within or on the building to show the following:

Plant / equipment identification labels including make, model and serial number

- g. Primary pipework continuity of insulation

- h. Mechanical ventilation ductwork continuity of insulation for ductwork outside the thermal envelope.

B8 – Images should: be clear and with high enough resolution and quality to allow a qualitative audit of the subject detailed. **Geolocation** must be enabled to confirm the location, date, and time of each image. Each image must include the plot number and detailed reference in accordance with the numbers used in B7. i.e. Plot 1 eaves detail should be Photographs should be taken for each dwelling on a development as a record during

Please note: if you require a template to help you collate this information please contact us and we will be happy to supply it to you.

4. Declaration of Conformity

As the Client/ Developer, I confirm that these dwellings will be built in line with the above construction specification details.

Signed:

Name:

Position on the project:

16th June 2026

Build a Net Zero future

Join us in creating a more
sustainable built environment –
spaces where people and planet can thrive



Let's chat

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