Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Wed 26 Nov 2025 15:00:53

Project Information			
Assessed By	Faye Mitchell	Building Type	House, Detached
OCDEA Registration	EES/023209	Assessment Date	2025-11-26

Dwelling Details			
Assessment Type	As designed	Total Floor Area	203 m^2
Site Reference	BW Penland P2	Plot Reference	Design Stage - PV
Address	Penland Farm P2 Penland Green, Haywards Heath , RH17 5HR		

Client Details	
Name	Simon Davies
Company	Brixter Construction Limited
Address	29B Keymer Road, Hassocks, BN6 8AB

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Electricity	
Target carbon dioxide emission rate	*8.77 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	1.32 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*45.92 kWh_{PE}/m^2*	
Dwelling primary energy	17.93 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.9 kWh/m^2*	
Dwelling fabric energy efficiency	39.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.15	Walls (3) (0.18)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.14	Heatloss Floor Over Garage (0.16)	OK
Roofs	*0.16*	0.13	Roof (2) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.2	Front Door (1.2)	OK
Rooflights	*2.2*	1.2	RL 1-2, North West (1.2)	OK

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	249.1801	0.15
Exposed wall: Walls (2)	18.02	0.15
Exposed wall: Walls (3)	15.308	0.18
Ground floor: Heatloss Floor 1, Heatloss Floor 1	61.97	0.14
Upper floor: Heatloss Floor Over Garage, Heatloss Floor Over Garage	20.31	0.16
Exposed roof: Roof (1)	28.28	0.11
Exposed roof: Roof (2)	40.3716	0.15
Exposed roof: Roof (3)	7.31	0.11
Exposed roof: Roof (4)	6.3132	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Front Door, Solid Door	1.98	South East	N/A	1.2
W1, Window	1.342	South East	0.7	1.2
W2, Window	4.096	South East	0.7	1.2
W3, Window	2.4975	South East	0.7	1.2
W4, Window	2.052	South East	0.7	1.2
W5, Window	2.6325	South East	0.7	1.2
V1-4, Velux	0.5096	South East	0.7	1.2

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
V1-4, Velux	0.5096	South East	0.7	1.2
V1-4, Velux	0.5096	South East	0.7	1.2
V1-4, Velux	0.5096	South East	0.7	1.2
W6, Window	1.0764	North West	0.7	1.2
W7, Glazed Door	9.9408	North West	0.7	1.2
W8, Window	1.0764	North West	0.7	1.2
RL 1-2, Roof Light	0.6084	North West	0.7	1.2
RL 1-2, Roof Light	0.6084	North West	0.7	1.2
W9, Window	1.84	North West	0.7	1.2
W10, Window	1.125	North West	0.7	1.2
W11, Window	1.1125	North West	0.7	1.2
W12-13, Dormer Window	2.106	North West	0.7	1.2
W12-13, Dormer Window	2.106	North West	0.7	1.2
W14, Window	0.696	North East	0.7	1.2
GD 1 , Half Glazed Door	2.3028	North East	N/A	1.2

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part **1**: Thermal bridging calculated from linear thermal transmittances for each junction

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.006 **(!)**	610106
External wall	E3: Sill	Not government-approved scheme	0.019 **(!)**	610109
External wall	E4: Jamb	Not government-approved scheme	0.006 **(!)**	610108
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.093	610076
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.006 **(!)**	FALC4
External wall	E16: Corner (normal)	Not government-approved scheme	0.035 **(!)**	610110
Roof	R1: Head of roof window	Not government-approved scheme	0.113	610438
Roof	R2: Sill of roof window	Not government-approved scheme	0.118	610437
Roof	R3: Jamb of roof window	Not government-approved scheme	0.88	610439
Roof	R11: Upstands or kerbs of rooflights	SAP table default	0.24	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	4.9 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	307.8%
Emitter type	Underfloor
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Mitsubishi Electric Europe B.V.
Model	Ecodan 8.5kW
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.97 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: N/A		
Efficiency		
Manufacturer		
Model		

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	80 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	*N/A*	
Specific fan power	N/A	**N/A**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model		
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	3 kWp
Orientation	South East
Pitch	30°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:

b. Client Declaration
N/A