Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed using Kaizen SAP 10.2 SAP 10 program, 1.0.1

Date: Fri 28 Feb 2025 16:31:16

Project Information			
Assessed By	Scott Binstead	Building Type	House, Detached
OCDEA Registration	KAZN000006	Assessment Date	2025-02-28

Dwelling Details			
Assessment Type	As built	Total Floor Area	85 m^2
Site Reference	001 Orchard Cottage	Plot Reference	001 Orchard Cottage
Address	Orchard Cottage, Pipers End, Hertford, SG14 2PB		

Client Details	
Name	Not Given
Company	Not Given
Address	Not Provided, Not Provided, AL9 5HZ

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	*9.32 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	0.53 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.08 kWh_{PE}/m^2*	
Dwelling primary energy	17.91 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*42.24 kWh/m^2*	
Dwelling fabric energy efficiency	41.82 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*	0.11	Clad (0.11)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.15	Flr - Ground (0.15)	OK
Roofs	*0.16*	0.1	Rf - Flat Roof (0.1)	OK
Windows, doors, and roof windows	*1.6*	1.13	Front (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

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: Clad	81.028	0.11 **(!)**
Ground floor: Flr - Ground	85.293	0.15
Exposed roof: Rf - Flat Roof	85.293	0.1 **(!)**

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 (1)	2.352	North	0.7	1.4
Front, Windows (1)	3.048	North	0.8	1 **(!)**
L Side, Windows (2)	2.34	East	0.8	1 **(!)**
R Side, Windows (3)	1.98	West	0.8	1 **(!)**
Rear, Windows (4)	1.8	South	0.8	1 **(!)**
Rear, Windows (5)	7.2	South	0.7	1.2

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part **1 - Main Dwelling**: 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)	Calculated by person with suitable expertise	0.085	Not Provided

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	SAP table default	0.1	Not Provided
External wall	E3: Sill	SAP table default	0.1	Not Provided
External wall	E5: Ground floor (normal)	SAP table default	0.32	Not Provided
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.057	Not Provided
External wall	E16: Corner (normal)	SAP table default	0.18	Not Provided

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	2.86 m^3/hm^2, Measured value **(!)**	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	264.309269504394%
Emitter type	Radiators
Flow temperature	45°C
System type	HeatPumpsWet
Manufacturer	Vaillant
Model	aroTHERM plus 5kW & AI
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	191 litres
Declared heat loss	1.22 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: Programmer, room thermostat and TRVs	
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	101.25 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	*1.5 W/(l/s)*	
Specific fan power	0.68 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	91%	OK
Manufacturer/Model	Zehnder Group UK Ltd ComfoAir Flex 250	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	1.6 kWp
Orientation	East
Pitch	Horizontal
Overshading	None or very little
Manufacturer	Not Provided
MCS certificate	
Technology type: **Photovoltaic system (2)**	
Peak power	1.6 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	Not Provided
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence	
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name: Scott Binstead	Assessor ID: KAZN000006 Date: 28 Feb 2025
b. Client Declaration	
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: Name: Not Given	Organisation: Not Given Date: