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 14 Feb 2025 09:24:01

Project Information			
Assessed By	Scott Binstead	Building Type	House, Detached
OCDEA Registration	KAZN000006	Assessment Date	2025-02-14

Dwelling Details			
Assessment Type	As designed	Total Floor Area	151 m^2
Site Reference	091 - Poplar	Plot Reference	091 - Poplar
Address	Address Line 1, ..., TN9 2QF		

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	*9.87 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.32 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*51.82 kWh_{PE}/m^2*	
Dwelling primary energy	45.07 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.72 kWh/m^2*	
Dwelling fabric energy efficiency	43.37 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*	0.25	Hi Strenth Brick (0.26)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.12	Flr - Ground (0.12)	OK
Roofs	*0.16*	0.11	Rf - Ins Rafter (0.16)	OK
Windows, doors, and roof windows	*1.6*	1.31	R Side (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: Brick	83.197	0.25
Exposed wall: Hi Strenth Brick	78.515	0.26
Ground floor: Flr - Ground	80.804	0.12
Exposed roof: Rf - Ins Joist	70.5	0.1 **(!)**
Exposed roof: Rf - Ins Rafter	7.669	0.16
Exposed roof: Unisulated roof	0.939	0.16
Exposed roof: joist over bay	1.586	0.11

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)	1.911	South	0.7	1.2
R Side, Door (2)	1.911	East	0.7	1.4
Front, Windows (1)	4.78	South	1.0	1.3
L Side, Windows (2)	0.662	West	1.0	1.3
R Side, Windows (3)	0.756	East	1.0	1.3
Rear, Windows (4)	5.004	North	1.0	1.3
Front, Windows (5)	7.521	South	1.0	1.3
L Side, Windows (6)	4.032	West	1.0	1.3
R Side, Windows (7)	0.72	East	1.0	1.3
Rear, Windows (8)	5.574	North	1.0	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
Rear, Windows (9)	2.526	North	1.0	1.4
L Side, RoofLights (1)	1.313	West	1.0	1.3

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)	Government-approved scheme	0.055	Not Provided
External wall	E4: Jamb	Government-approved scheme	0.017 **(!)**	Not Provided
External wall	E3: Sill	Government-approved scheme	0.013 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Government-approved scheme	0.059	Not Provided
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.003 **(!)**	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.046	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Government-approved scheme	0.013 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.04	Not Provided
External wall	E13: Gable (insulation at rafter level)	Government-approved scheme	0.059	Not Provided
External wall	E16: Corner (normal)	Government-approved scheme	0.046	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.1	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Government-approved scheme	0.15	Not Provided
Roof	R1: Head of roof window	Government-approved scheme	0.049	Not Provided
Roof	R2: Sill of roof window	Government-approved scheme	0.058	Not Provided
Roof	R3: Jamb of roof window	Government-approved scheme	0.049	Not Provided
Roof	R4: Ridge (vaulted ceiling)	Government-approved scheme	0.12	Not Provided
External wall	E2: Other lintels (including other steel lintels)	Government-approved scheme	0.054	0.19
External wall	E4: Jamb	Government-approved scheme	0.016 **(!)**	0.19
External wall	E3: Sill	Government-approved scheme	0.011 **(!)**	0.19
External wall	E16: Corner (normal)	Government-approved scheme	0.051	0.19
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.104	0.19

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 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Electricity

Efficiency	
Emitter type	Radiators
Flow temperature	55°C
System type	HeatPumpsWet
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	250 litres	
Declared heat loss	2.1 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: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.01 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	1%	**N/A**
Manufacturer/Model	0	
Commissioning		

9 Local generation
N/A

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:	Assessor ID: KAZN000006
Name: Scott Binstead	Date: 14 Feb 2025

b. Client Declaration

N/A