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: Thu 03 Oct 2024 23:01:26

Project Information			
Assessed By	BRE Testing	Building Type	House, Detached
OCDEA Registration	KAZN000001	Assessment Date	2013-11-09

Dwelling Details			
Assessment Type	As designed	Total Floor Area	149 m^2
Site Reference	EN1a	Plot Reference	EN-1a-SAP10-dwelling Type 1 - Detached medium size_EPC.xml
Address	--------, --------, BD8 7LL		

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	Mains gas	
Target carbon dioxide emission rate	*9.97 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	13.22 $kgCO_2/m^2$	**FAIL**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*52.26 kWh_{PE}/m^2*	
Dwelling primary energy	79.48 kWh_{PE}/m^2	**FAIL**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.30 kWh/m^2*	
Dwelling fabric energy efficiency	43.15 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 (1) (0.15)	**OK**
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.16	Floor (1) (0.16)	**OK**
Roofs	*0.16*	0.12	Roof (1) (0.12)	**OK**
Windows, doors, and roof windows	*1.6*	1.26	12 (1.5)	**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: Walls (1)	172.23	0.15
Ground floor: Floor (1)	74.3	0.16
Exposed roof: Roof (1)	74.3	0.12

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
12, Doors	1.89	East	N/A	1.5
13, Doors	1.89	East	N/A	1.5
1, Windows (1)	2.16	East	0.7	1.2
2, Windows (1)	2.43	East	0.7	1.2
3, Windows (1)	1.08	East	0.7	1.2
4, Windows (1)	2.16	East	0.7	1.2
5, Windows (1)	2.16	East	0.7	1.2
6, Windows (1)	1.44	East	0.7	1.2
7, Windows (1)	1.26	East	0.7	1.2
8, Windows (1)	2.16	East	0.7	1.2
9, Windows (1)	1.26	East	0.7	1.2
10, Windows (1)	1.89	East	0.7	1.2

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
11, Windows (2)	5.04	East	0.7	1.3
14, Windows (1)	0.63	North	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)	Not government-approved scheme	0.2	Imported
External wall	E3: Sill	Not government-approved scheme	0.038 **(!)**	Imported
External wall	E4: Jamb	Not government-approved scheme	0.038 **(!)**	Imported
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.062	Imported
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.052	Imported
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.041	Imported
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.11	Imported
External wall	E16: Corner (normal)	Not government-approved scheme	0.04	Imported
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.14	Imported

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 - Mains gas	
Efficiency	89.9%
Emitter type	Radiators
Flow temperature	55°C
System type	Gas1998OrLater
Manufacturer	
Model	
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water

Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
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	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	11.2 lm/W	**FAIL**
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	1%	**N/A**
Manufacturer/Model		
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: Name: BRE Testing	Assessor ID: KAZN000001 Date: 03 Oct 2024
b. Client Declaration	
N/A	