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: Tue 25 Feb 2025 11:09:44

Project Information			
Assessed By	Carrie Morris	Building Type	House, Detached
OCDEA Registration	KAZN000005	Assessment Date	2025-02-25

Dwelling Details			
Assessment Type	As designed	Total Floor Area	120 m^2
Site Reference	149 NSS 493 BUT D BR 6	Plot Reference	149 NSS 493 BUT D BR 6
Address	78 Grebe Drive, Rochford, SS4 1YT		

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	*11.00 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.18 $kgCO_2/m^2$	**FAIL**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.56 kWh_{PE}/m^2*	
Dwelling primary energy	58.86 kWh_{PE}/m^2	**FAIL**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.79 kWh/m^2*	
Dwelling fabric energy efficiency	41.78 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*	0.24	Brick (0.24)	**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*	0.1	Joist Kitchen (0.16)	**OK**
Windows, doors, and roof windows	*1.6*	1.29	R Side (1.3)	**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	140.221	0.24
Ground floor: Flr - Ground	63.126	0.12
Exposed roof: Rf - Ins Joist	56.81	0.09 **(!)**
Exposed roof: Joist Kitchen	4.951	0.16
Exposed roof: Flat over Bay	1.672	0.16

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)	2.148	East	0.7	1.2
R Side, Windows (1)	2.623	North	1.0	1.3
Rear, Windows (2)	1.605	West	1.0	1.3
L Side, Windows (3)	6.17	South	1.0	1.3
R Side, Windows (4)	4.914	North	1.0	1.3
Front, Windows (5)	12.461	East	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)	Calculated by person with suitable expertise	0.044	Not Provided
External wall	E4: Jamb	Calculated by person with suitable expertise	0.01 **(!)**	Not Provided
External wall	E3: Sill	Calculated by person with suitable expertise	0.009 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	Not Provided
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.003 **(!)**	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.044	Not Provided
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.129	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.107	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	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%
Emitter type	Radiators
Flow temperature	55°C
System type	Gas1998OrLater
Manufacturer	Ideal
Model	LOGIC COMBI
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
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 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	N/A	**N/A**
Manufacturer/Model	Vent Axia Ltd Lo-Carbon NBR dMEV C 100	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	2.835 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	Not Provided
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: Carrie Morris	Assessor ID: KAZN000005 Date: 25 Feb 2025
b. Client Declaration	
N/A	