

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 09 May 2025 14:17:33

Project Information			
Assessed By	Jonathon Hill	Building Type	House, Detached
OCDEA Registration	EES/020407	Assessment Date	2025-05-09

Dwelling Details			
Assessment Type	As designed	Total Floor Area	119 m ²
Site Reference	104 Berkeley Avenue	Plot Reference	Baseline
Address	104 Berkeley Avenue, Reading, RG1 6HY		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

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	10.93 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.15 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	57.36 kWh _{PE} /m ²		
Dwelling primary energy	43.45 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	44.0 kWh/m ²		
Dwelling fabric energy efficiency	43.9 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.19	Walls (1) (0.19)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.11	Ground Floor (0.11)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.4	Front - Cavity Windows (1.4)	OK
Rooflights	2.2	1.4	Rear - Rooflights, South (1.4)	OK

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))			
Name	Net area [m ²]	U-Value [W/m ² K]	
Exposed wall: Walls (1)	107.77	0.19	
Exposed wall: Walls (2)	14.81	0.17	
Ground floor: Ground Floor, Ground Floor	65.8	0.11	
Exposed roof: Roof (1)	102.4	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 ² K]
Front - Cavity Windows, Windows	2.6	North	0.7	1.4
Front - Dormer Windows, Windows	2.6	North	0.7	1.4
Front - Doors, Doors	1.7	North	N/A	1.4
Rear - Windows, Windows	1.3	South	0.7	1.4
Rear - Rooflights, Rooflights	0.8	South	0.7	1.4
Right Side - WIndows, Windows	8.1	West	0.7	1.4

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	E5: Ground floor (normal)	Not government-approved scheme	0.099	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.002 (!)	
External wall	E16: Corner (normal)	Not government-approved scheme	0.051	
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.015 (!)	
External wall	E2: Other lintels (including other steel lintels)	SAP table default	1	Timber Frame
External wall	E3: Sill	Not government-approved scheme	0.021 (!)	
External wall	E3: Sill	SAP table default	0.1	Timber Frame
External wall	E4: Jamb	Not government-approved scheme	0.016 (!)	
External wall	E4: Jamb	SAP table default	0.1	Timber Frame
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.091	
External wall	E11: Eaves (insulation at rafter level)	Not government-approved scheme	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Not government-approved scheme	0.061	
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	
External wall	E16: Corner (normal)	SAP table default	0.18	Timber Frame

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	5 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	306.0%	
Emitter type	Radiators	
Flow temperature	45°C	
System type	Heat Pump	
Manufacturer	Vaillant Group UK Ltd	
Model	aroTHERM plus 12kW & 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: 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	100 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		
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:	
Name:	Date:	
b. Client Declaration		
N/A		