

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 02 Dec 2024 10:21:40

Project Information			
Assessed By	Paul Goddard	Building Type	House, Detached
OCDEA Registration	EES/005113	Assessment Date	2024-12-02

Dwelling Details			
Assessment Type	As designed	Total Floor Area	158 m ²
Site Reference	78274	Plot Reference	001
Address	Plot 1 Berry Brow, Manchester, M40 1GR		

Client Details	
Name	-
Company	-
Address	-, -, -

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	9.6 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.57 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	50.31 kWh _{PE} /m ²		
Dwelling primary energy	36.93 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	42.3 kWh/m ²		
Dwelling fabric energy efficiency	41.4 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	0.18	Walls (1) (0.18)	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	GF (0.11)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.19	Front (1.2)	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 ² K]	
Exposed wall: Walls (1)	155.89	0.18	
Ground floor: GF, GF	78.77	0.11	
Exposed roof: Roof (1)	78.77	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, Window	11.94	West	1.0	1.2
Rear, Window	5.83	East	1.0	1.2
Front, Door	2.15	West	N/A	1 (!)
Side, Window	2.07	North	1.0	1.2
Rear, French Door	13.27	East	1.0	1.2
Side, French Door	3.36	South	1.0	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	0.026 (!)	Thermally Broken
External wall	E3: Sill	Calculated by person with suitable	0.022 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.074	RCD
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.046	RCD
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.088	RCD
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	RCD

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	232.9%
Emitter type	Radiators
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 7kW & AI 250l
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	236 litres
Declared heat loss	1.41 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	80 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	0.16 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
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		