

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 20 Feb 2023 09:50:28

Project Information			
Assessed By	Harry Davey	Building Type	House, Semi-detached
OCDEA Registration	EES/020345	Assessment Date	2023-02-20

Dwelling Details			
Assessment Type	As designed	Total Floor Area	103 m ²
Site Reference	5450-2	Plot Reference	Be Green
Address	Alford House Plot 2 50-54 Stanhope Road, London, N6 5AL		

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	14.31 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	76.22 kWh _{PE} /m ²		
Dwelling primary energy	44.42 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	46.3 kWh/m ²		
Dwelling fabric energy efficiency	43.1 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	0.16	Walls (1) (0.16)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.11	Heat Loss Floor 1 (0.11)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	0.83	Opening 4 (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 ² K]
Exposed wall: Walls (1)	103.8719	0.16
Party wall: Party Wall (1)	54.38	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	18.54	0.11
Upper floor: Heat Loss Floor 2, Heat Loss Floor 2	23.69	0.11
Exposed roof: Roof (1)	34.99	0.11
Exposed roof: Roof (2)	4.5636	0.13
Exposed roof: Roof (3)	2.12	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 ² K]
Opening 1, Door	2.7	South West	N/A	1 (!)
Opening 2, Window	4.9713	South West	0.7	0.8 (!)
Opening 2, Window	5.1076	South West	0.7	0.8 (!)
Opening 2, Window	5.1076	South West	0.7	0.8 (!)
Opening 3, Window	6.3488	North East	0.7	0.8 (!)
Opening 3, Window	6.3488	North East	0.7	0.8 (!)
Opening 3, Window	6.5472	North East	0.7	0.8 (!)
Opening 3, Window	6.5472	North East	0.7	0.8 (!)
Opening 4, Rooflight	1.4664	South West	0.7	1.3
Opening 5, Window	0.9996	South East	0.7	0.8 (!)

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.05	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.05	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.16	
External wall	E20: Exposed floor (normal)	Calculated by person with suitable expertise	0.32	
External wall	E21: Exposed floor (inverted)	Calculated by person with suitable expertise	0.32	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.24	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.04	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.09	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.08	
Party wall	P2: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
Party wall	P7: Exposed floor (normal)	Calculated by person with suitable expertise	0.16	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.08	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.06	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.08	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.12	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.06	

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	3.5 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	272.2%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Mitsubishi Electric Europe B.V.
Model	Ecodan 8.5 kW
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	1.8 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: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	1.5 W/(l/s)	
Specific fan power	0.65 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	89%	OK
Manufacturer/Model	MRXBOXAB-ECO3, MRXBOXAB-ECO3B	
Commissioning		

9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	0.5 kWp	
Orientation	Horizontal	
Pitch	Horizontal	
Overshading	None or very little	
Manufacturer		
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:	Assessor ID: Date:
b. Client Declaration	
N/A	