

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 01 Aug 2025 08:42:35

Project Information			
Assessed By	Harry Davey	Building Type	House, Detached
OCDEA Registration	EES/020345	Assessment Date	2025-08-01

Dwelling Details			
Assessment Type	As designed	Total Floor Area	177 m ²
Site Reference	9322-1	Plot Reference	00001
Address	6 Highfields Plot 1 Brighton Road, Warninglid		

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	9.14 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.71 kgCO ₂ /m ²	OK	
1b Target primary energy rate and dwelling primary energy			
Target primary energy	48.2 kWh _{PE} /m ²		
Dwelling primary energy	38.55 kWh _{PE} /m ²	OK	
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	43.1 kWh/m ²		
Dwelling fabric energy efficiency	42.2 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	0.1	Heatloss Floor 1 (0.1)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.21	Opening (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)	181.196	0.18
Ground floor: Heatloss Floor 1, Heatloss Floor 1	96.83	0.1 (!)
Exposed roof: Roof (1)	80.4	0.11
Exposed roof: Roof (2)	13.55	0.13

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, HGD	5.04	North East	N/A	1.2
Opening, Window	2.66	North East	0.7	1.2
Opening, Window	2.66	North East	0.7	1.2
Opening, Window	1.488	North East	0.7	1.2
Opening, Window	1.488	North East	0.7	1.2
Opening, Window	1.488	North East	0.7	1.2
Opening, Window	1.44	South West	0.7	1.2
Opening, Window	1.44	South West	0.7	1.2
Opening, Window	1.44	South West	0.7	1.2
Opening, Window	1.44	South West	0.7	1.2
Opening, Window	8.4	South West	0.7	1.2
Opening, rooflight	0.96	South West	0.7	1.3
Opening, rooflight	0.96	South West	0.7	1.3

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Opening, rooflight	0.96	South West	0.7	1.3
Opening, Window	0.72	South East	0.7	1.2
Opening, Window	0.72	South East	0.7	1.2
Opening, Window	1.89	South East	0.7	1.2
Opening, Window	0.72	North West	0.7	1.2
Opening, Window	0.72	North West	0.7	1.2
Opening, Window	1.89	North West	0.7	1.2

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	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	
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	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.16	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.08	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
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	

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	296.3%
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	300 litres	
Declared heat loss	2.1 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: 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		