

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 12 Jun 2025 15:49:07

Project Information			
Assessed By	Natalie Wheeler	Building Type	House, Detached
OCDEA Registration	EES/027446	Assessment Date	2025-06-12

Dwelling Details			
Assessment Type	As designed	Total Floor Area	204 m ²
Site Reference	Venton	Plot Reference	Planning
Address	Land west of Venton New dwelling Green Acres, Lilley, LU2 8LS		

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	8.61 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.07 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	45.49 kWh _{PE} /m ²		
Dwelling primary energy	31.58 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	43.0 kWh/m ²		
Dwelling fabric energy efficiency	41.6 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	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.13	Ground floor (0.13)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.38	Opening (1.4)	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)	184.789	0.16
Exposed wall: Walls (2)	1.5	0.16
Ground floor: Ground floor , Ground floor	108.98	0.13
Exposed roof: Roof (1)	14	0.11
Exposed roof: Roof (2)	14.4	0.13
Exposed roof: Roof (3)	80.58	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, Solid door	2.1	South West	N/A	1 (!)
Opening, Glazing	0.54	South West	0.7	1.4
Opening, Glazing	0.54	South West	0.7	1.4
Opening, Glazing	2.88	South West	0.7	1.4
Opening, Glazing	2.88	South West	0.7	1.4
Opening, Glazing	1.44	South West	0.7	1.4
Opening, Glazing	1.44	South West	0.7	1.4
Opening, Glazing	2.16	South West	0.7	1.4
Opening, Glazing	2.16	South West	0.7	1.4
Opening, Glazing	1.44	North West	0.7	1.4
Opening, Glazing	1	North West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Opening, Half glazed	1.89	North East	N/A	1.2
Opening, Glazing	8.19	North East	0.7	1.4
Opening, Glazing	6.3	North East	0.7	1.4
Opening, Glazing	2.88	North East	0.7	1.4
Opening, Glazing	2.16	North East	0.7	1.4
Opening, Glazing	2.16	North East	0.7	1.4
Opening, Glazing	3.6	North East	0.7	1.4
Opening, Glazing	1.638	South East	0.7	1.4
Opening, Glazing	1.638	South East	0.7	1.4
Opening, Glazing	3.045	South East	0.7	1.4
Opening, Glazing	1.89	South East	0.7	1.4
Opening, Glazing	1.89	South East	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	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.028 (!)	
External wall	E3: Sill	Not government-approved scheme	0.024 (!)	
External wall	E4: Jamb	Not government-approved scheme	0.019 (!)	
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.041	
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0 (!)	
External wall	E16: Corner (normal)	Not government-approved scheme	0.037 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.079	
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.051	
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.029 (!)	
External wall	E13: Gable (insulation at rafter level)	Not government-approved scheme	0.028 (!)	
External wall	E11: Eaves (insulation at rafter level)	Not government-approved scheme	0.017 (!)	

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	290.3%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Mitsubishi Electric Europe B.V.
Model	PUZ-WZ80VAA and EHPT20X-MEHEW
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: N/A		
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: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
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		