

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 10 Jun 2025 15:40:09

Project Information			
Assessed By	Dhiraj Karsan	Building Type	House, Detached
OCDEA Registration	EES/019966	Assessment Date	2025-06-10

Dwelling Details			
Assessment Type	As built	Total Floor Area	108 m ²
Site Reference	101 Oxford	Plot Reference	r/o 101 Oxford
Address	R/O 101 Oxford Road, RG1 7UD		

Client Details	
Name	Clearstream
Company	Clearstream Projects
Address	Unit 70, 4 Spring Bridge Road, London, W5 2AA

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	11.88 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.28 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	62.23 kWh _{PE} /m ²		
Dwelling primary energy	44.66 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	41.4 kWh/m ²		
Dwelling fabric energy efficiency	37.0 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	0.17	Walls (1) (0.17)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Heat Loss Floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.22	E Door (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)	125.24	0.17
Sheltered wall: Walls (2)	17.3	0.17
Ground floor: Heat Loss Floor, Heat Loss Floor	38.8	0.12
Exposed roof: Roof (1)	17.7	0.1 (!)
Exposed roof: Roof (2)	28.32	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]
E Door, Door	2.31	East	N/A	1.4
E Windows, Windows	1.5	East	0.7	1.2
E Windows, Windows	1.5	East	0.7	1.2
E Windows, Windows	1.5	East	0.7	1.2
E Windows, Windows	1.5	East	0.7	1.2
E Windows, Windows	1.4	East	0.7	1.2
E Windows, Windows	0.81	East	0.7	1.2
W Windows, Windows	1.3	West	0.7	1.2
W Windows, Windows	1.3	West	0.7	1.2
W Windows, Windows	0.54	West	0.7	1.2
W Windows, Windows	0.81	West	0.7	1.2
W Roof Window, Roof Windows	0.48	West	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
N Windows, Windows	4.18	North	0.7	1.2
N Windows, Windows	4.18	North	0.7	1.2
N Windows, Windows	1.43	North	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	0.023 (!)	
External wall	E3: Sill	Calculated by person with suitable expertise	0.024 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.019 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.022 (!)	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.037 (!)	
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	

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	4.83 m ³ /hm ² , Measured value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Heat pump with radiators or underfloor heating - Electricity

Efficiency	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	200 litres
Declared heat loss	1.76 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		
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.		Photographic evidence not present
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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.		
Signed: D. Karsan	Assessor ID: m078-0001	
Name: Dhiraj Karsan	Date: 10/06/25	
b. Client Declaration		
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.		
Signed:	Organisation:	
Name:	Date:	