

Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 04 Sep 2024 09:46:39

Project Information			
Assessed By	James Turner	Building Type	House, End-terrace
OCDEA Registration	EES/003630	Assessment Date	2024-09-04

Dwelling Details			
Assessment Type	As designed	Total Floor Area	103 m ²
Site Reference	7358-0001-GF-80MP	Plot Reference	Proposed
Address	Proposed dwelling adjacent 80 Mount Pleasant, Reading, RG1 2DT		

Client Details	
Name	Greg Farrell
Company	Greg Farrell
Address	43 Wendover Way, Tilehurst, Reading, RG30 4RU

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	12.53 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.07 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	66.1 kWh _{PE} /m ²		
Dwelling primary energy	46.28 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	40.2 kWh/m ²		
Dwelling fabric energy efficiency	39.0 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	0.18	Walls (1) (0.21)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Basement floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.14)	OK
Windows, doors, and roof windows	1.6	1.29	Opening 1 (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)	23.16	0.21
Exposed wall: Walls (2)	6.2594	0.12 (!)
Exposed wall: Walls (3)	82.85925	0.18
Exposed wall: Walls (4)	11.88	0.17
Party wall: Party Wall (1)	14.58	0 (!)
Party wall: Party Wall (2)	35.85	0 (!)
Basement floor: Basement floor, Basement floor	27.79	0.12
Ground floor: Kitchen floor, Kitchen floor	14.23	0.12
Exposed roof: Roof (1)	30.36	0.11
Exposed roof: Roof (2)	15.073	0.14

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, Entrance door	1.911	East	N/A	1.4
Opening 2, Glazed door	4.746	West	0.7	1.4
Opening 3, Windows	1.4976	West	0.7	1.2
Opening 3, Windows	0.822	West	0.7	1.2
Opening 4, Windows	1.5912	East	0.7	1.2
Opening 4, Windows	1.5912	East	0.7	1.2
Opening 5, Windows	1.19175	South	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Opening 6, Windows	1.4976	East	0.7	1.2
Opening 7, Windows	0.483	West	0.7	1.2
Opening 8, Roof lights	0.429	South	0.7	1.3
Opening 8, Roof lights	0.429	South	0.7	1.3
Opening 8, Roof lights	0.429	South	0.7	1.3

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	IG Hi Therm
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	MHF-100-E3-01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	MHF-100-E4-01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	MHF-100-E5-12
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	MHF-100-E6-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.041	MHF-100-E16-01
External wall	E18: Party wall between dwellings	SAP table default	0.24	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.061	U1-Gen-R1
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.06	U1-Gen-R2
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.056	U1-gen-R3
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	MHF-100-E5-04
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.059	MHF-100-E10-01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.043	MHF-100-E12-01
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	MHF-100-E11-01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.042	MHF-100-E13-01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	MPW-P1-12
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.043	MHF-100-E18-02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	MPW-P4-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.076	MHF-100-E17-01
Roof	R6: Flat ceiling	SAP table default	0.12	
Roof	R10: All other roof or room-in-roof junctions	SAP table default	0.32	

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	5.01 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	170.0%	
Emitter type	Both radiators and underfloor	
Flow temperature	45°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	180 litres	
Declared heat loss	1.4 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		
Technology type: Photovoltaic system (1)		
Peak power	2 kWp	
Orientation	West	
Pitch	45°	
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:

Assessor ID:

Name:

Date:

b. Client Declaration

N/A