

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 24 Feb 2023 13:22:46

Project Information			
Assessed By	Malcolm Lisle	Building Type	House, Mid-terrace
OCDEA Registration	EES/007070	Assessment Date	2023-02-24

Dwelling Details			
Assessment Type	As designed	Total Floor Area	78 m ²
Site Reference	P22691(5) Mount P	Plot Reference	P22691(5)
Address	40-48 New House 5 Mount Pleasant, Reading, RG1 2TF		

Client Details	
Name	Jay Zaman
Company	Jay Zaman
Address	40-48 Mount Pleasant, Reading, RG1 2TF

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	11.95 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.92 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	62.56 kWh _{PE} /m ²		
Dwelling primary energy	41.34 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	35.6 kWh/m ²		
Dwelling fabric energy efficiency	34.8 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	0.15	Walls (1) (0.15)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.1	Ground Floor (0.1)	OK
Roofs	0.16	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.28	Rooflights (1.7)	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)	42.31	0.15
Party wall: Party Wall (1)	108.24	0 (!)
Ground floor: Ground Floor, Ground Floor	29.56	0.1 (!)
Exposed roof: Roof (1)	19.12	0.15
Exposed roof: Roof (2)	13.32	0.15

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]
Windows, Windows/Doors	3.16	North	0.7	1.2
Windows, Windows/Doors	6.5	South	0.7	1.2
Glazed Doors, Windows/Doors	4.32	North	0.7	1.2
Glazed Doors, Windows/Doors	6.39	South	0.7	1.2
Rooflights, Rooflights	4.06	East	0.7	1.7

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	E1: Steel lintel with perforated steel base plate	Calculated by person with suitable expertise	0.058	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E1: Steel lintel with perforated steel base plate	Calculated by person with suitable expertise	0.058	
External wall	E3: Sill	Calculated by person with suitable expertise	0.045	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.05	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.055	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.069	
External wall	E15: Flat roof with parapet	SAP table default	0.3	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.037 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.049	
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	0.077	
Party wall	P5: Roof (insulation at rafter level)	SAP table default	0.48	
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	
Roof	R4: Ridge (vaulted ceiling)	SAP table default	0.12	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.051	

3 Air permeability (better than typically expected values are flagged with a subsequent (!))

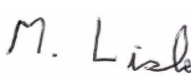
Maximum permitted air permeability at 50Pa	8 m ³ /hm ²	
Dwelling air permeability at 50Pa	4 m ³ /hm ² , Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	350.3%	
Emitter type	Underfloor	
Flow temperature	35°C	
System type	Heat Pump	
Manufacturer	Mitsubishi Electric Europe B.V.	
Model	Ecodan 6.0 kW	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water

Cylinder/store - type: Cylinder		
Capacity	150 litres	
Declared heat loss	1.86 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	91.6666666666667 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: P736-0001	
Name: Malcolm Lisle	Date: 24 th February 2023	
b. Client Declaration		
N/A		