Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 22 Apr 2025 08:38:54

Project Information			
Assessed By	Mitchell Bennellick	Building Type	House, Detached
OCDEA Registration	EES/008485	Assessment Date	2025-04-22

Dwelling Details			
Assessment Type	As designed	Total Floor Area	93 m^2
Site Reference	4907-P635-7667-Coppice_Det	Plot Reference	Plot XX
Address	Coppice Detached (AS) Plot XX		

Client Details	
Name	Wain Group
Company	Wain Homes
Address	Fontwell House, Warrington, WA3 6BX

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	*11.23 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.53 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.69 kWh_{PE}/m^2*	
Dwelling primary energy	36.95 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.7 kWh/m^2*	
Dwelling fabric energy efficiency	36.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**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*	0.11	Jetfloor 150/150 Grey (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.19	Front Windows (1.2)	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^2K]**
Exposed wall: Walls (1)	124.691175	0.18
Ground floor: Jetfloor 150/150 Grey, Jetfloor 150/150 Grey	46.48	0.11
Exposed roof: Roof (1)	46.48	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Front Door, Front Door	2.1252	South	N/A	1.1 **(!)**
Front Windows, Windows	0.924	South	1.0	1.2
Front Windows, Windows	2.12625	South	1.0	1.2
Front Windows, Windows	1.771875	South	1.0	1.2
Front Windows, Windows	0.70875	South	1.0	1.2
Rear Windows, Windows	0.70875	North	1.0	1.2
Rear Windows, Windows	1.0125	North	1.0	1.2
Rear Windows, Windows	1.39275	North	1.0	1.2
Rear French, French Doors	3.78	North	1.0	1.2
LHS Windows, Windows	0.70875	West	1.0	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	0.067	E02 - Hi-Therm
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.067	E02 - Hi-Therm Entrance Door
External wall	E1: Steel lintel with perforated steel base plate	Calculated by person with suitable expertise	0.177	E02 - Standard @ Eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	E03 - EW135-SL002
External wall	E4: Jamb	Calculated by person with suitable expertise	0.041	E04 - Entrance Door
External wall	E4: Jamb	Calculated by person with suitable expertise	0.041	E04 - EW135-RV002
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.052	E05 - Jetfloor Per
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.045	E05 - Jetfloor Par
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 **(!)**	E06 - mff-150-e6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.053	E10 - mff-150-e10-01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	E12 - WH-E12s-EFF2021
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.041	E16 - mff-150-e16-01

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	4.5 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	262.8%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Ideal Boilers
Model	Logic Air 4kW
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	1.18 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: Programmer, room thermostat and TRVs	
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	82 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.09 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
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: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	