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 08:38:58

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

Dwelling Details			
Assessment Type	As designed	Total Floor Area	120 m^2
Site Reference	4907-P635-7667-Oakrise_End	Plot Reference	Plot XX
Address	Oakrise End (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	*10.31 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.9 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.01 kWh_{PE}/m^2*	
Dwelling primary energy	30.34 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.2 kWh/m^2*	
Dwelling fabric energy efficiency	34.1 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 (3) (0.25)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor 150/150 Grey (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.26)	OK
Windows, doors, and roof windows	*1.6*	1.2	Rear Rooflight (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^2K]**
Exposed wall: Walls (1)	93.128475	0.18
Exposed wall: Walls (2)	19.91	0.2
Exposed wall: Walls (3)	2.948	0.25
Exposed wall: Walls (4)	11.99	0.12 **(!)**
Party wall: Party Wall (1)	44.53	0 **(!)**
Party wall: Party Wall (2)	19.91	0 **(!)**
Ground floor: Jetfloor 150/150 Grey, Jetfloor 150/150 Grey	42.6	0.11
Exposed roof: Roof (1)	23.91	0.09 **(!)**
Exposed roof: Roof (2)	12.5576	0.16
Exposed roof: Roof (3)	7.73	0.12
Exposed roof: Roof (4)	1.45	0.26

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	2.1273	South	N/A	1.1 **(!)**
Front Windows, Windows	1.4856	South	1.0	1.2
Front Windows, Windows	1.39275	South	1.0	1.2
Front Windows, Windows	0.759375	South	1.0	1.2
LHS Windows, Windows	0.4725	West	1.0	1.2

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
Rear French, French Doors	3.78	North	1.0	1.2
Rear Windows, Windows	0.70875	North	1.0	1.2
Rear Windows, Windows	1.39275	North	1.0	1.2
Rear Windows, Windows	1.0125	North	1.0	1.2
Front Dormer, Windows	1.452	South	1.0	1.2
Rear Rooflight, Rooflights (1.30u)	0.4524	North	0.7	1.7

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	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	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.063	E11 - SMRF-E11-EFF150AAC016
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	E12 - SMRF-E12-ETF20
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.041	E16 - mff-150-e16-01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.058	P01 - Jetfloor EWM28
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.038 **(!)**	E18 - mff-150-e18-04
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	P02 - Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.049	P04 - SMRF-P04-PTF01.09
External wall	E6: Intermediate floor within a dwelling	SAP table default	0.14	E06 - Smartroof (0.20)
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	E13 - SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	P05 - SMRF-P05-016
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	R01 - SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	R02 - SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.041	R03 - SMRF-R03-016
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.013 **(!)**	R01 - IG-R01-APEX
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.023 **(!)**	R02 - IG-R02-SMRF016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.032 **(!)**	R03 - IG-R03-DORMER
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.061	E16 - IG-E16-DORMER Rev 1

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	R06 - SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.039 **(!)**	R07 - IG-R07bAPEX-SMRF016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.005 **(!)**	R07 - IG-R07a-SMRF016 Rev 1
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.027 **(!)**	R09 - IG-R09-APEXEAVE Rev 1
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.029 **(!)**	R09 - IG-R09-APEXGABLE
Roof	R4: Ridge (vaulted ceiling)	Calculated by person with suitable expertise	0.002 **(!)**	R04 - IG-R04-APEX

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	298.6%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Ideal Boilers
Model	Logic Air 5kW
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	210 litres
Declared heat loss	1.33 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	0.11 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	