

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 16 Jun 2023 09:40:33

Project Information			
Assessed By	Peter Loveday	Building Type	House, Detached
OCDEA Registration	EES/022686	Assessment Date	2023-06-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	298 m ²
Site Reference	STA-06-23-01	Plot Reference	STA-06-23-01
Address	Plot 1 Green Lane, Yarpole, HR6 0BG		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

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	6.21 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	2.98 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	33.08 kWh _{PE} /m ²	
Dwelling primary energy	30.43 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	34.4 kWh/m ²	
Dwelling fabric energy efficiency	32.9 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	0.16	Walls (1) (0.16)	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	Upper floor over porch (0.26)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.18	S 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 ² K]
Exposed wall: Walls (1)	89.7362	0.16
Exposed wall: Walls (2)	58.749	0.16
Ground floor: Ground floor, Ground floor	146.17	0.12
Upper floor: Upper floor over porch, Upper floor over porch	5.28	0.26
Exposed roof: Roof (1)	151.44	0.1 (!)

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]
S Windows, Windows	6.3	South	0.7	1.2
S Windows, Windows	2.3895	South	0.7	1.2
S Windows, Windows	0.891	South	0.7	1.2
S Windows, Windows	0.891	South	0.7	1.2
S Windows, Windows	3.15	South	0.7	1.2
S Windows, Windows	1.8585	South	0.7	1.2
S Windows, Windows	1.8585	South	0.7	1.2
N Doors, Glazed doors	1.911	North	N/A	1 (!)
N Doors, Solid doors	2.1483	North	N/A	1 (!)
N Windows, Windows	1.26	North	0.7	1.2
N Windows, Windows	1.26	North	0.7	1.2
N Windows, Windows	1.26	North	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
N Windows, Windows	1.26	North	0.7	1.2
N Windows, Windows	1.26	North	0.7	1.2
N Windows, Windows	1.62	North	0.7	1.2
N Windows, Windows	2.3895	North	0.7	1.2
N Windows, Windows	1.26	North	0.7	1.2
E Windows, Windows	1.26	East	0.7	1.2
E Windows, Windows	0.6615	East	0.7	1.2
E Windows, Windows	1.62	East	0.7	1.2
S Windows, Windows	2.124	South	0.7	1.2
S Windows, Windows	2.124	South	0.7	1.2
S Windows, Windows	2.124	South	0.7	1.2
S Windows, Windows	2.124	South	0.7	1.2
S Windows, Windows	1.44	South	0.7	1.2

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)	Not government-approved scheme	0.118	Frametech
External wall	E3: Sill	Not government-approved scheme	0.046	Frametech
External wall	E4: Jamb	Not government-approved scheme	0.051	Frametech
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.089	Frametech
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.053	Frametech
External wall	E16: Corner (normal)	Not government-approved scheme	0.059	Frametech
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.07	Frametech
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.053	Frametech
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.006 (!)	Frametech
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.137	Frametech
External wall	E3: Sill	Not government-approved scheme	0.056	Frametech
External wall	E4: Jamb	Not government-approved scheme	0.074	Frametech
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.092	Frametech
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.075	Frametech
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.068	Frametech
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.062	Frametech
External wall	E16: Corner (normal)	Not government-approved scheme	0.069	Frametech
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.007 (!)	Frametech

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 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	Underfloor	
Flow temperature		
System type	Air source heat pump	
Manufacturer		
Model		
Commissioning		
Secondary heating system: Closed room heater		
Fuel	Wood logs	
Efficiency	65.0%	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	300 litres	
Declared heat loss	N/A	
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		
<i>Minimum permitted light source efficacy</i>	75 lm/W	
Lowest light source efficacy	80 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: N/A		
<i>Maximum permitted specific fan power</i>	N/A	
Specific fan power	N/A	N/A
<i>Minimum permitted heat recovery efficiency</i>	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	4 kWp	
Orientation	South	
Pitch	45°	
Overshading	Modest	
Manufacturer	TBA	
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