

Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 05 Apr 2023 08:49:06

Project Information			
Assessed By	Damian Selim	Building Type	House, Detached
OCDEA Registration	EES/022740	Assessment Date	2023-04-05

Dwelling Details			
Assessment Type	As designed	Total Floor Area	241 m ²
Site Reference	Winkfield Road 12	Plot Reference	12
Address	12 Winkfield Road, Slough, SL4 4BG		

Client Details	
Name	Mr Parmjit Grewal
Company	Mr Parmjit Grewal
Address	12 Winkfield Road, Windsor, SL4 4BG

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	7.01 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	-0.05 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	36.94 kWh _{PE} /m ²		
Dwelling primary energy	12.78 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	36.9 kWh/m ²		
Dwelling fabric energy efficiency	35.3 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 (2) (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	0.13	Over Garage (0.22)	OK
Roofs	0.16	0.13	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.18	WC (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)	68.9	0.16
Exposed wall: Walls (2)	18.96	0.18
Exposed wall: Walls (3)	4.62	0.18
Exposed wall: Walls (4)	43.5	0.11 (!)
Ground floor: Ground Floor, Ground Floor	102.58	0.12
Upper floor: Over Garage, Over Garage	16.67	0.22
Exposed roof: Roof (1)	4.5	0.15
Exposed roof: Roof (2)	64.585	0.15
Exposed roof: Roof (3)	46.62	0.11
Exposed roof: Roof (4)	1.45	0.11

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]
WC, Window	0.5775	South East	0.7	1.2
Front Door, Half Glazed Door	1.995	South East	N/A	1 (!)
Front, Window	1.05	South East	0.7	1.2
Reception, Window	4.8	South East	0.7	1.2
Bed, Window	2.76	South East	0.7	1.2
Landing, Window	1.38	South East	0.7	1.2
Bed, Window	2.1	South East	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
WC, Window	0.4725	North East	0.7	1.2
Reception, Window	1.035	North East	0.7	1.2
Reception Doors, Glazed Door	3.52	North West	0.7	1.2
Dining Doors, Glazed Door	14.74	North West	0.7	1.2
Beds, Window	2.1	North West	0.7	1.2
Beds, Window	2.1	North West	0.7	1.2
Bath, Window	1.38	North West	0.7	1.2
Games, Window	2.1	North West	0.7	1.2
Kitchen Velux, Velux	1.575	North West	0.7	1.2
Kitchen Velux, Velux	1.575	North West	0.7	1.2
Kitchen Velux, Velux	1.575	North West	0.7	1.2
Study, Window	1.44	South West	0.7	1.2
Garage Door, Solid Door	1.68	South West	N/A	0.8 (!)
Bath, Window	1.38	South West	0.7	1.2
Games Velux, Velux	1.89	South West	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	0.006 (!)	
External wall	E3: Sill	Not government-approved scheme	0.003 (!)	
External wall	E4: Jamb	Not government-approved scheme	0.004 (!)	
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	
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.063	
External wall	E20: Exposed floor (normal)	SAP table default	0.32	
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0.002 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.053	
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.064	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
External wall	E14: Flat roof	Not government-approved scheme	0.048	
External wall	E16: Corner (normal)	Not government-approved scheme	0.043	
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.071	
Roof	R4: Ridge (vaulted ceiling)	SAP table default	0.12	

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	239.6%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Grant Engineering (UK) Ltd
Model	AERONA3
Commissioning	

Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	300 litres	
Declared heat loss	2.2 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		
<i>Minimum permitted light source efficacy</i>	75 lm/W	
Lowest light source efficacy	75 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 West	
Pitch	30°	
Overshading	1 (overshading factor calculated according to MCS)	
Manufacturer		
MCS certificate		
Technology type: Photovoltaic system (2)		
Peak power	4 kWp	
Orientation	South East	
Pitch	30°	
Overshading	1 (overshading factor calculated according to MCS)	
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