

Building Regulations England Part L (BREL) Compliance Report

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

Date: Sun 14 Dec 2025 09:54:31

Project Information			
Assessed By	Steven Leahy	Building Type	House, Detached
OCDEA Registration	EES/004184	Assessment Date	2025-12-14

Dwelling Details			
Assessment Type	As designed	Total Floor Area	320 m ²
Site Reference	Finchampstead Rd - Plot 4	Plot Reference	Plot 4
Address	58 Plot 4 Finchampstead Road, Wokingham, RG40 2NS		

Client Details	
Name	Harding Rose Architects
Company	Harding Rose Architects Limited
Address	Sterling House, Stroudley Road, Basingstoke, RG24 8UG

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	7.34 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.29 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	39.22 kWh _{PE} /m ²		
Dwelling primary energy	34.06 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	40.1 kWh/m ²		
Dwelling fabric energy efficiency	38.6 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	0.17	Walls (1) (0.17)	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	Above Garage (0.18)	OK
Roofs	0.16	0.14	Roof (1) (0.14)	OK
Windows, doors, and roof windows	1.6	1.4	Entrance Door (1.4)	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)	205.02	0.17
Exposed wall: Walls (2)	88.98	0.17
Ground floor: Ground Floor, Ground Floor	122.42	0.12
Upper floor: Above Garage, Above Garage	30.33	0.18
Exposed roof: Roof (1)	49.32	0.14
Exposed roof: Roof (2)	51.17	0.14
Exposed roof: Roof (3)	87.69	0.14
Exposed roof: Roof (4)	7.2	0.14

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]
Entrance Door, Entrance Door	3.78	North	N/A	1.4
North Roof Window, Roof Windows	0.48	North	0.7	1.4
NE Bays, Windows	0.66	North East	0.7	1.4
NE Bays, Windows	0.78	North East	0.7	1.4
NW Bays, Windows	0.66	North West	0.7	1.4
NW Bays, Windows	0.78	North West	0.7	1.4
South Windows, Windows	2.16	South	0.7	1.4
South Windows, Windows	2.16	South	0.7	1.4
South Windows, Windows	2.16	South	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
South Windows, Windows	5.88	South	0.7	1.4
South Windows, Windows	5.88	South	0.7	1.4
South Windows, Windows	5.88	South	0.7	1.4
South Dormers, Windows	1.2	South	0.7	1.4
South Dormers, Windows	1.2	South	0.7	1.4
House to Garage Door, House to Garage Door	1.89	North	N/A	1.4
East Windows, Windows	0.66	East	0.7	1.4
East Windows, Windows	0.66	East	0.7	1.4
East Windows, Windows	1.2	East	0.7	1.4
East Windows, Windows	0.6	East	0.7	1.4
East Roof Windows, Roof Windows	0.48	East	0.7	1.4
East Roof Windows, Roof Windows	0.48	East	0.7	1.4
East Dormer, Windows	1.2	East	0.7	1.4
West Windows, Windows	0.66	West	0.7	1.4
West Windows, Windows	0.78	West	0.7	1.4
West Roof Window, Roof Windows	0.48	West	0.7	1.4
West Dormer, Windows	1.2	West	0.7	1.4

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	0.038 (!)	Knauf E2A
External wall	E4: Jamb	Calculated by person with suitable expertise	0.016 (!)	Knauf E4
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.039 (!)	Knauf E16
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.061	Knauf E10
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.01 (!)	Knauf E11
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.091	Knauf E17
External wall	E14: Flat roof	SAP table default	0.16	Default
External wall	E3: Sill	Calculated by person with suitable expertise	0.021 (!)	Knauf E3
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.037 (!)	Knauf E5A
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.003 (!)	Knauf E6
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	

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	296.5%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Samsung Electronics Air Conditioner Europe B.V.
Model	AE080RXYDEG
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	250 litres	
Declared heat loss	2.08 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	80 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:	S Leahy	Assessor ID: EES/004184
Name:	Steve Leahy	Date: 14/12/2025
b. Client Declaration		
N/A		