

# Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 05 Sep 2025 08:23:57

Project Information			
Assessed By	Alexander Pelling	Building Type	House, Detached
OCDEA Registration	EES/022570	Assessment Date	2025-09-05

Dwelling Details			
Assessment Type	As designed	Total Floor Area	221 m <sup>2</sup>
Site Reference	CLARFELT	Plot Reference	As-Designed
Address			Rear of Haynes Partridge Green, Horsham, RH13 8JF

Client Details			
Name	Project Manager		
Company	Scandia-Hus Ltd.		
Address	Oakleigh House, Scandia-Hus Business Park, Felcourt Road, Felcourt, East Grinstead, RH19 2LP		

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	8.16 kgCO <sub>2</sub> /m <sup>2</sup>		
Dwelling carbon dioxide emission rate	2.89 kgCO <sub>2</sub> /m <sup>2</sup>		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	43.48 kWh <sub>PE</sub> /m <sup>2</sup>		
Dwelling primary energy	32.94 kWh <sub>PE</sub> /m <sup>2</sup>		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	45.3 kWh/m <sup>2</sup>		
Dwelling fabric energy efficiency	43.1 kWh/m <sup>2</sup>		OK

2a Fabric U-values				
Element	Maximum permitted average U-value [W/m <sup>2</sup> K]	Dwelling average U-value [W/m <sup>2</sup> K]	Element with highest individual U-value	
External walls	0.26	0.16	Walls (5) (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	Ground Floor (0.11)	OK
Roofs	0.16	0.13	Roof (2) (0.14)	OK
Windows, doors, and roof windows	1.6	1	Opening 1 (1)	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 <sup>2</sup> ]	U-value [W/m <sup>2</sup> K]	
Exposed wall: Walls (1)	23.76	0.15	
Exposed wall: Walls (2)	107	0.17	
Exposed wall: Walls (3)	13.44	0.15	
Sheltered wall: Walls (4)	32.57	0.13 (!)	
Exposed wall: Walls (5)	1.67	0.18	
Ground floor: Ground Floor, Ground Floor	130.67	0.11	
Exposed roof: Roof (1)	23.87	0.13	
Exposed roof: Roof (2)	8.47	0.14	
Exposed roof: Roof (3)	75.1596	0.14	
Exposed roof: Roof (4)	34.59	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-value [W/m <sup>2</sup> K]
Opening 1, Windows	0.84	West	0.7	1 (!)
Opening 2, Windows	2.4	West	0.7	1 (!)
Opening 3, Windows	0.84	West	0.7	1 (!)
Opening 4, Solid Doors	2.1	West	N/A	1 (!)
Opening 5, Windows	0.84	West	0.7	1 (!)
Opening 6, Windows	3.15	West	0.7	1 (!)

Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Opening 7, Windows	7.56	East	0.7	1 (!)
Opening 8, Windows	7.56	East	0.7	1 (!)
Opening 9, Windows	0.72	South	0.7	1 (!)
Opening 10, Windows	0.72	South	0.7	1 (!)
Opening 11, Windows	7.56	East	0.7	1 (!)
Opening 12, Windows	5.25	North	0.7	1 (!)
Opening 13, Windows	2.4	North	0.7	1 (!)
Opening 14, Windows	0.72	North	0.7	1 (!)
Opening 15, HG Doors	1.89	North	N/A	1 (!)
Opening 16, Rooflights	1.092	West	0.7	1 (!)
Opening 17, Rooflights	1.092	West	0.7	1 (!)
Opening 18, Rooflights	0.9204	West	0.7	1 (!)
Opening 19, Rooflights	0.9204	West	0.7	1 (!)
Opening 20, Rooflights	1.092	West	0.7	1 (!)
Opening 21, Rooflights	1.092	West	0.7	1 (!)
Opening 22, Rooflights	0.9204	South	0.7	1 (!)
Opening 23, Windows	1.56	East	0.7	1 (!)
Opening 24, Windows	1.56	East	0.7	1 (!)
Opening 25, Rooflights	0.9204	South	0.7	1 (!)
Opening 26, Rooflights	0.9204	South	0.7	1 (!)
Opening 27, Windows	3.15	East	0.7	1 (!)
Opening 28, Rooflights	0.9204	North	0.7	1 (!)

## 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	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.002 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	-0.018 (!)	
Roof	R6: Flat ceiling	SAP table default	0.12	
Roof	R4: Ridge (vaulted ceiling)	SAP table default	0.12	
Roof	R5: Ridge (inverted)	SAP table default	0.12	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.046	
External wall	E3: Sill	Calculated by person with suitable expertise	0.075	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.02 (!)	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	-0.002 (!)	
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	E16: Corner (normal)	Calculated by person with suitable expertise	0.041	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.079	

## 3 Air permeability (better than typically expected values are flagged with a subsequent (!))

Maximum permitted air permeability at 50Pa	8 m <sup>3</sup> /hm <sup>2</sup>	
Dwelling air permeability at 50Pa	5 m <sup>3</sup> /hm <sup>2</sup> , Design value	OK
Air permeability test certificate reference		

<b>4 Space heating</b>		
<b>Main heating system 1:</b> Heat pump with radiators or underfloor heating - Electricity		
Efficiency	249.9%	
Emitter type	Underfloor	
Flow temperature	35°C	
System type	Air source heat pump	
Manufacturer		
Model		
Commissioning		
<b>Secondary heating system:</b> Closed room heater		
Fuel	Wood logs	
Efficiency	65.0%	
Commissioning		
<b>5 Hot water</b>		
<b>Cylinder/store</b> - type: Cylinder		
Capacity	250 litres	
Declared heat loss	N/A	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
<b>Waste water heat recovery system 1</b> - type: N/A		
Efficiency		
Manufacturer		
Model		
<b>6 Controls</b>		
<b>Main heating 1</b> - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
<b>Water heating</b> - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		
<b>7 Lighting</b>		
Minimum permitted light source efficacy	75 lm/W	
Lowest light source efficacy	75 lm/W	OK
External lights control	N/A	
<b>8 Mechanical ventilation</b>		
<b>System type:</b> Centralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.43 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	K 160 EC	
Commissioning		
<b>9 Local generation</b>		
<b>Technology type:</b> Photovoltaic system (1)		
Peak power	4.4 kWp	
Orientation	North	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
<b>10 Heat networks</b>		
N/A		
<b>11 Supporting documentary evidence</b>		
N/A		

<b>12 Declarations</b>	
<b>a. Assessor Declaration</b>	
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>b. Client Declaration</b>	
N/A	