Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed using Kaizen SAP 10.2 SAP 10 program, 1.0.1

Date: Thu 06 Mar 2025 13:37:52

Project Information			
Assessed By	Scott Binstead	Building Type	House, Detached
OCDEA Registration	KAZN000006	Assessment Date	2025-02-07

Dwelling Details			
Assessment Type	As designed	Total Floor Area	348 m^2
Site Reference	Comberton Road	Plot Reference	Comberton Road
Address	Address Line 1, ..., XX1X 1XX		

Client Details	
Name	Snell David Ltd
Company	Snell David Ltd
Address	Scutches Barn 17 High Street, WHITTLESFORD, CB22 4LT

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	*8.50 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	1.76 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*46.02 kWh$_{PE}/m^2$*	
Dwelling primary energy	23.43 kWh$_{PE}/m^2$	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*49.17 kWh/m^2*	
Dwelling fabric energy efficiency	48.15 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*	0.14	Wl - Stud (0.53)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	Solid Bootroom (1.59)	OK
Floors	*0.18*	0.12	Flr - Ground (0.12)	OK
Roofs	*0.16*	0.15	Flat over Dormer (0.18)	OK
Windows, doors, and roof windows	*1.6*	1.06	R Side (1.4)	OK
Rooflights	*2.2*	1.4	Rear, Horizontal (1.4)	OK

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: Brick	17.944	0.14 **(!)**
Exposed wall: Render	96.177	0.14 **(!)**
Exposed wall: Clad	203.644	0.14 **(!)**
Exposed wall: Solid Bootroom	6.456	1.59
Exposed wall: To Store	16.094	0.14 **(!)**
Exposed wall: Wl - Dormer	4.432	0.21
Exposed wall: Wl - Stud	2.658	0.53
Ground floor: Flr - Ground	201.284	0.12
Exposed roof: Rf - Ins Joist	102.988	0.15
Exposed roof: Rf - Ins Rafter	100.671	0.16
Exposed roof: Flat over Dormer	2.452	0.18
Exposed roof: Rf - Flat Roof	23.6	0.13

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 (1)	2.728	North West	0.7	1.2
L Side, Door (2)	2.012	North East	0.7	1.2
Front, Windows (1)	5.59	North West	0.7	1.2
Rear, Windows (2)	8.29	South East	0.7	1.2
Front, Windows (3)	4.515	North West	0.7	1.2

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
L Side, Windows (4)	4.162	North East	0.7	1.2
R Side, Windows (5)	7.447	South West	0.7	1.2
Rear, Windows (6)	4.125	South East	0.7	1.2
Front, Windows (7)	1.566	North West	0.7	1.2
Rear, Windows (8)	1.566	South East		0 **(!)**
Rear, Windows (9)	6.646	South East	0.7	0.82 **(!)**
R Side, Windows (10)	14.289	South West	0.7	0.82 **(!)**
Rear, Windows (11)	5.791	South East	0.7	0.82 **(!)**
Front, Windows (12)	5.68	North West	0.7	1.2
Rear, Windows (13)	5.65	South East	0.7	1.2
R Side, RoofLights (1)	0.866	South East	0.7	1.3
Rear, RoofLights (2)	4.18	Horizontal	0.7	1.4
R Side, RoofLights (3)	0.81	Horizontal	0.7	1.4

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)	Calculated by person with suitable expertise	0.013 **(!)**	Not Provided
External wall	E4: Jamb	Calculated by person with suitable expertise	0.012 **(!)**	Not Provided
External wall	E3: Sill	Calculated by person with suitable expertise	0.009 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.085	Not Provided
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 **(!)**	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.035 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.093	Not Provided
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.077	Not Provided
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.046	Not Provided
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.079	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	Not Provided
Roof	R1: Head of roof window	SAP table default	0.24	Not Provided
Roof	R2: Sill of roof window	SAP table default	0.24	Not Provided
Roof	R3: Jamb of roof window	SAP table default	0.24	Not Provided
Roof	R4: Ridge (vaulted ceiling)	SAP table default	0.12	Not Provided
Roof	R8: Roof to wall (rafter)	SAP table default	0.12	Not Provided
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.021 **(!)**	Not Provided
Roof	R7: Flat ceiling (inverted)	SAP table default	0.12	Not Provided
Roof	R10: All other roof or room-in-roof junctions	Calculated by person with suitable expertise	0.038 **(!)**	Not Provided
Roof	R11: Upstands or kerbs of rooflights	SAP table default	0.24	Not Provided

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	219.3%	
Emitter type	Underfloor	
Flow temperature		
System type	HeatPumpsWet	
Manufacturer		
Model		
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	2.4 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	101.25 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	*1.5 W/(l/s)*	
Specific fan power	0.52 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	89%	OK
Manufacturer/Model	Vent Axia Ltd Sentinel Kinetic Plus B	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	5.6 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	Not Provided
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: KAZN000006
Name: Scott Binstead	Date: 06 Mar 2025

b. Client Declaration

N/A