Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 08 Jul 2025 17:01:35

Project Information			
Assessed By	Jonathon Stone	Building Type	Flat, End-terrace
OCDEA Registration	EES/024099	Assessment Date	2025-07-08

Dwelling Details			
Assessment Type	As built	Total Floor Area	61 m^2
Site Reference	22419 Flat 05	Plot Reference	Dimplex Edel 200 V3
Address	77, Flat 05, Southampton Street, Reading, RG1 2QU		

Client Details	
Name	Elmlodge Developments
Company	Elmlodge Developments
Address	-, Southampton Street, -, -

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	*10.86 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.1 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.67 kWh_{PE}/m^2*	
Dwelling primary energy	32.89 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*19.3 kWh/m^2*	
Dwelling fabric energy efficiency	16.5 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*	0.18	Walls (1) (0.18)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.2	North 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^2K]
Exposed wall: Walls (1)	35.35	0.18
Party wall: Party Wall (1)	34.39	0 **(!)**
Party wall: Party Wall (2)	6.6	0 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
North Windows, Windows	5.32	South	1.0	1.2
East Windows, Windows	2	East	1.0	1.2

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	0.006 **(!)**	ROI -Steel
External wall	E3: Sill	Calculated by person with suitable expertise	0.012 **(!)**	ROI -Steel
External wall	E4: Jamb	Calculated by person with suitable expertise	0.023 **(!)**	ROI -Steel

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.0495	Auto Psi - 1/2 Psi
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.075	ROI -Steel
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.045	ROI -SteelROI -Steel
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.0515	ROI - Timber - 1/2 Psi
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	4.32 m^3/hm^2, Measured value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Room heaters - Electricity	
Efficiency	100.0%
Emitter type	
Flow temperature	
System type	Panel, convector or radiant heaters
Manufacturer	NIBE Energy Systems Ltd
Model	Fighter 470
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	
Manufacturer	GDC Group Ltd
Model	EDL200UK-630
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Programmer and appliance thermostats	
Function	
Ecodesign class	
Manufacturer	
Model	
Main heating 2 - type: Not applicable	
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: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	*1.5 W/(l/s)*	
Specific fan power	0.67 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	89%	OK
Manufacturer/Model	VL-250CZPVU-R-E	
Commissioning		

9 Local generation
N/A

10 Heat networks
N/A

11 Supporting documentary evidence	
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	

Signed:		Assessor ID:	EES/024099
Name:	Jonathan Stone	Date:	8/7/25

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	

Signed:		Organisation:	Perfect Property Developments
Name:	Sundip Grewal	Date:	21/7/25

Summary for Input Data

Property Reference	22419 Flat 05	Issued on Date	08/07/2025
Assessment Reference	Dimplex Edel 200 V3	Prop Type Ref	New Build
Property	77, Flat 05, Southampton Street, Reading, RG1 2QU		

SAP Rating	89 B	DER	3.10	TER	10.86
Environmental	98 A	% DER < TER			71.45
CO_2 Emissions (t/year)	0.17	DFEE	16.49	TFEE	19.30
Compliance Check	See BREL	% DFEE < TFEE			14.53
% DPER < TPER	42.97	DPER	32.89	TPER	57.67

Assessor Details	Mr. Jonathon Stone	Assessor ID	Y315-0001
Client			

SUMMARY FOR INPUT DATA FOR: New Build (As Built)

Orientation	North	
Property Tenture	ND	
Transaction Type	5	
Terrain Type	Urban	
1.0 Property Type	Flat, End-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2022	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	34.86 m	61.46 m²	2.40 m

8.0 Living Area	23.12	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
010 External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	9.00	42.67	35.35	0.00	None	7.32	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	34.39	0.00	None
Heated Corridor	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	6.60	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	119.22

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceilings 1	Timber I-joists, carpeted	20.00	61.46

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)

Party Floor 1	Lowest occupied	Timber I-joists, carpeted	20.00	61.46

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63		1.00	1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
North Windows	Windows	010 External Wall 1	South	5.32	0
East Windows	Windows	010 External Wall 1	East	2.00	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	5.89	0.01	0.01	ROI -Steel	No
E3 Sill	Independently assessed	5.89	0.01	0.01	ROI -Steel	No
E4 Jamb	Independently assessed	9.96	0.02	0.02	ROI -Steel	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	35.56	0.05	0.05	Auto Psi - 1/2 Psi	No
E16 Corner (normal)	Independently assessed	7.20	0.07	0.07	ROI -Steel	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	2.40	-0.04	-0.04	ROI -SteelROI -Steel	No
E18 Party wall between dwellings	Independently assessed	4.80	0.05	0.05	ROI - Timber - 1/2 Psi	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	35.32	0.00	0.00		No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500688
Configuration	2
MVHR Duct Insulated	Uninsulated Ducts
Manufacturer SFP	0.67
Duct Type	Rigid
MVHR Efficiency	89.00
Wet Rooms	2
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

Designed AP_{50}	4.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	
As Built AP_{50}	4.32	m³/(h.m²) @ 50 Pa

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Low energy Lighting	80.00	10.00	800.00	10

24.0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Database Ref. No.	0	
Fuel Type	Electricity	
SAP Code	691	
Model Name	Fighter 470	
Manufacturer	NIBE Energy Systems Ltd	
Controls SAP Code	2603	
PCDF Controls	0	
Delayed Start Stat	Yes	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	

25.0 Main Heating 2	Database	
Percentage of Heat	0.00	%
Database Ref. No.	190006	
Fuel Type	Electricity	
SAP Code	0	
Model Name	EDL200UK-630	
Manufacturer	GDC Group Ltd	
Controls	2100	
PCDF Controls	0	
Delayed Start Stat	No	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Flow Temperature	Enter value	

26.0 Heat Networks	None

27.0 Secondary Heating	None

28.0 Water Heating

Water Heating	Main Heating 2
SAP Code	914
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No

Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Immersion Heater	Dual	
Summer Immersion	No	
Cold Water Source	From mains	
Bath Count	1	
Baths connected to WWHRS	0	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
v	Combi boiler or unvented hot water system	11.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Internal Store	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness	0	
Cylinder Volume	201.00	L
Loss	1.61	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store	None	
Thermal Store Pipework	within a single casing	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None