

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 17:01:37

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	50 m ²
Site Reference	22419 Flat 15	Plot Reference	Dimplex Edel 200 V3
Address	77, Flat 16, 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	13.78 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.76 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	73.78 kWh _{PE} /m ²		
Dwelling primary energy	49.96 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	26.9 kWh/m ²		
Dwelling fabric energy efficiency	27.5 kWh/m ²		FAIL

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 (2) (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	0.12	Roof (1) (0.12)	OK
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 ² K]	
Exposed wall: Walls (1)	15.14	0.15	
Exposed wall: Walls (2)	16.21	0.18	
Party wall: Party Wall (1)	33.26	0 (!)	
Party wall: Party Wall (2)	7	0 (!)	
Exposed roof: Roof (1)	46.79	0.12	

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]
North Windows, Windows	2.76	North	1.0	1.2
West Windows, Windows	1	West	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

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.023 (!)	ROI -Steel
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	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.049	ROI -Steel
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.054	ROI -Steel
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.075	ROI -Steel
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.0515	ROI - Timber - 1/2 Psi
External wall	E25: Staggered party wall between dwellings	SAP table default	0.24	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.24	1/2 Psi
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	4.59 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	0.62 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	90%	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: J. 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:	
Name:	Sundip Grewal
Organisation:	
Date:	21/7/25

Summary for Input Data

Property Reference	22419 Flat 15	Issued on Date	08/07/2025
Assessment Reference	Dimplex Edel 200 V3	Prop Type Ref	New Build
Property	77, Flat 16, Southampton Street, Reading, RG1 2QU		

SAP Rating	84 B	DER	4.76	TER	13.78
Environmental	97 A	% DER < TER			65.46
CO ₂ Emissions (t/year)	0.21	DFEE	27.46	TFEE	26.86
Compliance Check	See BREL	% DFEE < TFEE			-2.21
% DPER < TPER	32.28	DPER	49.96	TPER	73.78

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	3	
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	Ground floor:	Heat Loss Perimeter 31.28 m	Internal Floor Area 50.43 m ²	Average Storey Height 2.28 m
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8.0 Living Area	26.60	m ²
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Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
011 External Wall 2	Timber Frame	Timber framed wall (one layer of plasterboard)	0.15	9.00	18.90	15.14	0.00	None	3.76	Enter Gross Area
010 External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	9.00	16.21	16.21	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	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	33.26	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	7.00	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	75.50

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Plasterboard, insulated flat roof	0.12	9.00	46.79	46.79	None	0.00	Enter Gross Area	0.00

11.1 Party Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Timber I-joists, carpeted	20.00	50.43

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	011 External Wall 2	North	2.76	0
West Windows	Windows	011 External Wall 2	West	1.00	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	3.33	0.01	0.01 ROI -Steel	No
E3 Sill	Independently assessed	3.33	0.01	0.01 ROI -Steel	No
E4 Jamb	Independently assessed	7.32	0.02	0.02 ROI -Steel	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	11.91	0.05	0.05 Auto Psi - 1/2 Psi	No
E13 Gable (insulation at rafter level)	Independently assessed	5.07	0.05	0.05 ROI -Steel	No
E14 Flat roof	Independently assessed	7.05	0.05	0.05 ROI -Steel	No
E16 Corner (normal)	Independently assessed	7.45	0.07	0.07 ROI -Steel	No
E18 Party wall between dwellings	Independently assessed	2.40	0.05	0.05 ROI - Timber - 1/2 Psi	No
E25 Staggered party wall between dwellings	Table K1 - Default	2.53	0.24	0.24	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	17.18	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	16.36	0.24	0.24 1/2 Psi	No
R4 Ridge (vaulted ceiling)	Table K1 - Default	6.24	0.12	0.12	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	1
MVHR Duct Insulated	Uninsulated Ducts
Manufacturer SFP	0.62
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
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

Summary for Input Data

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

Designed AP₅₀

4.50

m³/(h.m²) @ 50 Pa

Property Tested?

Yes

Test Method

Blower Door

As Built AP₅₀

4.59

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

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

Summary for Input Data

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
Shower	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