

# Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 16 Oct 2023 09:06:39

Project Information			
Assessed By	Harry Davey	Building Type	House, End-terrace
OCDEA Registration	EES/020345	Assessment Date	2023-10-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	71 m <sup>2</sup>
Site Reference	7027	Plot Reference	Green
Address	103 St Margarets Avenue, North Cheam, SM3 9TX		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

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	Mains gas	
Target carbon dioxide emission rate	13.0 kgCO <sub>2</sub> /m <sup>2</sup>	
Dwelling carbon dioxide emission rate	8.21 kgCO <sub>2</sub> /m <sup>2</sup>	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	68.09 kWh <sub>PE</sub> /m <sup>2</sup>	
Dwelling primary energy	45.48 kWh <sub>PE</sub> /m <sup>2</sup>	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	42.5 kWh/m <sup>2</sup>	
Dwelling fabric energy efficiency	40.1 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	0.18	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	0.1	Ground floor (0.1)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.16	Opening (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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	67.9782	0.18
Party wall: Party Wall (1)	33.09	0 (!)
Ground floor: Ground floor, Ground floor	35.27	0.1 (!)
Exposed roof: Roof (1)	35.27	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, Door	1.68	South West	N/A	1 (!)
Opening, Window	0.208	South West	0.7	1.2
Opening, Window	0.96	South West	0.7	1.2
Opening, Window	3.152	South West	0.7	1.2
Opening, Window	2.8368	South West	0.7	1.2
Opening, Window	1.14	South West	0.7	1.2
Opening, Window	1.452	North East	0.7	1.2
Opening, Window	1.68	North East	0.7	1.2
Opening, Window	1.08	North East	0.7	1.2
Opening, Window	0.621	North East	0.7	1.2
Opening, Door	2.912	North East	N/A	1 (!)
Opening, Window	0.8	West	0.7	1.2
Opening, Window	0.72	West	0.7	1.2

Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Opening, Window	0.75	West	0.7	1.2
Opening, Window	0.8	South	0.7	1.2
Opening, Window	0.72	South	0.7	1.2
Opening, Window	0.75	South	0.7	1.2

### 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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.05	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.05	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.16	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.09	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.08	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.12	

### 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	3 m <sup>3</sup> /hm <sup>2</sup> , Design value (!)	OK
Air permeability test certificate reference		

### 4 Space heating

**Main heating system 1:** Boiler with radiators or underfloor heating - Mains gas

Efficiency	89.5%
Emitter type	Radiators
Flow temperature	
System type	
Manufacturer	boiler
Model	boiler
Commissioning	
<b>Secondary heating system:</b> 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	

<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: N/A		
Manufacturer		
Model		
<b>7 Lighting</b>		
<i>Minimum permitted light source efficacy</i>	75 lm/W	
Lowest light source efficacy	80 lm/W	OK
External lights control	N/A	
<b>8 Mechanical ventilation</b>		
<b>System type:</b> Balanced whole-house mechanical ventilation with heat recovery		
<i>Maximum permitted specific fan power</i>	1.5 W/(l/s)	
Specific fan power	0.5 W/(l/s)	OK
<i>Minimum permitted heat recovery efficiency</i>	73%	
Heat recovery efficiency	91%	OK
Manufacturer/Model	MRXBOX-ECO3	
Commissioning		
<b>9 Local generation</b>		
Technology type: <b>Photovoltaic system (1)</b>		
Peak power	4.5 kWp	
Orientation	South West	
Pitch	30°	
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		