

Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 05 Aug 2026 09:38:51

Project Information			
Assessed By	Nicola Battista	Building Type	Flat, Detached
OCDEA Registration	EES/022584	Assessment Date	2026-08-05

Dwelling Details			
Assessment Type	As designed	Total Floor Area	43 m ²
Site Reference	04	Plot Reference	04 ashp + PV
Address	Flat 4 2-4 Church St, Caversham, RG4 8AT		

Client Details	
Name	Array
Company	Array
Address	

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	14.56 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	2.97 kgCO ₂ /m ²	OK

1b Target primary energy rate and dwelling primary energy		
Target primary energy	76.73 kWh _{PE} /m ²	
Dwelling primary energy	40.68 kWh _{PE} /m ²	OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	36.8 kWh/m ²	
Dwelling fabric energy efficiency	35.3 kWh/m ²	OK

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	0.16	Walls (2) (0.17)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	N/A	N/A	N/A
Roofs	0.16	0.12	Roof (2) (0.12)	OK
Windows, doors, and roof windows	1.6	1.24	Opening (1.4)	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)	34.008	0.16	
Sheltered wall: Walls (2)	12.97	0.17	
Exposed roof: Roof (1)	15.56	0.11	
Exposed roof: Roof (2)	29.15	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]
Opening, Opening Type 1	1.89	North	N/A	1.4
Opening, Opening Type 2	1.224	West	0.7	1.2
Opening, Opening Type 2	1.224	West	0.7	1.2
Opening, Opening Type 2	1.224	West	0.7	1.2
Opening, Opening Type 3	0.76	East	0.7	1.2
Opening, Opening Type 3	0.76	East	0.7	1.2
Opening, Opening Type 3	0.76	East	0.7	1.2
Opening, Opening Type 3	0.76	East	0.7	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	E16: Corner (normal)	Not government-approved scheme	0.04	Knauf
External wall	E2: Other lintels (including other steel lintels)	Not government-approved scheme	0.05	Hi-Therm
External wall	E3: Sill	Not government-approved scheme	0.024 (!)	Knauf
External wall	E4: Jamb	Not government-approved scheme	0.019 (!)	Knauf
External wall	E7: Party floor between dwellings (in blocks of flats)	Not government-approved scheme	0.032 (!)	Knauf
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	E11: Eaves (insulation at rafter level)	Not government-approved scheme	0.02 (!)	Knauf
External wall	E10: Eaves (insulation at ceiling level)	Not government-approved scheme	0.084	Knauf
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.045	Knauf
External wall	E13: Gable (insulation at rafter level)	Not government-approved scheme	0.055	Knauf

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	212.4%
Emitter type	Radiators
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Mitsubishi Electric Europe B.V.
Model	Ecodan 5.0 kW
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.86 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	120 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	1.25 kWp	
Orientation	South	
Pitch	30°	
Overshading	None or very little	
Manufacturer		
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:	
Name:	Date:	
b. Client Declaration		
N/A		