Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:25

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 01	Plot Reference	Plot 01
Address	Flat 2, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.86 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.67 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*73.47 kWh_{PE}/m^2*	
Dwelling primary energy	48.24 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.4 kWh/m^2*	
Dwelling fabric energy efficiency	33.1 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	N/A
Windows, doors, and roof windows	*1.6*	1.4	Window Rear (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^2K]**
Sheltered wall: Walls (1)	66.5195	0.18
Party wall: Party Wall (1)	16.48	0 **(!)**
Party wall: Party Wall (2)	25.3	0 **(!)**
Ground floor: Ground Floor, Ground Floor	69.92	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Window Rear, Window S/W	1.449	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
LHS Windows, Window S/W	4.416	South	1.0	1.4
LHS Windows, Window S/W	4.163	South	1.0	1.4
LHS Windows, Window S/W	1.365	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.87 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	119.23 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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 [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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Date: Fri 19 Dec 2025 14:42:25

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 02	Plot Reference	Plot 02
Address	Flat 1, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.21 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.09 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.39 kWh_{PE}/m^2*	
Dwelling primary energy	32.64 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*26.3 kWh/m^2*	
Dwelling fabric energy efficiency	21.2 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	N/A
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	18.4555	0.18
Party wall: Party Wall (1)	56.52	0 **(!)**
Party wall: Party Wall (2)	24.92	0 **(!)**
Ground floor: Ground Floor, Ground Floor	50.3	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.19 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.

Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

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Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 03	Plot Reference	Plot 03
Address	Flat 2, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.43 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.08 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*60.49 kWh_{PE}/m^2*	
Dwelling primary energy	32.26 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*26.4 kWh/m^2*	
Dwelling fabric energy efficiency	22.3 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	N/A
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.794	0.18
Party wall: Party Wall (1)	53.84	0 (!)
Party wall: Party Wall (2)	24.76	0 (!)
Ground floor: Ground Floor, Ground Floor	70.42	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between	SAP table default	0 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
	dwellings (in blocks of flats)			
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.7 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Goodwood Builders LTD
Name: S Brown	Date: 22.12.25

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Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 04	Plot Reference	Plot 04
Address	Flat 1, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.43 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.22 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*71.58 kWh_{PE}/m^2*	
Dwelling primary energy	33.93 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*27.4 kWh/m^2*	
Dwelling fabric energy efficiency	22.1 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	N/A
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 **(!)**
Party wall: Party Wall (2)	24.68	0 **(!)**
Ground floor: Ground Floor, Ground Floor	50.3	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.35 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.

Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Grasswood Builders Ltd
Name: S Brown	Date: 22/12/25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:25

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	72 m^2
Site Reference	Plot 05	Plot Reference	Plot 05
Address	Flat 2, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.43 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.2 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*60.48 kWh_{PE}/m^2*	
Dwelling primary energy	33.45 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*26.7 kWh/m^2*	
Dwelling fabric energy efficiency	23.0 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.354	0.18
Party wall: Party Wall (1)	53.84	0 **(!)**
Party wall: Party Wall (2)	25.25	0 **(!)**
Ground floor: Ground Floor, Ground Floor	71.53	0.11
Exposed roof: Roof (1)	1.49	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E14: Flat roof	SAP table default	0.16	

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	2.9 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	
Model	
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: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: Ironstone Builders Ltd
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 06	Plot Reference	Plot 06
Address	Flat 1, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.43 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.37 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*71.58 kWh_{PE}/m^2*	
Dwelling primary energy	35.43 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*27.4 kWh/m^2*	
Dwelling fabric energy efficiency	22.4 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	N/A
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 **(!)**
Party wall: Party Wall (2)	24.68	0 **(!)**
Ground floor: Ground Floor, Ground Floor	50.3	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.89 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: Townwood Builders Ltd
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	73 m^2
Site Reference	Plot 07	Plot Reference	Plot 07
Address	Flat 2, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.22 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.12 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*59.35 kWh_{PE}/m^2*	
Dwelling primary energy	32.69 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*26.3 kWh/m^2*	
Dwelling fabric energy efficiency	22.4 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.354	0.18
Party wall: Party Wall (1)	55.48	0 **(!)**
Party wall: Party Wall (2)	23.56	0 **(!)**
Ground floor: Ground Floor, Ground Floor	73.41	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between	SAP table default	0 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
	dwellings (in blocks of flats)			
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD

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	2.98 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.

Signe [redacted]	Organisation: J Greenwood Builders Ltd
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	64 m^2
Site Reference	Plot 08	Plot Reference	Plot 08
Address	Flat 1, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*14.35 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.51 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*76.42 kWh_{PE}/m^2*	
Dwelling primary energy	46.82 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.8 kWh/m^2*	
Dwelling fabric energy efficiency	31.8 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*	0.11	Ground Floor (0.11)	OK
Roofs	*0.16*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	61.3895	0.18
Party wall: Party Wall (1)	15.76	0 **(!)**
Party wall: Party Wall (2)	29.13	0 **(!)**
Ground floor: Ground Floor, Ground Floor	64.26	0.11
Exposed roof: Roof (1)	5.55	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	0.828	East	1.0	1.4
Rear Windows, Window S/W	1.15	South East	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.067	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E14: Flat roof	SAP table default	0.16	

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	2.88 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	113.13 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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 [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.	
Signe [redacted]	Organisation: J Greenwood Builders Ltd
Name: S Brand	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 09	Plot Reference	Plot 09
Address	Flat 4, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.88 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.82 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*62.87 kWh_{PE}/m^2*	
Dwelling primary energy	39.67 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*29.3 kWh/m^2*	
Dwelling fabric energy efficiency	27.4 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*	1.4	Window Rear (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^2K]**
Sheltered wall: Walls (1)	66.5195	0.18
Party wall: Party Wall (1)	16.48	0 **(!)**
Party wall: Party Wall (2)	25.3	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]**
Window Rear, Window S/W	1.449	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
LHS Windows, Window S/W	4.416	South	1.0	1.4
LHS Windows, Window S/W	4.163	South	1.0	1.4
LHS Windows, Window S/W	1.365	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.7 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	119.23 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	

Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted]	Organisation: Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 10	Plot Reference	Plot 10
Address	Flat 3, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.88 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.82 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.26 kWh_{PE}/m^2*	
Dwelling primary energy	29.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*19.5 kWh/m^2*	
Dwelling fabric energy efficiency	17.4 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*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	18.4555	0.18
Party wall: Party Wall (1)	56.52	0 (!)
Party wall: Party Wall (2)	24.92	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]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.051	RCD, 0.19 Block
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.85 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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 [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.	
Signe [redacted]	Organisation: J Greenwood Builders (LTD)
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 11	Plot Reference	Plot 11
Address	Flat 4, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*9.88 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.56 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*52.14 kWh_{PE}/m^2*	
Dwelling primary energy	27.12 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*18.8 kWh/m^2*	
Dwelling fabric energy efficiency	17.7 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.794	0.18
Party wall: Party Wall (1)	53.84	0 (!)
Party wall: Party Wall (2)	24.76	0 (!)
Exposed roof: Roof (1)	1.49	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E14: Flat roof	SAP table default	0.16	
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	

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	2.71 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Sig [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Greenwood Builders (LTD)
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 12	Plot Reference	Plot 12
Address	Flat 3, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.51 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.73 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.24 kWh_{PE}/m^2*	
Dwelling primary energy	29.03 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*17.7 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*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 (!)
Party wall: Party Wall (2)	24.68	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]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.9 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Gramwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 13	Plot Reference	Plot 13
Address	Flat 4, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*9.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.43 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.66 kWh_{PE}/m^2*	
Dwelling primary energy	25.76 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*17.3 kWh/m^2*	
Dwelling fabric energy efficiency	16.2 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*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.274	0.18
Party wall: Party Wall (1)	53.84	0 (!)
Party wall: Party Wall (2)	25.25	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]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.085	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.4 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: JG Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 14	Plot Reference	Plot 14
Address	Flat 3, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.51 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.72 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.24 kWh_{PE}/m^2*	
Dwelling primary energy	28.91 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*17.7 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*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 (!)
Party wall: Party Wall (2)	24.68	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]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.84 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted]	Organisation: JGreenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	73 m^2
Site Reference	Plot 15	Plot Reference	Plot 15
Address	Flat 4, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*9.59 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.57 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.57 kWh_{PE}/m^2*	
Dwelling primary energy	27.12 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*18.3 kWh/m^2*	
Dwelling fabric energy efficiency	17.6 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.354	0.18
Party wall: Party Wall (1)	55.48	0 (!)
Party wall: Party Wall (2)	23.56	0 (!)
Exposed roof: Roof (1)	1.49	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E14: Flat roof	SAP table default	0.16	
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	

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	2.92 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Gazzard Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:26

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	71 m^2
Site Reference	Plot 16	Plot Reference	Plot 16
Address	Flat 3, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*12.69 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.84 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*67.26 kWh_{PE}/m^2*	
Dwelling primary energy	40.0 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*32.5 kWh/m^2*	
Dwelling fabric energy efficiency	28.4 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*	0.15	Ground Floor (0.15)	OK
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.4	RHS Windows (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^2K]**
Sheltered wall: Walls (1)	71.0225	0.18
Party wall: Party Wall (1)	11.31	0 (!)
Party wall: Party Wall (2)	29.13	0 (!)
Party floor: Ground Floor, Ground Floor	12.07	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
RHS Windows, Window S/W	3.197	South	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	0.828	East	1.0	1.4
Rear Windows, Window S/W	1.15	South East	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E14: Flat roof	SAP table default	0.16	
External wall	E20: Exposed floor (normal)	Calculated by person with suitable expertise	0.054	RCD
External wall	E21: Exposed floor (inverted)	SAP table default	0.32	
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	

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	2.62 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	115.78 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Gizzenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 17	Plot Reference	Plot 17
Address	Flat 6, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*15.66 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	5.27 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*83.2 kWh_{PE}/m^2*	
Dwelling primary energy	54.4 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*46.5 kWh/m^2*	
Dwelling fabric energy efficiency	36.9 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	Window Rear (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^2K]**
Sheltered wall: Walls (1)	66.5195	0.18
Party wall: Party Wall (1)	16.48	0 (!)
Party wall: Party Wall (2)	25.3	0 (!)
Exposed roof: Roof (1)	64.6	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Window Rear, Window S/W	1.449	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window S/W	0.966	West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
Window Rear, Window N/E	1.449	North West	1.0	1.4
LHS Windows, Window S/W	4.416	South	1.0	1.4
LHS Windows, Window S/W	4.163	South	1.0	1.4
LHS Windows, Window S/W	1.365	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	Calculated by person with suitable expertise	0.075	default/2dwellings
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	2.95 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	119.23 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Sign [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted] Name: S Brown	Organisation: J Greenwood Builders LTD Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 18	Plot Reference	Plot 18
Address	Flat 5, 8 Cross Road Manchester, M21 9SB		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*14.13 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.25 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*75.32 kWh_{PE}/m^2*	
Dwelling primary energy	34.26 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*30.2 kWh/m^2*	
Dwelling fabric energy efficiency	21.2 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	18.4555	0.18
Party wall: Party Wall (1)	56.52	0 **(!)**
Party wall: Party Wall (2)	24.92	0 **(!)**
Exposed roof: Roof (1)	14.24	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated

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	2.84 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	

Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.	
Signe [redacted] Name: S Brown	Organisation: J Gilgallwood Builders LTD Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 19	Plot Reference	Plot 19
Address	Flat 6, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.55 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.06 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.13 kWh_{PE}/m^2*	
Dwelling primary energy	32.15 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*26.5 kWh/m^2*	
Dwelling fabric energy efficiency	20.9 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.784	0.18
Party wall: Party Wall (1)	53.84	0 **(!)**
Party wall: Party Wall (2)	24.76	0 **(!)**
Exposed roof: Roof (1)	21.89	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	2.87 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	

Sign [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted]	Organisation: J Greenwood Builders (T)
Name: S Brown	Date: 22.12.25.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 20	Plot Reference	Plot 20
Address	Flat 5, 6 Cross Road Manchester, M21 9SA		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.42 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.36 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*71.54 kWh_{PE}/m^2*	
Dwelling primary energy	35.33 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	21.2 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 (!)
Party wall: Party Wall (2)	24.68	0 (!)
Exposed roof: Roof (1)	13.08	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	3.39 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Sign [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.	
Signe [redacted]	Organisation: J Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	70 m^2
Site Reference	Plot 21	Plot Reference	Plot 21
Address	Flat 6, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*10.84 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.09 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.31 kWh_{PE}/m^2*	
Dwelling primary energy	32.43 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*23.2 kWh/m^2*	
Dwelling fabric energy efficiency	20.3 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.274	0.18
Party wall: Party Wall (1)	53.84	0 (!)
Party wall: Party Wall (2)	25.25	0 (!)
Exposed roof: Roof (1)	22.55	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.085	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	3.39 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted] Name: S Brown	Organisation: J Greenwood Builders (TI) Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	50 m^2
Site Reference	Plot 22	Plot Reference	Plot 22
Address	Flat 5, 4 Cross Road Manchester, M21 9SX		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.57 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.26 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*72.34 kWh_{PE}/m^2*	
Dwelling primary energy	34.34 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*27.6 kWh/m^2*	
Dwelling fabric energy efficiency	21.2 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	21.7055	0.18
Party wall: Party Wall (1)	53.52	0 (!)
Party wall: Party Wall (2)	24.68	0 (!)
Exposed roof: Roof (1)	14.53	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window S/W	5.727	South	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	2.88 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.57 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Sign [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted]	Organisation: J Greenwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	73 m^2
Site Reference	Plot 23	Plot Reference	Plot 23
Address	Flat 6, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*11.19 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.05 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*59.2 kWh_{PE}/m^2*	
Dwelling primary energy	32.04 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*25.9 kWh/m^2*	
Dwelling fabric energy efficiency	21.5 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	LHS Windows (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^2K]**
Sheltered wall: Walls (1)	22.354	0.18
Party wall: Party Wall (1)	55.48	0 (!)
Party wall: Party Wall (2)	23.56	0 (!)
Exposed roof: Roof (1)	26.42	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
LHS Windows, Window S/W	7.521	South	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4
RHS Windows, Window N/E	1.8375	North	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	

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	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.032 (!)	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	2.98 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	116.89 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted] Name: S Brown	Organisation: J Greenwood Builders LTD Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	71 m^2
Site Reference	Plot 24	Plot Reference	Plot 24
Address	Flat 5, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*15.48 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	4.76 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*82.3 kWh_{PE}/m^2*	
Dwelling primary energy	49.27 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*45.2 kWh/m^2*	
Dwelling fabric energy efficiency	34.0 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*	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.4	RHS Windows (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^2K]**
Sheltered wall: Walls (1)	71.0225	0.18
Party wall: Party Wall (1)	11.31	0 (!)
Party wall: Party Wall (2)	29.13	0 (!)
Exposed roof: Roof (1)	56.27	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
RHS Windows, Window S/W	3.197	South	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	1.8375	East	1.0	1.4
Rear Windows, Window N/E	0.828	East	1.0	1.4
Rear Windows, Window S/W	1.15	South East	1.0	1.4

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	RCD

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.025 (!)	RCD
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 (!)	RCD
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 (!)	RCD
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	RCD
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.03 (!)	RCD
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.132	Calculated
External wall	E9: Balcony between dwellings - wall insulation continuous	SAP table default	0.15	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	RCD

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	2.91 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	
Model	
Commissioning	
Main heating system 2: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	0.0%
Emitter type	
Flow temperature	
System type	Heat Pump
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	115.78 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted]	Organisation: J Goodwood Builders LTD
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:27

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	55 m^2
Site Reference	Plot 25	Plot Reference	Plot 25
Address	Flat 11, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*15.76 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	7.12 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*83.93 kWh_{PE}/m^2*	
Dwelling primary energy	73.79 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.4 kWh/m^2*	
Dwelling fabric energy efficiency	48.8 kWh/m^2	FAIL

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*	0.13	Walls (1) (0.13)	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*	1.32	Front Window (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^2K]**
Sheltered wall: Walls (1)	26.4122	0.13 (!)
Party wall: Party Wall (1)	25.4	0 (!)
Party wall: Party Wall (2)	31.89	0 (!)
Exposed roof: Roof (1)	51.99	0.12
Exposed roof: Roof (2)	10.21	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^2K]**
Front Window, Window N/E	1.3668	North	1.0	1.4
Rear Window, Window S/W	19.61	South	0.7	1.3
Front Door, Door	2.121	North	N/A	1.4

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	0.169	Calculated
External wall	E3: Sill	Calculated by person with suitable expertise	0.007 (!)	Calculated

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.089	Calculated
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.031 (!)	Calculated
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.132	Calculated
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.032 (!)	Calculated
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.12	Default 1/2
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.026 (!)	Calculated
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.171	Calculated

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	2.9 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	106.5 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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: [redacted] Name: S Brown	Organisation: J Greenwood Builders LTD Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:28

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	71 m^2
Site Reference	Plot 26	Plot Reference	Plot 26
Address	Flat 10, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.92 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	6.3 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*73.81 kWh_{PE}/m^2*	
Dwelling primary energy	65.37 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.3 kWh/m^2*	
Dwelling fabric energy efficiency	44.5 kWh/m^2	FAIL

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*	0.13	Walls (1) (0.13)	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*	1.32	Front Window (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^2K]**
Sheltered wall: Walls (1)	25.0454	0.13 (!)
Party wall: Party Wall (1)	52.67	0 (!)
Exposed roof: Roof (1)	70.29	0.12
Exposed roof: Roof (2)	10.35	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^2K]**
Front Window, Window N/E	1.3668	North	1.0	1.4
Front Window, Window N/E	1.3668	North	1.0	1.4
Rear Window, Window S/W	19.61	South	0.7	1.3
Front Door, Door	2.121	North	N/A	1.4

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	0.169	Calculated
External wall	E3: Sill	Calculated by person with suitable expertise	0.007 (!)	Calculated

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.089	Calculated
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.031 (!)	Calculated
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.132	Calculated
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.032 (!)	Calculated
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.12	Default 1/2
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.026 (!)	Calculated
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.171	Calculated

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	2.98 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	107.62 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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 [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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.	
Signe [redacted]	Organisation: J Greenwood Builders
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:28

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	71 m^2
Site Reference	Plot 27	Plot Reference	Plot 27
Address	Flat 9, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.92 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	6.31 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*73.81 kWh_{PE}/m^2*	
Dwelling primary energy	65.41 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.3 kWh/m^2*	
Dwelling fabric energy efficiency	44.4 kWh/m^2	FAIL

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*	0.13	Walls (1) (0.13)	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*	1.32	Front Window (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^2K]**
Sheltered wall: Walls (1)	25.0454	0.13 (!)
Party wall: Party Wall (1)	52.67	0 (!)
Exposed roof: Roof (1)	70.29	0.12
Exposed roof: Roof (2)	10.35	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^2K]**
Front Window, Window N/E	1.3668	North	1.0	1.4
Front Window, Window N/E	1.3668	North	1.0	1.4
Rear Window, Window S/W	19.61	South	0.7	1.3
Front Door, Door	2.121	North	N/A	1.4

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	0.146	Calculated
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 (!)	Calculated

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.089	Calculated
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.031 (!)	Calculated
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.132	Calculated
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.032 (!)	Calculated
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.12	Default 1/2
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.026 (!)	Calculated
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.171	Calculated

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	3 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	107.62 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	

Signe[redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted] Name: S Brown	Organisation: J Gatenwood Builders LTD Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:28

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, Mid-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	71 m^2
Site Reference	Plot 28	Plot Reference	Plot 28
Address	Flat 8, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*13.96 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	6.34 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*74.01 kWh_{PE}/m^2*	
Dwelling primary energy	65.73 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.5 kWh/m^2*	
Dwelling fabric energy efficiency	44.7 kWh/m^2	FAIL

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*	0.13	Walls (1) (0.13)	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*	1.32	Front Window (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^2K]**
Sheltered wall: Walls (1)	25.0454	0.13 (!)
Party wall: Party Wall (1)	49.13	0 (!)
Exposed roof: Roof (1)	70.29	0.12
Exposed roof: Roof (2)	10.35	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^2K]**
Front Window, Window N/E	1.3668	North	1.0	1.4
Front Window, Window N/E	1.3668	North	1.0	1.4
Rear Window, Window S/W	19.61	South	0.7	1.3
Front Door, Door	2.121	North	N/A	1.4

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	0.169	Calculated
External wall	E3: Sill	Calculated by person with suitable expertise	0.007 (!)	Calculated

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.089	Calculated
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.031 (!)	Calculated
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.132	Calculated
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.032 (!)	Calculated
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.12	Default 1/2
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.026 (!)	Calculated
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.171	Calculated

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	2.96 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	
Model	
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: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	107.62 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	0.6 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	OK
Manufacturer/Model	MRXBOXAB-ECO2, MRXBOXAB-ECO2C	
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.	
Signe [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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 [redacted]	Organisation: J Gracewood Builders
Name: S Brown	Date: 22.12.25

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 19 Dec 2025 14:42:28

Project Information			
Assessed By	Daniel Smith	Building Type	Flat, End-terrace
OCDEA Registration	EES/030198	Assessment Date	2025-12-19

Dwelling Details			
Assessment Type	As built	Total Floor Area	40 m^2
Site Reference	Plot 29	Plot Reference	Plot 29
Address	Flat 7, 2 Cross Road Manchester, M21 9SU		

Client Details	
Name	Steve Brown
Company	J Greenwood (Builders) Limited
Address	Unit B9 Greengate Industrial Estate, Chadderton, M24 1SW

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	*18.77 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.01 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*100.48 kWh_{PE}/m^2*	
Dwelling primary energy	93.24 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.4 kWh/m^2*	
Dwelling fabric energy efficiency	58.6 kWh/m^2	FAIL

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*	0.13	Walls (1) (0.13)	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*	1.32	Front Window (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^2K]**
Sheltered wall: Walls (1)	26.4122	0.13 **(!)**
Party wall: Party Wall (1)	22.89	0 **(!)**
Party wall: Party Wall (2)	41.24	0 **(!)**
Exposed roof: Roof (1)	41.76	0.12
Exposed roof: Roof (2)	4.35	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^2K]**
Front Window, Window N/E	1.3668	North	1.0	1.4
Rear Window, Window S/W	19.61	South	0.7	1.3
Front Door, Door	2.121	North	N/A	1.4

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	0.169	Calculated
External wall	E3: Sill	Calculated by person with suitable expertise	0.007 **(!)**	Calculated

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 (!)	Calculated
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.089	Calculated
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.031 (!)	Calculated
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.132	Calculated
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.032 (!)	Calculated
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.12	Default 1/2
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.026 (!)	Calculated
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.171	Calculated

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	3.97 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	
Model	
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	102.83 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	0.6 W/(l/s)	OK
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Signed: [redacted]	Assessor ID: CJ06-0001
Name: Daniel Smith	Date: 22/12/2025

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Signed: [redacted] Name: SBrown	Organisation: JGreenwood Builders LTD Date: 22.12.25