

COMPLETION REPORT

for

15 NEW-BUILD DWELLINGS

at

**ABBAY HEY LANE/
BATTERSBY STREET**
Openshaw
Manchester
M11 1JW

by

LANCASTER MALONEY LIMITED

Equitas House
Unit 6 Station View
Rhino Court
Stockport
SK7 5ER

Date: December 2021
Ref: 2011/00

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(From As-Built SAPs)

1 SUMMARY/CONCLUSION

- 1.1 At design stage the development achieved an average Dwelling Emission Rate (DER) of 14.33 versus a Target Emission Rate (TER) of 17.95. This amounted to a **20.17%** improvement (DER/TER) on Building Regulations minimum criteria. This is set out in the Lancaster Maloney Energy Statement Dated November 2020; Ref: 2011/00 - Rev: A.
- 1.2 Upon completion an As-Built SAP calculation was completed for all Plots. This was based on actual air test results (as opposed to design values) and it encompasses any changes to design and/or specification that have arisen during the construction phase. The As-Built SAP for each Plot is used to generate the EPC.
- 1.3 The Building Regulations Compliance Reports for All Plots (taken from the As-Built SAPs) are attached. The DER and TER values for each plot are summarised in the attached Completion Compliance Worksheet.
- 1.4 The Completion Compliance Worksheet confirms that, As-Built, the development achieves an average Dwelling Emission Rate (DER) of 14.34 versus a Target Emission Rate (TER) of 17.95. This equates to a **20.11%** improvement (DER/TER).
- 1.5 In conclusion, the results achieved by the as-built dwellings are consistent with the results anticipated at design stage.
- 1.6 The target of 20% improvement on Building Regulations minimum criteria has been slightly exceeded.

CALCULATION SUMMARY - DESIGN STAGE

(From Energy Statement)

4 Results

Assessor Name: Steven Lancaster
Stroma Number: STRO004320
Software Name: Stroma FSAP
Software Version: Version: 1.0.5.12

Dwelling	SAP	DER	TER	DFEE	TFEE	% Improv't	Total Floor Area
Plot 1	B 86 (85.56)	14.46	18.07	39.6	54.6	19.98	94.32
Plot 2	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 3	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 4	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 5	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 6	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 7	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 8	B 86 (86.13)	13.51	16.96	35.3	48.8	20.34	94.32
Plot 9	B 86 (85.6)	14.37	18.02	39.5	54.7	20.26	94.32
Plot 10	B 86 (85.54)	14.48	18.15	40	55.3	20.22	94.32
Plot 11	B 86 (85.6)	14.37	18.02	39.5	54.7	20.26	94.32
Plot 12	B 85 (84.67)	15.75	19.76	41	57	20.29	72.13
Plot 13	B 85 (84.67)	15.75	19.76	41	57	20.29	72.13
Plot 14	B 84 (83.88)	17.23	21.86	41.1	59.2	21.18	50.1
Plot 15	B 84 (84.01)	16.99	20.51	42.8	56.4	17.16	59.9

Calculation Summary

Total Floor Area (m ²)	1,291.78
Average TER	17.95
Average DER	14.33
Average DFEE	37.78
Average TFEE	52.23
Compliance	Pass
% Improvement DER TER	20.17
% Improvement DFEE TFEE	27.67

Result:

Average 20% DER/TER improvement (rounded) on Building Regulations Part L (2013)

Average 28% DFEE/TFEE improvement (rounded) on Building Regulations Part L (2013)

CALCULATION SUMMARY - AS-BUILT

Completion Compliance WorkSheet: Abbey Hey Road - All Plots

User Details

Assessor Name: Steve Lancaster
Software Name: Stroma FSAP

Stroma Number: STRO004320
Software Version: Version: 1.0.5.50

Calculation Details

Dwelling	DER	TER	DFEE	TFEE	TFA
Plot 1	14.54	18.07	40.6	54.6	94.32
Plot 2	13.73	16.96	36.6	48.8	94.32
Plot 3	13.73	16.96	36.6	48.8	94.32
Plot 4	13.73	16.96	36.6	48.8	94.32
Plot 5	13.73	16.96	36.6	48.8	94.32
Plot 6	13.73	16.96	36.6	48.8	94.32
Plot 7	13.43	16.96	35	48.8	94.32
Plot 8	13.73	16.96	36.6	48.8	94.32
Plot 9	14.45	18.02	40.6	54.7	94.32
Plot 10	14.56	18.15	41	55.3	94.32
Plot 11	14.3	18.02	39	54.7	94.32
Plot 12	15.64	19.76	41	57	72.13
Plot 13	16.09	19.76	42.8	57	72.13
Plot 14 GF Flat	17.09	21.86	40.5	59.2	50.1
Plot 15 FF Flat	16.87	20.51	42.1	56.4	59.9

Calculation Summary

Total Floor Area	1291.78
Average TER	17.95
Average DER	14.34
Average DFEE	38.56
Average TFEE	52.23
Compliance	Pass
% Improvement DER TER	20.11
% Improvement DFEE TFEE	26.17

BUILDING REGULATIONS COMPLIANCE REPORTS
FOR ALL PLOTS
(From As-Built SAPs)

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:44

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: End-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 1 (51 Abbey Hey Lane)

Address : 51 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 18.07 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.54 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 54.6 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 40.6 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals 5.3m³/m²h (average for dwelling type)
Maximum 10.0 **OK**

4 Heating efficiency

Main Heating system: Database: (rev 486, product index 017515):
Boiler systems with radiators or underfloor heating - mains gas
Brand name: Worcester
Model: Greenstar
Model qualifier: 36CDi Compact ErP (Combi)
Efficiency 89.8 % SEDBUK2009
Minimum 88.0 % **OK**

Secondary heating system: None

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:43

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 2 (53 Abbey Hey Lane)

Address : 53 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals 5.6m³/m²h (average for dwelling type)
Maximum 10.0 **OK**

4 Heating efficiency

Main Heating system: Database: (rev 486, product index 017515):
Boiler systems with radiators or underfloor heating - mains gas
Brand name: Worcester
Model: Greenstar
Model qualifier: 36CDi Compact ErP (Combi)
Efficiency 89.8 % SEDBUK2009
Minimum 88.0 % **OK**

Secondary heating system: None

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:41

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 3 (55 Abbey Hey Lane)

Address : 55 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.6m ³ /m ² h (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:40

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 4 (57 Abbey Hey Lane)

Address : 57 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.6m ³ /m ² h (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:39

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 5 (59 Abbey Hey Lane)

Address : 59 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.6m ³ /m ² h (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:38

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 6 (61 Abbey Hey Lane)

Address : 61 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.6m ³ /m ² h (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:37

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 7 (63 Abbey Hey Lane)

Address : 63 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.43 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 35.0 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	3.60	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.6 m³/m²h
 Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:36

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Mid-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 8 (65 Abbey Hey Lane)

Address : 65 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 16.96 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.73 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 48.8 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 36.6 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.6m ³ /m ² h (average for dwelling type)	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:35

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: End-terrace House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 9 (67 Abbey Hey Lane)

Address : 67 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 18.02 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.45 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 54.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 40.6 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals 5.3m³/m²h (average for dwelling type)
Maximum 10.0 **OK**

4 Heating efficiency

Main Heating system: Database: (rev 486, product index 017515):
Boiler systems with radiators or underfloor heating - mains gas
Brand name: Worcester
Model: Greenstar
Model qualifier: 36CDi Compact ErP (Combi)
Efficiency 89.8 % SEDBUK2009
Minimum 88.0 % **OK**

Secondary heating system: None

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Windows facing: South East 0.6m²
 Windows facing: South East 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:34

Project Information:

Assessed By: Steve Lancaster (STRO004320) **Building Type:** Semi-detached House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 10 (69 Abbey Hey Lane)

Address : 69 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 18.15 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.56 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 55.3 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 41.0 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals 5.3m³/m²h (average for dwelling type)
Maximum 10.0 **OK**

4 Heating efficiency

Main Heating system: Database: (rev 486, product index 017515):
Boiler systems with radiators or underfloor heating - mains gas
Brand name: Worcester
Model: Greenstar
Model qualifier: 36CDi Compact ErP (Combi)
Efficiency 89.8 % SEDBUK2009
Minimum 88.0 % **OK**

Secondary heating system: None

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Windows facing: North West 0.6m²
 Windows facing: North West 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:33

Project Information:

Assessed By: Steve Lancaster (STRO004320) **Building Type:** Semi-detached House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 94.32m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 11 (71 Abbey Hey Lane)

Address : 71 Abbey Hey Lane, Openshaw, MANCHESTER, M11 1PX

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 18.02 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.30 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 54.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 39.0 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.16 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	3.28	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: South West 4.35m²
 Windows facing: South West 2.23m²
 Windows facing: South West 2.23m²
 Windows facing: North East 1.39m²
 Windows facing: North East 1.9m²
 Windows facing: North East 3.45m²
 Windows facing: South East 0.6m²
 Windows facing: South East 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.3 m³/m²h
 Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:32

Project Information:

Assessed By: Steve Lancaster (STRO004320) **Building Type:** Semi-detached House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 72.13m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 12 (1 Battersby Street)

Address : 1 Battersby Street, Openshaw, MANCHESTER, M11 1LY

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 19.76 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 15.64 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 57.0 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 41.0 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.15 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	3.93	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: North 3.21m²
 Windows facing: North 2.23m²
 Windows facing: North 0.6m²
 Windows facing: South 1.16m²
 Windows facing: South 1.9m²
 Windows facing: South 3.45m²
 Windows facing: East 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.9 m³/m²h
 Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:31

Project Information:

Assessed By: Steve Lancaster (STRO004320) **Building Type:** Semi-detached House

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 72.13m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 13 (3 Battersby Street)

Address : 3 Battersby Street, Openshaw, MANCHESTER, M11 1LY

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 19.76 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 16.09 kg/m²

OK

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 57.0 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 42.8 kWh/m²

OK

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.20 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.09 (max. 0.35)	OK
Openings	1.15 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals 5.9m³/m²h (average for dwelling type)
Maximum 10.0 OK

4 Heating efficiency

Main Heating system: Database: (rev 486, product index 017515):
Boiler systems with radiators or underfloor heating - mains gas
Brand name: Worcester
Model: Greenstar
Model qualifier: 36CDi Compact ErP
(Combi)
Efficiency 89.8 % SEDBUK2009
Minimum 88.0 % OK

Secondary heating system: None

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.11
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: North 3.21m²
 Windows facing: North 2.23m²
 Windows facing: North 0.6m²
 Windows facing: South 1.16m²
 Windows facing: South 1.9m²
 Windows facing: South 3.45m²
 Windows facing: West 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:30

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Flat

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 50.1m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 14 (Flat 1, 21 Battersby Stre

Address : Flat 1, 21 Battersby Street, MANCHESTER, M11 1LY

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 21.86 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 17.09 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 59.2 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 40.5 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.11 (max. 0.70)	OK
Roof	(no roof)		
Openings	1.17 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	3.13	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Slight **OK**

Based on:

Overshading: Average or unknown
 Windows facing: North 2.07m²
 Windows facing: East 2.07m²
 Windows facing: South East 2.07m²
 Windows facing: South West 3.21m²
 Windows facing: South West 1.23m²
 Windows facing: South West 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.1 m³/m²h
 Doors U-value 1 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K

Regulations Compliance Report

Approved Document L1A, 2013 Edition, England assessed by Stroma FSAP 2012 program, Version: 1.0.5.50
Printed on 14 December 2021 at 10:59:30

Project Information:

Assessed By: Steve Lancaster (STRO004320)

Building Type: Flat

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 59.9m²

Site Reference : Abbey Hey Road

Plot Reference: Plot 15 (Flat 2, 21 Battersby Stre

Address : Flat 2, 21 Battersby Street, MANCHESTER, M11 1LY

Client Details:

Name: Wiggett Construction Ltd

Address : Viking House, 449 Middleton Road, Chadderton, Oldham, OL9 9LB

This report covers items included within the SAP calculations.

It is not a complete report of regulations compliance.

1a TER and DER

Fuel for main heating system: Mains gas

Fuel factor: 1.00 (mains gas)

Target Carbon Dioxide Emission Rate (TER) 20.51 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 16.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 56.4 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 42.1 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.18 (max. 0.30)	0.18 (max. 0.70)	OK
Party wall	0.00 (max. 0.20)	-	OK
Floor	0.11 (max. 0.25)	0.11 (max. 0.70)	OK
Roof	0.09 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.17 (max. 2.00)	1.20 (max. 3.30)	OK

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	3.02	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 486, product index 017515): Boiler systems with radiators or underfloor heating - mains gas Brand name: Worcester Model: Greenstar Model qualifier: 36CDi Compact ErP (Combi) Efficiency 89.8 % SEDBUK2009 Minimum 88.0 %	OK
Secondary heating system:	None	

Regulations Compliance Report

5 Cylinder insulation

Hot water Storage: No cylinder

6 Controls

Space heating controls TTZC by plumbing and electrical services **OK**
 Hot water controls: No cylinder thermostat

No cylinder
 Boiler interlock: Yes **OK**

7 Low energy lights

Percentage of fixed lights with low-energy fittings 100.0%
 Minimum 75.0% **OK**

8 Mechanical ventilation

Continuous extract system (decentralised)
 Specific fan power: 0.09 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**

Based on:

Overshading: Average or unknown
 Windows facing: North 2.07m²
 Windows facing: East 2.07m²
 Windows facing: South East 2.07m²
 Windows facing: South West 3.21m²
 Windows facing: South West 1.23m²
 Windows facing: South West 0.6m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.0 m³/m²h
 Doors U-value 1 W/m²K
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K