

COMPLETION REPORT

for

14 NEW-BUILD DWELLINGS

at

LINN STREET
Crumpsall
Manchester
M8 5SN

by

LANCASTER MALONEY LIMITED

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

Date: February 2022
Ref: 2202/05

CONTENTS

- 1 SUMMARY/CONCLUSION
- 2 CALCULATION SUMMARY - DESIGN STAGE (From Energy Statement)
- 3 CALCULATION SUMMARY - AS-BUILT
- 4 BUILDING REGULATIONS COMPLIANCE REPORTS FOR ALL PLOTS
(From As-Built SAPs)

1 SUMMARY/CONCLUSION

- 1.1 At design stage the development achieved an average Dwelling Emission Rate (DER) of 14.09 versus a Target Emission Rate (TER) of 17.48. This amounted to a **19.39%** improvement (DER/TER) on Building Regulations minimum criteria. This is set out in the Lancaster Maloney Energy Statement Dated September 2020; Ref: 2009/00.
- 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 14.25 versus a Target Emission Rate (TER) of 17.73. This equates to a **19.63%** 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 19% 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: 1.0.4.26

Dwelling	SAP	DER	TER	DFEE	TFEE	% Improv't	Total Floor Area
Plot 1	B 86	13.8	17.25	38.6	52.4	20	98.7
Plot 2	B 86	13.9	17.21	38.8	51.9	19.23	98.7
Plot 3	B 86	13.8	17.25	38.6	52.4	20	98.7
Plot 4	B 86	13.9	17.21	38.8	51.9	19.23	98.7
Plot 5	B 85	15.28	18.8	45.6	60.9	18.72	98.7
Plot 6	B 86	13.98	17.26	39.8	52.8	19	98.7
Plot 7	B 86	13.95	17.38	39.9	53.6	19.74	98.7
Plot 8	B 86	13.95	17.38	39.9	53.6	19.74	98.7
Plot 9	B 86	13.98	17.26	39.8	52.8	19	98.7
Plot 10	B 85	15.28	18.8	45.6	60.9	18.72	98.7
Plot 11	B 86	13.9	17.21	38.8	51.9	19.23	98.7
Plot 12	B 86	13.8	17.25	38.6	52.4	20	98.7
Plot 13	B 86	13.9	17.21	38.8	51.9	19.23	98.7
Plot 14	B 86	13.8	17.25	38.6	52.4	20	98.7

Calculation Summary

Total Floor Area	1381.80
Average TER	17.48
Average DER	14.09
Average DFEE	40.01
Average TFEE	53.70
Compliance	Pass
% Improvement DER TER	19.39
% Improvement DFEE TFEE	25.49

Result:

Average 19% DER/TER improvement (rounded) on Building Regulations Part L (2013)

Average 25% DFEE/TFEE improvement (rounded) on Building Regulations Part L (2013)

CALCULATION SUMMARY - AS-BUILT

Compliance WorkSheet: Linn Street

User Details

Assessor Name: Steve Lancaster **Stroma Number:** STRO004320
Software Name: Stroma FSAP **Software Version:** Version: 1.0.5.51

Calculation Details

Dwelling	DER	TER	DFEE	TFEE	TFA
Plot 1	13.87	17.35	38.1	51.9	98.75
Plot 2	13.87	17.32	37.8	51.4	98.75
Plot 3	13.87	17.35	38.1	51.9	98.75
Plot 4	14.02	17.53	39.7	53.7	98.75
Plot 5	15.76	19.39	47	62.7	97.869
Plot 6	14.14	17.53	39.7	53	98.75
Plot 7	14.21	17.65	40.3	53.9	98.75
Plot 8	14.21	17.65	40.3	53.9	98.75
Plot 9	14.14	17.53	39.7	53	98.75
Plot 10	15.76	19.39	47	62.7	97.869
Plot 11	14.02	17.53	39.9	53.7	98.75
Plot 12	13.87	17.35	38.3	51.9	98.75
Plot 13	13.87	17.32	38	51.4	98.75
Plot 14	13.87	17.35	38.3	51.9	98.75

Calculation Summary

Total Floor Area	1380.74
Average TER	17.73
Average DER	14.25
Average DFEE	40.15
Average TFEE	54.06
Compliance	Pass

Block Compliance WorkSheet: Linn StreetCont...

% Improvement DER TER	19.63
% Improvement DFEE TFEE	25.73

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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: 1.0.5.51
Printed on 14 February 2022 at 12:20:16

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 1

Address : 12 Linn Street, MANCHESTER, M8 5SN

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) 17.35 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 38.1 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.70	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

Overheating risk (West Pennines): Not significant **OK**
 Based on:
 Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: West 0.73m²
 Windows facing: West 0.73m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.7 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:14

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 2

Address : 10 Linn Street, MANCHESTER, M8 5SN

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) 17.32 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.4 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 37.8 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.30 (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	3.70	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.7 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:13

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 3

Address : 8 Linn Street, MANCHESTER, M8 5SN

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) 17.35 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 38.1 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.70	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: West 0.73m²
 Windows facing: West 0.73m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.7 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:12

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 4

Address : 1 Settle Close, MANCHESTER, M8 5ES

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) 17.53 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.02 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 39.7 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.70	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: East 0.71m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 3.7 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:11

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 97.87m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 5

Address : 3 Settle Close, MANCHESTER, M8 5ES

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) 19.39 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 15.76 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 62.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 47.0 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.11 (max. 0.25)	0.11 (max. 0.70)	OK
Roof	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.90	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: North 0.73m²
 Windows facing: North 0.73m²
 Windows facing: West 0.56m²
 Windows facing: West 1.24m²
 Windows facing: West 5.24m²
 Roof windows facing: West 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Thermal bridging 0.033 W/m²K
 Air permeability 3.9 m³/m²h
 Roofs U-value 0.09 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:10

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 6

Address : 5 Settle Close, MANCHESTER, M8 5ES

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) 17.53 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.14 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.0 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 39.7 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.30 (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	3.92	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: West 0.56m²
 Windows facing: West 1.24m²
 Windows facing: West 5.24m²
 Roof windows facing: West 0.92m²
 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
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:10

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 7

Address : 7 Settle Close, MANCHESTER, M8 5ES

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) 17.65 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.21 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 40.3 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.92	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 2.16m²
 Windows facing: East 0.97m²
 Windows facing: East 0.97m²
 Windows facing: North 0.73m²
 Windows facing: North 0.73m²
 Windows facing: West 0.56m²
 Windows facing: West 1.24m²
 Windows facing: West 5.24m²
 Roof windows facing: West 0.92m²
 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
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:09

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 8

Address : 8 Settle Close, MANCHESTER, M8 5ES

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) 17.65 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.21 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 40.3 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.98	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: North 0.73m²
 Windows facing: North 0.73m²
 Windows facing: East 0.56m²
 Windows facing: East 1.24m²
 Windows facing: East 5.24m²
 Roof windows facing: East 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:08

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 9

Address : 6 Settle Close, MANCHESTER, M8 5ES

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) 17.53 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.14 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.0 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 39.7 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.30 (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	3.98	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: East 0.56m²
 Windows facing: East 1.24m²
 Windows facing: East 5.24m²
 Roof windows facing: East 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:07

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 97.87m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 10

Address : 4 Settle Close, MANCHESTER, M8 5ES

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) 19.39 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 15.76 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 62.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 47.0 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (max. 0.70)	OK
Floor	0.11 (max. 0.25)	0.11 (max. 0.70)	OK
Roof	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.90	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 2.16m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: North 0.73m²
 Windows facing: North 0.73m²
 Windows facing: East 0.56m²
 Windows facing: East 1.24m²
 Windows facing: East 5.24m²
 Roof windows facing: East 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Thermal bridging 0.033 W/m²K
 Air permeability 3.9 m³/m²h
 Roofs U-value 0.09 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:06

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 11

Address : 2 Settle Close, MANCHESTER, M8 5ES

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) 17.53 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 14.02 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 53.7 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 39.9 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.97	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.97m²
 Windows facing: West 0.71m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:05

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 12

Address : 6 Linn Street, MANCHESTER, M8 5SN

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) 17.35 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 38.3 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.97	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: East 0.73m²
 Windows facing: East 0.73m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:05

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 13

Address : 4 Linn Street, MANCHESTER, M8 5SN

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) 17.32 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.4 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 38.0 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.27 (max. 2.00)	1.30 (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	3.97	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 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: 1.0.5.51
Printed on 14 February 2022 at 12:20:04

Project Information:

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

Dwelling Details:

NEW DWELLING AS BUILT

Total Floor Area: 98.75m²

Site Reference : Linn St, Crumpsall

Plot Reference: Plot 14

Address : 2 Linn Street, MANCHESTER, M8 5SN

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) 17.35 kg/m²

Dwelling Carbon Dioxide Emission Rate (DER) 13.87 kg/m² **OK**

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE) 51.9 kWh/m²

Dwelling Fabric Energy Efficiency (DFEE) 38.3 kWh/m² **OK**

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.17 (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	0.10 (max. 0.20)	0.15 (max. 0.35)	OK
Openings	1.28 (max. 2.00)	1.30 (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	3.97	
Maximum	10.0	OK

4 Heating efficiency

Main Heating system:	Database: (rev 490, product index 017953): Boiler systems with radiators or underfloor heating - mains gas Brand name: Vaillant Model: ecoTEC exclusive 835 Model qualifier: VUW 356/5-7 (H-GB) (Combi) Efficiency 89.7 % 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: 0.12 0.11 0.09
 Maximum 0.7 **OK**

9 Summertime temperature

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

Based on:

Overshading: Average or unknown
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 2.16m²
 Windows facing: South 0.97m²
 Windows facing: South 0.97m²
 Windows facing: East 0.73m²
 Windows facing: East 0.73m²
 Windows facing: North 0.56m²
 Windows facing: North 1.24m²
 Windows facing: North 5.24m²
 Roof windows facing: North 0.92m²
 Ventilation rate: 4.00
 Blinds/curtains: Dark-coloured curtain or roller blind
 Closed 50% of daylight hours

10 Key features

Air permeability 4.0 m³/m²h
 Roofs U-value 0.09 W/m²K
 Party Walls U-value 0 W/m²K
 Floors U-value 0.11 W/m²K