

dewpoint.

Energy Services Ltd



SAP Report Submission for Building Regulations Compliance

Client: Kapex Construction Ltd

Project: Flat 34, Salters Road
Gosforth , Newcastle , NE3 4DU

Contact: Christopher Luke
Dewpoint Energy Services Ltd
cluke@dewpointenergy.co.uk

Report Issue Date: 01/09/2020

EXCELLENCE
IN ENERGY
ASSESSMENT

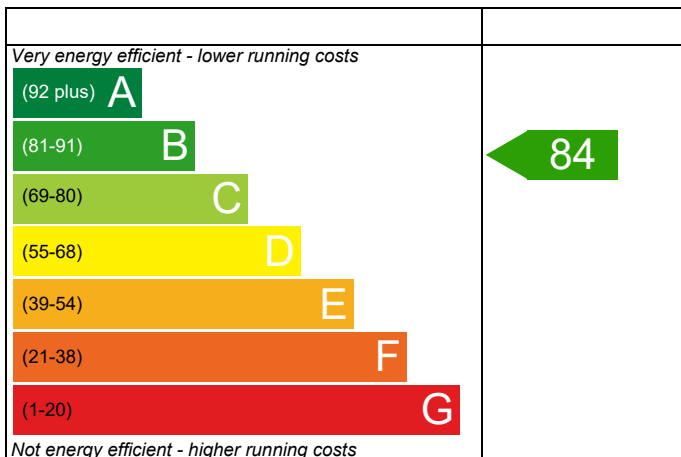
Flat 34, Salters Road ,
Gosforth ,
Newcastle ,
NE3 4DU

Dwelling type: Flat, End-Terrace
Date of assessment: 01/09/2020
Produced by: Dewpoint Energy Services Ltd
Total floor area: 88.32 m²
DRRN: 9042-8149-0083

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

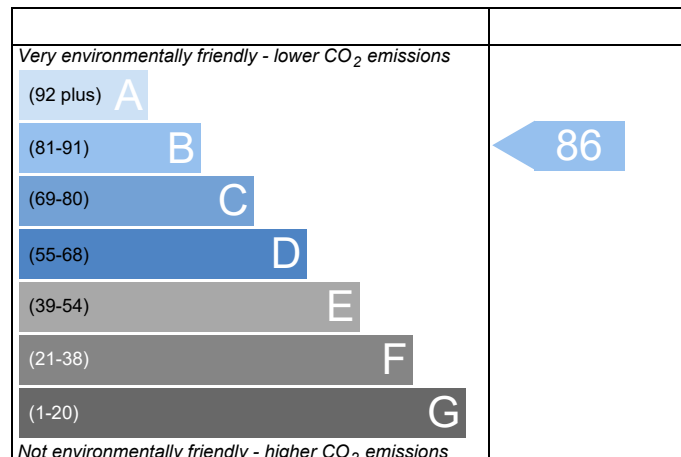
Energy Efficiency Rating



England EU Directive 2002/91/EC

The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO₂) Rating



England EU Directive 2002/91/EC

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating the less impact it has on the environment.

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.



BUILDING REGULATION COMPLIANCE

Calculation Type: New Build (As Designed)

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020	
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat		
Property	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU				
SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		
Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk			Assessor ID	L785-0001
Client	Mr Ian Conn, Kapex Construction				

SUMMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Mains gas			
Fuel factor	1.00 (mains gas)			
Target Carbon Dioxide Emission Rate (TER)	18.07	kgCO ₂ /m ²		
Dwelling Carbon Dioxide Emission Rate (DER)	17.64	kgCO ₂ /m ²		Pass
	-0.43 (-2.4%)	kgCO ₂ /m ²		

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	54.01	kWh/m ² /yr		
Dwelling Fabric Energy Efficiency (DFEE)	44.51	kWh/m ² /yr		Pass
	-9.5 (-17.6%)	kWh/m ² /yr		

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.13 (max. 0.30)	0.21 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Roof	0.12 (max. 0.20)	0.17 (max. 0.35)	Pass
Openings	1.40 (max. 2.00)	1.40 (max. 3.30)	Pass

2a Thermal bridging

Thermal bridging calculated from linear thermal transmittances for each junction

3 Air permeability

Air permeability at 50 pascals	5.00 (design value)	m ³ /(h.m ²) @ 50 Pa	
Maximum	10.0	m ³ /(h.m ²) @ 50 Pa	Pass

Limiting System Efficiencies

4 Heating efficiency

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.

BUILDING REGULATION COMPLIANCE

Calculation Type: New Build (As Designed)

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Ideal LOGIC HEAT H24 Efficiency: 89.8% SEDBUK2009 Minimum: 88.0%	Pass
Secondary heating system	None	

5 Cylinder insulation

Hot water storage	Nominal cylinder loss: 1.95 kWh/day Permitted by DBSCG 2.24	Pass
Primary pipework insulated	Yes	Pass

6 Controls

Space heating controls	Programmer, room thermostat and TRVs	Pass
Hot water controls	Cylinderstat	Pass
	Independent timer for DHW	Pass
Boiler interlock	Yes	Pass

7 Low energy lights

Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass

8 Mechanical ventilation

Continuous extract system (decentralised)		
Specific fan power	0.2000 0.1900	
Maximum	0.7	Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (North East England)	Not significant	Pass
Based on:		
Overshading	Average	
Windows facing South East	8.14 m ² , No overhang	
Windows facing North West	5.79 m ² , No overhang	
Air change rate	3.00 ach	
Blinds/curtains	None	

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value	W/m ² K	
Filled Cavity with Edge Sealing	0.00		Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	5.00 (design value)	m ³ /(h.m ²) @ 50 Pa	
Maximum	10.0	m ³ /(h.m ²) @ 50 Pa	Pass

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.

BUILDING REGULATION COMPLIANCE

Calculation Type: New Build (As Designed)

10 Key features

External wall U-value	0.13	W/m ² K
Party wall U-value	0.00	W/m ² K
Roof U-value	0.10	W/m ² K

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.



U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat	
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU			
Calculation Type	New Build (As Designed)			

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
Client	Mr Ian Conn, Kapex Construction		

Building Elements

Roof Dorma Flat Roof - Flat roof insulation between timber joists

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Zinc Main construction	0.7	113.0000	0.0000	100.00
Layer 2	WBP plywood Main construction	18	0.1300	0.1385	100.00
Layer 3	Ventilated cavity / timber battens Main construction	50	0.3125	0.1600	88.89
	Main construction	50	0.1300	0.3846	11.11
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 4	Xtratherm (FR/ALU) insulation Main construction	110	0.0220	5.0000	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 5	WBP Plywood Main construction	18	0.1300	0.1385	100.00
Layer 6	Air gap / timber roof structure & firrings Main construction	110	0.6875	0.1600	100.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 7	Gyproc Wallboard (12.5mm) Main construction	12.5	0.1900	0.0658	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Int surface				0.1000	

Total resistance: Upper limit = 5.827 m² K/W Lower limit = 5.814 m² K/W Average = 5.820 m² K/W
Total correction = 0.0000 m² K/W U-value (unrounded) = 0.17 W/m² K

Unheated space: None

Total thickness: 319 mm

U-value: 0.17 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat	
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU			
Calculation Type	New Build (As Designed)			

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
------------------	---	-------------	-----------

Client	Mr Ian Conn, Kapex Construction
--------	---------------------------------

Building Elements

Roof Warm Roof - pitched roof - insulated slope, sloping

Roof Type: Pitched Roof, insulated sloping ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.1000	
Layer 1	Slate				
	Main construction	10	2.2000	0.0000	100.00
Layer 2	Air layer ventilated				
	Main construction	66	0.2500	0.0000	100.00
	Corrections - Cavity Ventilated, Emissivity: Normal				
Layer 3	Xtratherm (XT/SK) insulation				
	Main construction	125	0.0220	5.6818	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 4	Xtratherm (XT/PR) insulation / Rafters				
	Main construction	100	0.0220	4.5453	91.67
	Main construction	100	0.1300	0.7692	8.33
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 5	Air gap / Rafters				
	Main construction	100	0.6250	0.1600	91.67
	Main construction	100	0.1300	0.7692	8.33
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 6	Gyproc Wallboard (12.5mm)				
	Main construction	12.5	0.1900	0.0658	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Int surface				0.1000	

Total resistance: Upper limit = 10.236 m² K/W Lower limit = 9.345 m² K/W Average = 9.790 m² K/W
Total correction = 0.0000 m² K/W U-value (unrounded) = 0.1 W/m² K

Unheated space: None

Total thickness: 414 mm

U-value: 0.10 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat	
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU			
Calculation Type	New Build (As Designed)			

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
------------------	---	-------------	-----------

Client	Mr Ian Conn, Kapex Construction
--------	---------------------------------

Building Elements

Roof Warm Roof Hrz Ceiling - Pitched roof- insulated slope, flat ceiling

Roof Type: Pitched Roof, insulated slope, flat ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0306	
Layer 1	Xtratherm (XT/SK) insulation				
	Main construction	125	0.0220	4.3525	100.00
Layer 2	Xtratherm (XT/PR) insulation / Rafters				
	Main construction	100	0.0220	3.4820	91.67
	Main construction	100	0.1400	0.5472	8.33
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 3	Air gap / Rafters				
	Main construction	100	1.2500	0.0613	91.67
	Main construction	100	0.1300	0.5893	8.33
	Corrections - Cavity Slightly ventilated, Openings Area: 1000 mm, Emissivity: Normal				
Layer 4	Roof space				
	Main construction	0	0.2000	0.2000	100.00
Layer 5	Gyproc Wallboard (12.5mm)				
	Main construction	12.5	0.1900	0.0658	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Int surface				0.1000	

Total resistance:	Upper limit = 7.972 m ² K/W	Lower limit = 7.222 m ² K/W	Average = 7.597 m ² K/W
	Total correction = 0.0030 m ² K/W	U-value (unrounded) = 0.13 W/m ² K	

Unheated space: None

Total thickness: 338 mm

U-value: 0.13 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat	
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU			
Calculation Type	New Build (As Designed)			

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
------------------	---	-------------	-----------

Client	Mr Ian Conn, Kapex Construction
--------	---------------------------------

Building Elements

Wall External Wall - Masonry wall full cavity fill-slabs

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Brick, outer leaf				
	Main construction	102.5	0.7700	0.1331	100.00
Layer 2	Standard cavity				
	Main construction	5	0.0909	0.0550	100.00
	Corrections - Cavity Slightly ventilated, Openings Area: 1000 mm, Emissivity: Normal				
Layer 3	Xtratherm (CT/PIR) insulation				
	Main construction	145	0.0210	6.9048	100.00
	Corrections - Air Gap: Level 0, Fasteners: Wall ties, Cross sectional area: 80.00 mm ² , Lambda: 17.000 W/m.K, per m ² : 2.500				
Layer 4	Thomas Armstrong Insulite block				
	Main construction	100	0.4900	0.2041	93.43
	Main construction	100	0.8803	0.1136	6.57
Layer 5	airspace/plaster dabs				
	Main construction	15	0.0882	0.1700	80.00
	Main construction	15	0.0882	0.1700	20.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 6	Gyproc Wallboard (12.5mm)				
	Main construction	12.5	0.1900	0.0658	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Int surface				0.1300	

Total resistance: Upper limit = 7.697 m² K/W Lower limit = 7.693 m² K/W Average = 7.695 m² K/W
Total correction = 0.0000 m² K/W U-value (unrounded) = 0.13 W/m² K

Unheated space: None

Total thickness: 380 mm

U-value: 0.13 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34	Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU		
Calculation Type	New Build (As Designed)		

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
------------------	---	-------------	-----------

Client	Mr Ian Conn, Kapex Construction
--------	---------------------------------

Building Elements

Wall Dorma Cheeks - Timber framed insulation between studs

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Zinc				
	Main construction	0.7	113.0000	0.0000	100.00
Layer 2	WBP plywood				
	Main construction	18	0.1300	0.1385	100.00
Layer 3	Air gap / timber battens				
	Main construction	38	0.4222	0.0900	88.89
	Main construction	38	0.1300	0.2923	11.11
	Corrections - Cavity Slightly ventilated, Openings Area: 1000 mm, Emissivity: Normal				
Layer 4	WBP Plywood				
	Main construction	18	0.1300	0.1385	100.00
Layer 5	Xtratherm (XT/TF) insulation/timber frame				
	Main construction	120	0.0220	5.4545	88.89
	Main construction	120	0.1200	1.0000	11.11
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 6	Air gap / timber frame				
	Main construction	20	0.1143	0.1750	88.89
	Main construction	20	0.1300	0.1538	11.11
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 7	Plasterboard, standard				
	Main construction	12.5	0.1900	0.0658	100.00
Int surface				0.1300	

Total resistance:	Upper limit = 4.901 m ² K/W	Lower limit = 4.431 m ² K/W	Average = 4.666 m ² K/W
	Total correction = 0.0000 m ² K/W	U-value (unrounded) = 0.21 W/m ² K	

Unheated space:	None	
Total thickness: 227 mm	U-value: 0.21 W/m² K	Kappa: n/a

U-VALUE CALCULATOR REPORT

Property Reference	20103 - Flat 34		Issued on Date	01/09/2020
Assessment Reference	20103 - Flat 34	Prop Type Ref	SF Flat	
Project	Flat 34, Salters Road , Gosforth , Newcastle , NE3 4DU			
Calculation Type	New Build (As Designed)			

SAP Rating	84 B	DER	17.64	TER	18.07
Environmental	86 B	% DER<TER	2.39		
CO ₂ Emissions (t/year)	1.42	DFEE	44.51	TFEE	54.01
General Requirements Compliance	Pass	% DFEE<TFEE	17.60		

Assessor Details	Mr. Christopher Luke, Dewpoint Energy Services Ltd, Tel: 01740 669162, cluke@dewpointenergy.co.uk	Assessor ID	L785-0001
------------------	---	-------------	-----------

Client	Mr Ian Conn, Kapex Construction
--------	---------------------------------

Building Elements

Wall External Wall (Cladding) - Masonry wall full cavity fill-slabs

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Timber cladding				
	Main construction	22	0.1300	0.1692	100.00
Layer 2	Standard cavity / sw timber battens				
	Main construction	25	0.1389	0.1800	88.89
	Main construction	25	0.1300	0.1923	11.11
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 3	Thomas Armstrong Insulite block				
	Main construction	100	0.5400	0.1852	93.43
	Main construction	100	0.8803	0.1136	6.57
Layer 4	Standard cavity				
	Main construction	5	0.0909	0.0550	100.00
	Corrections - Cavity Slightly ventilated, Openings Area: 1000 mm, Emissivity: Normal				
Layer 5	Xtratherm (CT/PIR) insulation				
	Main construction	95	0.0210	4.5238	100.00
	Corrections - Air Gap: Level 0, Fasteners: Wall ties, Cross sectional area: 80.00 mm ² , Lambda: 17.000 W/m.K, per m ² : 2.500				
Layer 6	Thomas Armstrong Insulite block				
	Main construction	100	0.4900	0.2041	93.43
	Main construction	100	0.8803	0.1136	6.57
Layer 7	airspace/plaster dabs				
	Main construction	15	0.0882	0.1700	80.00
	Main construction	15	0.0882	0.1700	20.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 8	Gyproc Wallboard (12.5mm)				
	Main construction	12.5	0.1900	0.0658	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Int surface				0.1300	

Total resistance:	Upper limit = 5.714 m ² K/W	Lower limit = 5.707 m ² K/W	Average = 5.710 m ² K/W
	Total correction = 0.0000 m ² K/W	U-value (unrounded) = 0.18 W/m ² K	

U-VALUE CALCULATOR REPORT

Unheated space: None

Total thickness: 375 mm

U-value: 0.18 W/m² K

Kappa: n/a