



SAP Report Submission for Building Regulations Compliance

Client: Amir Torkaman C/O ACA Architectural Design

Project: Replacement Dwelling, 32, Valley Road
Chandlers Ford, Eastleigh, Hampshire, SO53 1GP

Contact: Mark Rogers
Surecalc Limited
mark@surecalc.co.uk

Report Issue Date: 10/09/2025

EXCELLENCE
IN ENERGY
ASSESSMENT

CODE FOR SUSTAINABLE HOMES

Calculation Type: New Build (As Designed)



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Property	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
------------------	--	-------------	-----------

Client	Amrik Chahal, ACA Architectural Design
--------	--

ENE 1 - Dwelling Emission Rate calculation

Total floor area	225.26	m ²	
DER	12.18	kgCO ₂ /yr/m ²	
TER	20.98	kgCO ₂ /yr/m ²	
CO ₂ emissions offset from additional allowable electricity generation	0.00	kgCO ₂ /yr/m ²	(ZC7)
Residual CO ₂ emissions offset from biofuel CHP	0.00	kgCO ₂ /yr/m ²	(ZC5)
Total CO ₂ emissions offset from SAP Section 16 allowances	0.00	kgCO ₂ /yr/m ²	
DER accounting for SAP Section 16 allowances	12.18	kgCO ₂ /yr/m ²	
Reduction DER/TER	41.94	%	
CfSH ENE1 credits achieved	4.8		
CfSH ENE1 level achieved	4		

ENE 2 – Fabric Energy Efficiency calculation

Dwelling type	House, Detached
Fabric energy efficiency (F.E.E.)	43.40 kWh/m ² /yr
CfSH ENE2 credits achieved	7.6
CfSH ENE1 and 2 overall level achieved	4

ENE 7 – Low and Zero Carbon Technologies calculation

Standard case CO₂ emissions

Total floor area	225.26	m ²	
DER	15.25	kgCO ₂ /yr/m ²	
CO ₂ emissions from electrical appliances	10.38	kgCO ₂ /yr/m ²	(ZC2)
CO ₂ emissions from cooking	0.85	kgCO ₂ /yr/m ²	(ZC3)
Standard case total CO ₂ emissions	26.48	kgCO ₂ /yr/m ²	(ZC4)
Net Standard case CO ₂ emissions	26.48	kgCO ₂ /yr/m ²	(ZC8)

Actual case CO₂ emissions

DER	12.30	kgCO ₂ /yr/m ²	
CO ₂ emissions from electrical appliances	10.38	kgCO ₂ /yr/m ²	(ZC2)
CO ₂ emissions from cooking	0.85	kgCO ₂ /yr/m ²	(ZC3)
Actual case total CO ₂ emissions	23.53	kgCO ₂ /yr/m ²	(ZC4)
CO ₂ emissions from Biomass	0.00	kgCO ₂ /yr/m ²	(ZC5)
CO ₂ reduction from additional allowable electricity generation	0.00	kgCO ₂ /yr/m ²	(ZC7)
Net Actual case CO ₂ emissions	23.53	kgCO ₂ /yr/m ²	(ZC8)
Improvement in net actual/net standard case CO ₂ emissions	11	%	

CODE FOR SUSTAINABLE HOMES
Calculation Type: New Build (As Designed)



ENE7 credits achieved

1

Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 10 Sep 2025 15:30:44

Project Information			
Assessed By	Mark Rogers	Building Type	House, Detached
OCDEA Registration	EES/004179	Assessment Date	2025-09-10

Dwelling Details			
Assessment Type	As designed	Total Floor Area	225 m ²
Site Reference	sc100492 32 Valley Road	Plot Reference	001
Address	32 Replacement Dwelling Valley Road, Eastleigh, SO53 1GP		

Client Details	
Name	Amrik Chahal
Company	ACA Architectural Design
Address	N/A, N/A, N/A

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate			
Fuel for main heating system	Electricity		
Target carbon dioxide emission rate	6.63 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.46 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	35.93 kWh _{PE} /m ²		
Dwelling primary energy	35.92 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	39.7 kWh/m ²		
Dwelling fabric energy efficiency	39.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (5) (0.25)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.13	Over Garage (0.21)	OK
Roofs	0.16	0.11	Roof (3) (0.14)	OK
Windows, doors, and roof windows	1.6	1.23	FR Rooflight (1.7)	OK
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	Net area [m ²]	U-Value [W/m ² K]
Exposed wall: Walls (1)	103.51	0.17
Sheltered wall: Walls (2)	22.59	0.21
Exposed wall: Walls (3)	16.96	0.17
Sheltered wall: Walls (4)	30.24	0.17
Sheltered wall: Walls (5)	1	0.25
Ground floor: Ground Floor, Ground Floor	112.08	0.12
Upper floor: Over Garage, Over Garage	19.35	0.21
Exposed roof: Roof (1)	82.92	0.09 (!)
Exposed roof: Roof (2)	37.88	0.12
Exposed roof: Roof (3)	30.65	0.14

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front NW Door, New Dwell Composite Door	1.98	North West	N/A	1.2
Front NW Window, New Dwelling DG Window	1.28	North West	0.7	1.2
Front NW Windows, New Dwelling DG Window	4.32	North West	0.7	1.2
Front NW Windows, New Dwelling DG	4.32	North West	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Window				
Front NW Roof Window, New Dwell DG Roof Window	1.61	North West	0.7	1.2
Side SW Door, New Dwell Composite Door	1.84	South West	N/A	1.2
Side SW Window, New Dwelling DG Window	1.66	South West	0.7	1.2
Garage Fire Door, New Dwelling Fire Door	1.84	South West	N/A	1.49
Side NE Windows, New Dwelling DG Window	6.48	North East	0.7	1.2
FR Rooflight, New Dwelling DG Rooflight	2	Horizontal	0.7	1.7
Rear SE Roof Window, New Dwell DG Roof Window	0.76	South East	0.7	1.2
Rear SE Windows, New Dwelling DG Window	4.32	South East	0.7	1.2
Rear SE French Doors, New Dwell DG French Doors	3.78	South East	0.7	1.2
Rear SE Glazed Doors, New Dwell DG Glazed Doors	12.5	South East	0.7	1.2

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction				
Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.066	Keystone Hi Therm + Lintel Det
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.02 (!)	AutoPSI TF Detail
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.087	AutoPSI Detail
External wall	E3: Sill	Calculated by person with suitable expertise	0.023 (!)	Recognised Construction Detail
External wall	E3: Sill	Calculated by person with suitable expertise	0.039 (!)	AutosPSI TF Detail
External wall	E4: Jamb	Calculated by person with suitable expertise	0.018 (!)	Recognised Construction Detail
External wall	E4: Jamb	Calculated by person with suitable expertise	0.068	AutoPSI TF Detail
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.055	Recognised Construction Detail
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	Recognised Construction Detail
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 (!)	Recognised Construction Detail
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.039 (!)	Recognised Construction Detail
External wall	E14: Flat roof	SAP table default	0.16	
Roof	R11: Upstands or kerbs of rooflights	SAP table default	0.24	FR Rooflight Upstand
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 (!)	AutoPSI Detail
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.04	Recognised Construction Detail

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.082	Recognised Construction Detail
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Recognised Construction Detail

3 Air permeability (better than typically expected values are flagged with a subsequent (!))			
Maximum permitted air permeability at 50Pa	8 m ³ /hm ²		
Dwelling air permeability at 50Pa	5 m ³ /hm ² , Design value		OK
Air permeability test certificate reference			

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	259.6%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Daikin Europe NV
Model	EBLA09DA3V3
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	250 litres
Declared heat loss	2.1 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	75 lm/W	
Lowest light source efficacy	210 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.17 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Unity CV2.1	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.		
Signed:	<i>Mark Rogers</i>	Assessor ID: EES/004175
Name:	Mark Rogers	Date: 10.09.2025
b. Client Declaration		
N/A		

Predicted Energy Assessment



Replacement Dwelling, 32, Valley Road, Eastleigh,
Hampshire, SO53 1GP

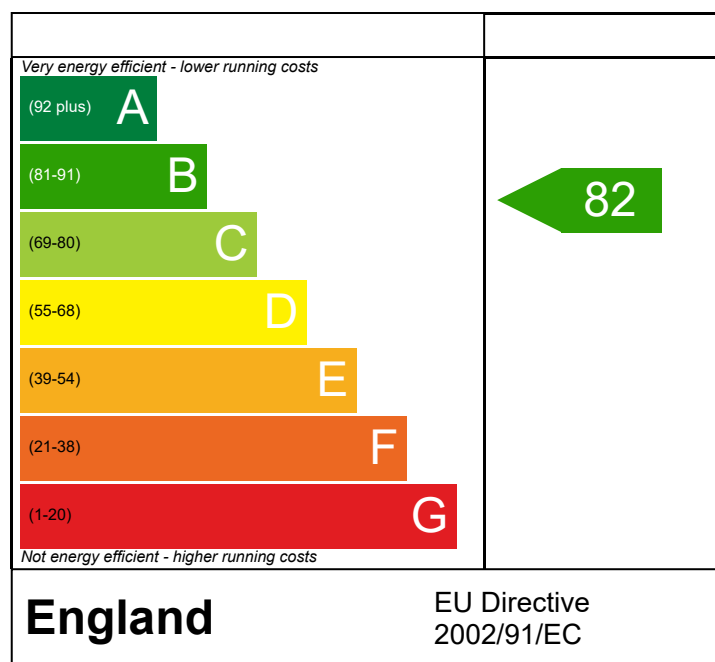
Dwelling type:
Date of assessment:
Produced by:
Total floor area:
DRRN:

House, Detached
10/09/2025
Mark Rogers
249.58 m²
2420-2801-9250

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.

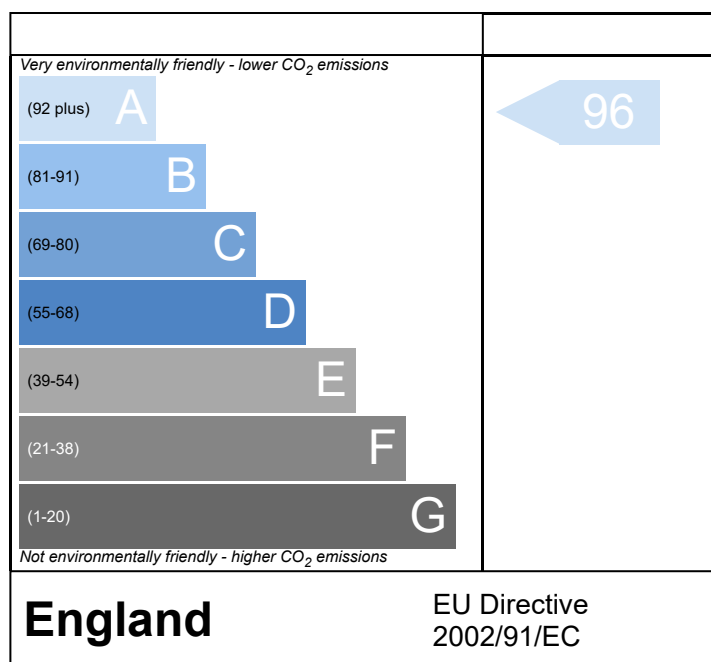
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



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



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.

Summary for Input Data

Property Reference	sc100492 32 Valley Road		Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021	
Property	Replacement Dwelling, 32, Valley Road, Eastleigh, Hampshire, SO53 1GP			

SAP Rating	82 B	DER	3.46	TER	6.63
Environmental	96 A	% DER < TER			47.81
CO ₂ Emissions (t/year)	0.68	DFEE	39.47	TFEE	39.71
Compliance Check	See BREL	% DFEE < TFEE			0.59
% DPER < TPER	0.04	DPER	35.92	TPER	35.93

Assessor Details	Mr. Mark Rogers	Assessor ID	A320-0001
Client	ACA Architectural Design, Amrik Chahal		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Northwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	1.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Unheated Space Floor Area	Average Storey Height
Ground floor:	52.56 m	131.43 m²	24.32 m²	2.40 m
1st Storey:	44.74 m	93.83 m²		2.42 m

8.0 Living Area	20.23	m²
-----------------	-------	----

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Cavity Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.17	60.00	137.35	103.51	0.00	None	33.84	Enter Gross Area
Cavity Wall to Garage	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	24.43	22.59	0.68	Garage Single 1 Inside	1.84	Enter Gross Area
External Dormer TF Walls	Timber Frame	Other	0.17	18.00	25.60	16.96	0.00	None	8.64	Enter Gross Area
FF Perimeter Stud Walls	Timber Frame	Other	0.18	18.00	30.24	30.24	0.50	Room In Roof	0.00	Enter Gross Area
FF Spandrel Block adj stairs	Solid Wall	Other	0.29	30.00	1.00	1.00	0.50	Room In Roof	0.00	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Block Walls	Dense block, plasterboard on dabs	75.00	131.80
	Internal Stud Walls	Plasterboard on timber frame	9.00	127.42

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	External Pitched Roofspace	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	82.92	82.92	None	0.00	Enter Gross Area	0.00
	External Pitched Roof Skilling	External Slope Roof	Plasterboard, insulated slope	0.12	9.00	40.25	37.88	None	0.00	Enter Gross Area	2.37
	External Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.14	9.00	32.65	30.65	None	0.00	Enter Gross Area	2.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m²)
	Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	93.83

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	112.08
Over Garage	Exposed Floor - Timber	+1	Timber exposed floor, insulation between joists	0.21	None	0.00	20.00	19.35

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor		Plasterboard ceiling, carpeted chipboard floor	18.00	93.83

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
New Dwell Composite Door	Manufacturer	Solid Door				0.70			1.20
New Dwelling DG Window	Manufacturer	Window	Double Low-E Soft 0.05			0.70		0.70	1.20
New Dwell DG French Doors	Manufacturer	Window	Double Low-E Soft 0.05			0.70		0.70	1.20
New Dwell DG Glazed Doors	Manufacturer	Window	Double Low-E Soft 0.05			0.36		0.70	1.20
New Dwell DG Roof Window	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.64		0.70	1.20
New Dwelling DG Rooflight	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.70		0.70	1.70
New Dwelling Fire Door	Manufacturer	Solid Door				0.00			1.49

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front NW Door	New Dwell Composite Door	External Cavity Walls	North West	1.98	
Front NW Window	New Dwelling DG Window	External Cavity Walls	North West	1.28	
Front NW Windows	New Dwelling DG Window	External Cavity Walls	North West	4.32	
Front NW Windows	New Dwelling DG Window	External Dormer TF Walls	North West	4.32	
Front NW Roof Window	New Dwell DG Roof Window	External Pitched Roof Skilling	North West	1.61	40
Side SW Door	New Dwell Composite Door	External Cavity Walls	South West	1.84	
Side SW Window	New Dwelling DG Window	External Cavity Walls	South West	1.66	
Garage Fire Door	New Dwelling Fire Door	Cavity Wall to Garage	South West	1.84	
Side NE Windows	New Dwelling DG Window	External Cavity Walls	North East	6.48	
FR Rooflight	New Dwelling DG Rooflight	External Flat Roof	Horizontal	2.00	0
Rear SE Roof Window	New Dwell DG Roof Window	External Pitched Roof Skilling	South East	0.76	40
Rear SE Windows	New Dwelling DG Window	External Dormer TF Walls	South East	4.32	
Rear SE French Doors	New Dwell DG French Doors	External Cavity Walls	South East	3.78	
Rear SE Glazed Doors	New Dwell DG Glazed Doors	External Cavity Walls	South East	12.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	14.50	0.07	0.07 Keystone Hi Therm + Lintel Det	No
E2 Other lintels (including other steel lintels)	Independently assessed	7.20	0.02	0.02 AutoPSI TF Detail	No
E2 Other lintels (including other steel lintels)	Independently assessed	6.10	0.09	0.09 AutoPSI Detail	No
E3 Sill	Independently assessed	19.64	0.02	0.02 Recognised Construction Detail	No
E3 Sill	Independently assessed	7.20	0.04	0.04 AutosPSI TF Detail	No
E4 Jamb	Independently assessed	31.50	0.02	0.02 Recognised Construction Detail	No
E4 Jamb	Independently assessed	9.60	0.07	0.07 AutoPSI TF Detail	No
E10 Eaves (insulation at ceiling level)	Independently assessed	17.20	0.06	0.06 Recognised Construction Detail	No
E11 Eaves (insulation at rafter level)	Independently assessed	2.05	0.02	0.02 Recognised Construction Detail	No
E12 Gable (insulation at ceiling level)	Independently assessed	8.20	0.04	0.04 Recognised Construction Detail	No
E13 Gable (insulation at rafter level)	Independently assessed	9.00	0.04	0.04 Recognised Construction Detail	No
E14 Flat roof	Table K1 - Default	16.05	0.16	0.16	No
R11 Upstands or kerbs of rooflights	Table K1 - Default	6.00	0.24	0.24 FR Rooflight Upstand	No
R6 Flat ceiling	Independently assessed	13.75	0.03	0.03 AutoPSI Detail	No
E16 Corner (normal)	Independently assessed	12.00	0.04	0.04 Recognised Construction Detail	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	2.40	-0.08	-0.08 Recognised Construction Detail	No
R2 Sill of roof window	Table K1 - Default	2.18	0.24	0.24	No
R1 Head of roof window	Table K1 - Default	2.18	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	4.26	0.24	0.24	No
E5 Ground floor (normal)	Independently assessed	52.56	0.05	0.05 Recognised Construction Detail	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

Approved Installation

Mechanical Ventilation data Type

Summary for Input Data

Type	Mechanical extract ventilation - decentralised
MV Reference Number	500787
Duct Type	Flexible
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan	1
	Kitchen	
0.11	In Room Fan Other	4
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.10	Through Wall Fan	0
	Kitchen	
0.10	Through Wall Fan	0
	Other Wet Room	

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

Designed AP ₅₀	5.00	m ² /(h.m ²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting

No

Name	Efficacy	Power	Capacity	Count
Low energy Lighting	210.00	5.00	1050.00	48

24.0 Main Heating 1

Description	Database	
Percentage of Heat	Electric Air Source Heat Pump	%
Database Ref. No.	100.00	
Fuel Type	105255	
	Electricity	
In Winter	0.00	
In Summer	0.00	
Model Name	EBLA09DA3V3	
Manufacturer	Daikin Europe NV	
System Type	Heat Pump	
Controls SAP Code	2207	
PCDF Controls	0	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

Summary for Input Data

25.0 Main Heating 2

26.0 Heat Networks

27.0 Secondary Heating

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	2
Immersion Only Heating Hot Water	No

28.1 Showers		Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Description						
Shower 1		Combi boiler or unvented hot water system	8.00		No	
Shower 2		Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	Hot Water Cylinder
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	250.00
Loss	2.10
Pipes insulation	Fully insulated primary pipework
In Airing Cupboard	No

L
kWh/day

31.0 Thermal Store

34.0 Small-scale Hydro

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Recommendations		Typical Cost		Typical savings per year		Ratings after improvement	
Lower cost measures						SAP rating	
None						Environmental Impact	
Further measures to achieve even higher standards							
		£4,000 - £7,000		£110		B 83	
		£8,000 - £10,000		£304		B 86	
						0	
						A 96	
						A 97	
						0	

Thermal Bridging

Property Reference	sc100492 32 Valley Road		Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	Detached House	
Property	Replacement Dwelling, 32, Valley Road, Eastleigh, Hampshire, SO53 1GP			

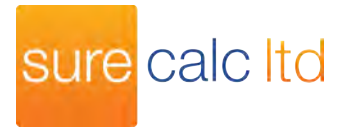
SAP Rating	82 B	DER	3.46	TER	6.63
Environmental	96 A	% DER < TER			47.81
CO ₂ Emissions (t/year)	0.68	DFEE	39.47	TFEE	39.71
Compliance Check	See BREL	% DFEE < TFEE			0.59
% DPER < TPER	0.04	DPER	35.92	TPER	35.93

Assessor Details	Mr. Mark Rogers	Assessor ID	A320-0001
Client	ACA Architectural Design, Amrik Chahal		

	Junction details	Source Type	Psi (W/mK)	Length (m)	Result	Reference
External wall	E2 Other lintels (including other steel lintels)	Independently assessed	0.066	14.50	0.96	Keystone Hi Therm + Lintel Det
External wall	E2 Other lintels (including other steel lintels)	Independently assessed	0.020	7.20	0.14	AutoPSI TF Detail
External wall	E2 Other lintels (including other steel lintels)	Independently assessed	0.087	6.10	0.53	AutoPSI Detail
External wall	E3 Sill	Independently assessed	0.023	19.64	0.45	Recognised Construction Detail
External wall	E3 Sill	Independently assessed	0.039	7.20	0.28	AutosPSI TF Detail
External wall	E4 Jamb	Independently assessed	0.018	31.50	0.57	Recognised Construction Detail
External wall	E4 Jamb	Independently assessed	0.068	9.60	0.65	AutoPSI TF Detail
External wall	E10 Eaves (insulation at ceiling level)	Independently assessed	0.055	17.20	0.95	Recognised Construction Detail
External wall	E11 Eaves (insulation at rafter level)	Independently assessed	0.018	2.05	0.04	Recognised Construction Detail
External wall	E12 Gable (insulation at ceiling level)	Independently assessed	0.037	8.20	0.30	Recognised Construction Detail
External wall	E13 Gable (insulation at rafter level)	Independently assessed	0.039	9.00	0.35	Recognised Construction Detail
External wall	E14 Flat roof	Table K1 - Default	0.160	16.05	2.57	
External roof	R11 Upstands or kerbs of rooflights	Table K1 - Default	0.240	6.00	1.44	FR Rooflight Upstand
External roof	R6 Flat ceiling	Independently assessed	0.031	13.75	0.43	AutoPSI Detail
External wall	E16 Corner (normal)	Independently assessed	0.040	12.00	0.48	Recognised Construction Detail
External wall	E17 Corner (inverted – internal area greater than external area)	Independently assessed	-0.082	2.40	-0.20	Recognised Construction Detail
External roof	R2 Sill of roof window	Table K1 - Default	0.240	2.18	0.52	
External roof	R1 Head of roof window	Table K1 - Default	0.240	2.18	0.52	
External roof	R3 Jamb of roof window	Table K1 - Default	0.240	4.26	1.02	
External wall	E5 Ground floor (normal)	Independently assessed	0.053	52.56	2.79	Recognised Construction Detail

Total: 243.57 W/mK:
Y-Value: 0.00 W/m²K:

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Roof 000006 - Pitched Roof Insulated Ceiling

Roof Type: Pitched Roof, insulated flat ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Loft Space				
	Main construction	0	0.2000	0.2000	100.00
Layer 2	Earthwool Loft Roll 44				
	Main construction	200	0.0440	4.5455	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	Earthwool Loft Roll 44				
	Main construction	200	0.0440	4.5455	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 4	Earthwool Loft Roll 44				
	Main construction	100	0.0440	2.2727	87.50
	Main construction	100	0.1300	0.7692	12.50
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 5	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1000	

Total resistance:	Upper limit = 11.552 m ² K/W	Lower limit = 11.317 m ² K/W	Average = 11.434 m ² K/W
	Total correction = 0.0046 m ² K/W	U-value (unrounded) = 0.09 W/m ² K	

Unheated space: None

Total thickness: 513 mm

U-value: 0.09 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Roof 000007 - Pitched Roof Skilling

Roof Type: Pitched Roof, insulated sloping ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)	Density (kg/m ³)	Heat Cap. (J/kgK)
Ext surface				0.0400			
Layer 1	Tiling, clay						
	Main construction	15	1.0000	0.0150	100.00		
Layer 2	Tile battens						
	Main construction	25	0.1563	0.1600	87.33		
	Main construction	25	0.1300	0.1923	12.67		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 3	Counter battens						
	Main construction	25	0.1563	0.1600	90.50		
	Main construction	25	0.1300	0.1923	9.50		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 4	Breather membrane						
	Main construction	0.1	0.0000	0.0000	100.00		
Layer 5	Standard cavity						
	Main construction	10	0.0275	0.3632	100.00		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 6	Celotex XR4000						
	Main construction	140	0.0220	6.3636	87.50	30	1400
	Main construction	140	0.1300	1.0769	12.50	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Layer 7	Celotex PL4060 [72.5mm]						
	Main construction	72.5	0.0264	2.7500	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Int surface				0.1000			

Total resistance: Upper limit = 8.725 m² K/W Lower limit = 7.538 m² K/W Average = 8.131 m² K/W
Total correction = 0.0035 m² K/W U-value (unrounded) = 0.12 W/m² K

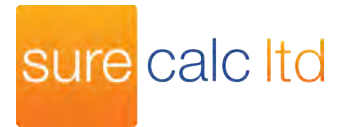
Unheated space: None

Total thickness: 288 mm

U-value: 0.12 W/m² K

Kappa: 0.00 kJ/m² K

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Roof 000008 - Flat roof Celotex between and under 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				0.1700	
Layer 1	Built-up roofing				
	Main construction	6	0.1600	0.0000	100.00
Layer 2	Plywood				
	Main construction	18	0.1300	0.0000	100.00
Layer 3	Standard cavity				
	Main construction	50	0.0000	0.0000	87.50
	Main construction	50	0.1300	0.0000	12.50
	Corrections - Cavity Ventilated, Emissivity: Low Emissivity (BR443)				
Layer 4	Celotex XR4000				
	Main construction	150	0.0220	6.8182	87.50
	Main construction	150	0.1300	1.1538	12.50
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 5	Celotex GA4000				
	Main construction	50	0.0220	2.2727	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 6	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1000	

Total resistance:	Upper limit = 7.926 m ² K/W	Lower limit = 6.828 m ² K/W	Average = 7.377 m ² K/W
	Total correction = 0.0042 m ² K/W	U-value (unrounded) = 0.14 W/m ² K	

Unheated space: None

Total thickness: 287 mm

U-value: 0.14 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Wall 000001 - Cavity Wall Full Fill Dritherm

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	0.7700	0.1325	82.81
Layer 2	Knauf Dritherm 32				
	Main construction	102	0.9407	0.1084	17.19
Layer 3	Thermalite Shield				
	Main construction	150	0.0320	4.6875	100.00
Layer 4	airspace/plaster dabs				
	Main construction	150	0.0320	4.6875	100.00
Layer 5	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1300	

Total resistance: Upper limit = 6.120 m² K/W Lower limit = 5.918 m² K/W Average = 6.019 m² K/W
Total correction = 0.0017 m² K/W U-value (unrounded) = 0.17 W/m² K

Unheated space: None

Total thickness: 380 mm

U-value: 0.17 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Wall 000002 - Cavity Wall Full Fill Dritherm

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	Thermalite Shield				
	Main construction	100	0.1500	0.6667	93.43
	Main construction	100	0.8803	0.1136	6.57
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 2	Knauf Dritherm 32				
	Main construction	75	0.0320	2.3438	100.00
	Corrections - Air Gap: Level 0, Fasteners: Wall ties, Cross sectional area: 12.50 mm ² , Lambda: 17.000 W/m.K, per m ² : 2.500				
Layer 3	Thermalite Shield				
	Main construction	100	0.1500	0.6667	93.43
	Main construction	100	0.8803	0.1136	6.57
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	airspace/plaster dabs				
	Main construction	15	0.0288	0.5208	80.00
	Main construction	15	0.0882	0.1700	20.00
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 5	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1300	

Total resistance:	Upper limit = 4.270 m ² K/W	Lower limit = 3.952 m ² K/W	Average = 4.111 m ² K/W
	Total correction = 0.0035 m ² K/W	U-value (unrounded) = 0.24 W/m ² K	

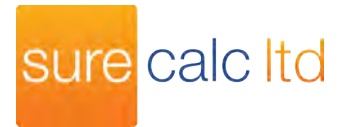
Unheated space: None

Total thickness: 303 mm

U-value: 0.24 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Wall 000003 - TF Tile Hung Stud

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)	Density (kg/m ³)	Heat Cap. (J/kgK)
Ext surface				0.0400			
Layer 1	Tiling, clay						
	Main construction	15	1.0000	0.0150	100.00		
Layer 2	airspace/timber battens						
	Main construction	22	0.1222	0.1800	89.63		
	Main construction	22	0.1243	0.1770	10.37		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 3	Plywood						
	Main construction	12	0.1300	0.0923	100.00		
Layer 4	Celotex GA4000						
	Main construction	75	0.0220	3.4091	87.50	30	1400
	Main construction	75	0.1300	0.5769	12.50	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Layer 5	Standard cavity						
	Main construction	25	0.0345	0.7242	87.50		
	Main construction	25	0.1300	0.1923	12.50		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 6	Celotex PL4050 [62.5mm]						
	Main construction	62.5	0.0272	2.3000	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Int surface				0.1300			

Total resistance:	Upper limit = 6.262 m ² K/W	Lower limit = 5.408 m ² K/W	Average = 5.835 m ² K/W
	Total correction = 0.0029 m ² K/W	U-value (unrounded) = 0.17 W/m ² K	

Unheated space: None

Total thickness: 212 mm

U-value: 0.17 W/m² K

Kappa: 0.00 kJ/m² K

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Wall 000004 - TF Perimeter Stud

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)	Density (kg/m ³)	Heat Cap. (J/kgK)
Ext surface				0.0400			
Layer 1	Plywood						
	Main construction	12	0.1300	0.0923	100.00		
Layer 2	Celotex GA4000						
	Main construction	75	0.0220	3.4091	87.50	30	1400
	Main construction	75	0.1300	0.5769	12.50	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Layer 3	Standard cavity						
	Main construction	25	0.0345	0.7242	87.50		
	Main construction	25	0.1300	0.1923	12.50		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 4	Celotex PL4050 [62.5mm]						
	Main construction	62.5	0.0272	2.3000	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Int surface				0.1300			

Total resistance:	Upper limit = 6.057 m ² K/W	Lower limit = 5.213 m ² K/W	Average = 5.635 m ² K/W
	Total correction = 0.0031 m ² K/W	U-value (unrounded) = 0.18 W/m ² K	

Unheated space: None

Total thickness: 175 mm

U-value: 0.18 W/m² K

Kappa: 0.00 kJ/m² K

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Wall 000005 - Dry Lined Solid Masonry Wall

Wall Type: Standard Wall

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)	Density (kg/m ³)	Heat Cap. (J/kgK)
Ext surface				0.0400			
Layer 1	Plasterboard, standard						
	Main construction	12.5	0.2100	0.0595	100.00		
Layer 2	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 3	Thermalite Shield						
	Main construction	100	0.1500	0.6667	93.43		
	Main construction	100	0.8803	0.1136	6.57		
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Layer 4	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 5	Celotex PL4050 [62.5mm]						
	Main construction	62.5	0.0272	2.3000	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Int surface				0.1300			

Total resistance:	Upper limit = 3.494 m ² K/W	Lower limit = 3.375 m ² K/W	Average = 3.434 m ² K/W
	Total correction = 0.0047 m ² K/W	U-value (unrounded) = 0.29 W/m ² K	

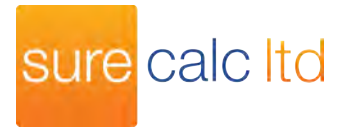
Unheated space: None

Total thickness: 205 mm

U-value: 0.29 W/m² K

Kappa: 0.00 kJ/m² K

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Floor 000009 - Ground Floor Beam & Block

Floor Type: Suspended Floor

Area = 131.43 m², Perimeter = 52.56 m, Wall thickness = 300.00 mm, Soil: Unknown

Depth of underfloor space below ground: 0.200 m Floor wind shielding: Average (suburban)

Floor height above ground: h = 0.150 m

U-value of walls above ground: U_w = 0.170 m

Ventilation openings per perimeter length: e = 0.0015 %

Mean wind speed: v = 5.000 m/s

Resistance on solum: R_g = 0.000 m²K/W

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.1700	
Layer 1	Blockwork, dense				
	Main construction	100	1.5900	0.0629	90.91
	Main construction	100	1.0000	0.1000	9.09
Layer 2	Celotex XR4000				
	Main construction	150	0.0220	6.8182	100.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 3	Screed				
	Main construction	75	1.1500	0.0652	100.00
Int surface				0.1700	

Total resistance: Upper limit = 7.290 m² K/W Lower limit = 7.288 m² K/W Average = 7.289 m² K/W

Total correction = 0.0087 m² K/W

U-value (unrounded) = 0.12 W/m² K

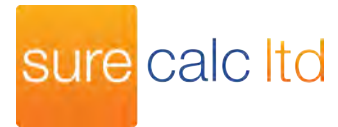
Unheated space: None

Total thickness: 325 mm

U-value: 0.12 W/m² K

Kappa: n/a

U-VALUE CALCULATOR REPORT



Property Reference	sc122115	Issued on Date	10/09/2025
Assessment Reference	001	Prop Type Ref	New Dwelling Part L 2021
Project	Replacement Dwelling, 32, Valley Road, Chandlers Ford, Eastleigh, Hampshire, SO53 1GP		
Calculation Type	New Build (As Designed)		

SAP Rating	86 B	DER	12.18	TER	20.98
Environmental	87 B	% DER<TER	41.94		
CO ₂ Emissions (t/year)	2.28	DFEE	43.40	TFEE	55.28
General Requirements Compliance	Pass	% DFEE<TFEE	21.49		

Assessor Details	Mr. Mark Rogers, Surecalc Limited, Tel: 01243572695, mark@surecalc.co.uk	Assessor ID	A320-0001
Client	Amrik Chahal, ACA Architectural Design		

Building Elements

Floor 000010 - Floor Over Garage

Floor Type: Exposed Floor

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Layer 2	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Layer 3	ROCKWOOL THERMAL ROCKFLOOR				
	Main construction	100	0.0380	2.6316	87.50
	Main construction	100	0.1300	0.7692	12.50
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 4	ROCKWOOL THERMAL ROCKFLOOR				
	Main construction	100	0.0380	2.6316	87.50
	Main construction	100	0.1300	0.7692	12.50
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 5	Chipboard				
	Main construction	22	0.1300	0.1692	100.00
Int surface				0.1700	

Total resistance: Upper limit = 5.085 m² K/W Lower limit = 4.539 m² K/W Average = 4.812 m² K/W
Total correction = 0.0035 m² K/W U-value (unrounded) = 0.21 W/m² K

Unheated space: None

Total thickness: 247 mm

U-value: 0.21 W/m² K

Kappa: n/a