# Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed using Kaizen SAP 10.2 SAP 10 program, 1.0.1

**Date:** Fri 15 Nov 2024 10:30:13

| Project Information | | | |
|---|---|---|---|
| Assessed By | Joanna Povey | Building Type | House, Detached |
| OCDEA Registration | KAZN000004 | Assessment Date | 2024-10-09 |

| Dwelling Details | | | |
|---|---|---|---|
| Assessment Type | As designed | Total Floor Area | 140 $m^2$ |
| Site Reference | Alder D | Plot Reference | Alder D |
| Address | Address Line 1, ....., AL9 5HZ | | |

| Client Details | |
|---|---|
| Name | Not Given |
| Company | Not Given |
| Address | Not Provided, Not Provided, AL9 5HZ |

**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 | Mains gas | |
| *Target carbon dioxide emission rate* | *9.97 $kgCO_2/m^2$* | |
| Dwelling carbon dioxide emission rate | 9.85 $kgCO_2/m^2$ | OK |
| **1b Target primary energy rate and dwelling primary energy** | | |
| *Target primary energy* | *52.31 $kWh_{PE}/m^2$* | |
| Dwelling primary energy | 50.39 $kWh_{PE}/m^2$ | OK |
| **1c Target fabric energy efficiency and dwelling fabric energy efficiency** | | |
| *Target fabric energy efficiency* | *44.50 $kWh/m^2$* | |
| Dwelling fabric energy efficiency | 43.46 $kWh/m^2$ | OK |

| 2a Fabric U-values | | | | |
|---|---|---|---|---|
| **Element** | ***Maximum permitted average U-Value [$W/m^2K$]*** | **Dwelling average U-Value [$W/m^2K$]** | **Element with highest individual U-Value** | |
| External walls | *0.26* | 0.24 | Brick (0.24) | OK |
| Party walls | *0.2* | N/A | N/A | **N/A** |
| Curtain walls | *1.6* | N/A | Wl - Garage (0.4) | OK |
| Floors | *0.18* | 0.12 | Flr - Exposed Floor (0.14) | OK |
| Roofs | *0.16* | 0.09 | Rf - Ins Joist 2 (0.15) | OK |
| Windows, doors, and roof windows | *1.6* | 1.2 | Rear (1.3) | OK |
| Rooflights | *2.2* | N/A | N/A | **N/A** |

| 2b Envelope elements (better than typically expected values are flagged with a subsequent (!)) | | |
|---|---|---|
| **Name** | **Net area [$m^2$]** | **U-Value [$W/m^2K$]** |
| Exposed wall: Brick | 136.751 | 0.24 |
| Exposed wall: Wl - Garage | 20.665 | 0.4 |
| Ground floor: Flr - Ground | 62.901 | 0.11 |
| Ground floor: Flr - Exposed Floor | 15.532 | 0.14 |
| Exposed roof: Rf - Ins Joist | 76.823 | 0.09 **(!)** |
| Exposed roof: Rf - Ins Joist 2 | 1.611 | 0.15 |

| 2c Openings (better than typically expected values are flagged with a subsequent (!)) | | | | |
|---|---|---|---|---|
| **Name** | **Area [$m^2$]** | **Orientation** | **Frame factor** | **U-Value [$W/m^2K$]** |
| R Side, Door (1) | 2.148 | North | 0.7 | 1.1 **(!)** |
| L Side, Door (2) | 2.148 | South | 1.0 | 1.2 |
| Front, Door (3) | 2.148 | East | | 0 **(!)** |
| Rear, Windows (1) | 6.65 | West | 1.0 | 1.3 |
| Front, Windows (2) | 10.544 | East | 1.0 | 1.3 |
| L Side, Windows (3) | 2.638 | South | 1.0 | 1.3 |
| R Side, Windows (4) | 0.615 | North | 1.0 | 1.3 |
| Opening, Windows (5) | 7.35 | West | 1.0 | 1.3 |

| 2d Thermal bridging (better than typically expected values are flagged with a subsequent (!)) |
|---|
| Building part **1 - Main Dwelling**: 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) | Government-approved scheme | 0.042 | Briary Energy Vistry E2 |
| External wall | E4: Jamb | Government-approved scheme | 0.01 **(!)** | Briary Energy Vistry E3 |
| External wall | E3: Sill | Government-approved scheme | 0.009 **(!)** | Briary Energy Vistry E4 |
| External wall | E5: Ground floor (normal) | Government-approved scheme | 0.06 | Paralell |
| External wall | E20: Exposed floor (normal) | Government-approved scheme | 0.03 **(!)** | Knauf Supafil 34 Details E20 |
| External wall | E21: Exposed floor (inverted) | Government-approved scheme | 0.027 **(!)** | Briary Energy Vistry E21 |
| External wall | E6: Intermediate floor within a dwelling | Government-approved scheme | 0.003 **(!)** | Briary Energy Vistry E2 |
| External wall | E10: Eaves (insulation at ceiling level) | Government-approved scheme | 0.04 | Not Provided |
| External wall | E24: Eaves (insulation at ceiling level - inverted) | Government-approved scheme | 0.107 | Knuaf |
| External wall | E12: Gable (insulation at ceiling level) | Government-approved scheme | 0.044 | Not Provided |
| External wall | E16: Corner (normal) | Government-approved scheme | 0.029 **(!)** | Not Provided |
| External wall | E17: Corner (inverted - internal area greater than external area) | SAP table default | -0.129 | Not Provided |
| External wall | E5: Ground floor (normal) | Government-approved scheme | 0.146 | Garage Wall |
| External wall | E16: Corner (normal) | Government-approved scheme | 0.04 | Garage Wall |
| External wall | E17: Corner (inverted - internal area greater than external area) | SAP table default | -0.075 | Garage Wall |
| External wall | E2: Other lintels (including other steel lintels) | Government-approved scheme | 0.343 | Catnic CX90 |
| External wall | E2: Other lintels (including other steel lintels) | Government-approved scheme | 0.075 | Eves Lintel |
| External wall | E2: Other lintels (including other steel lintels) | Government-approved scheme | 0.247 | Garage side door |
| External wall | E2: Other lintels (including other steel lintels) | Government-approved scheme | 0.028 **(!)** | Storm King Bay |
| External wall | E2: Other lintels (including other steel lintels) | Government-approved scheme | 0.028 **(!)** | Stormking |
| External wall | E5: Ground floor (normal) | Government-approved scheme | 0.048 | Perp |

| 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 | 4.5 $m^3/hm^2$, Design value | **OK** |
| Air permeability test certificate reference | | |

| 4 Space heating | |
|---|---|
| **Main heating system 1**: Boiler with radiators or underfloor heating - Mains gas | |
| Efficiency | 180.9% |
| Emitter type | Radiators |
| Flow temperature | 55°C |
| System type | Gas1998OrLater |
| Manufacturer | |
| Model | |
| Commissioning | |
| **Secondary heating system**: N/A | |
| Fuel | N/A |
| Efficiency | N/A |
| Commissioning | |

| 5 Hot water | | |
|---|---|---|
| **Cylinder/store** - type: Cylinder | | |
| Capacity | 210 litres | |
| Declared heat loss | 1.48 kWh/day | |
| Primary pipework insulated | Yes | |
| Manufacturer | | |
| Model | | |
| Commissioning | | |
| **Waste water heat recovery system 1** - type: Instantaneous | | |
| Efficiency | 1% | |
| Manufacturer | Q-Blue B.V. | |
| Model | QB1-21 | |

| 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 | 88 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 | 0.01 W/(l/s) | OK |
| *Minimum permitted heat recovery efficiency* | *N/A* | |
| Heat recovery efficiency | 1% | **N/A** |
| Manufacturer/Model | 0 | |
| Commissioning | | |

| 9 Local generation | |
|---|---|
| Technology type: **Photovoltaic system (1)** | |
| Peak power | 3.14 kWp |
| Orientation | North East |
| Pitch | 30° |
| Overshading | None or very little |
| Manufacturer | Not Provided |
| MCS certificate | |

| 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:<br><br>Name: Joanna Povey | Assessor ID: KAZN000004<br><br>Date: 15 Nov 2024 |

| b. Client Declaration |
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| N/A |