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| CONCRETE BLOCK ASSOCIATION | **Linear Thermal Transmittance (ψ-value)**<br>**Temperature Factor (f-value)** | GCU Glasgow Caledonian University |

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| **Certificate No: CBA-E24-1-S-A** | **Issued : January 2016** |
| **Issued by Concrete Block Association** | |

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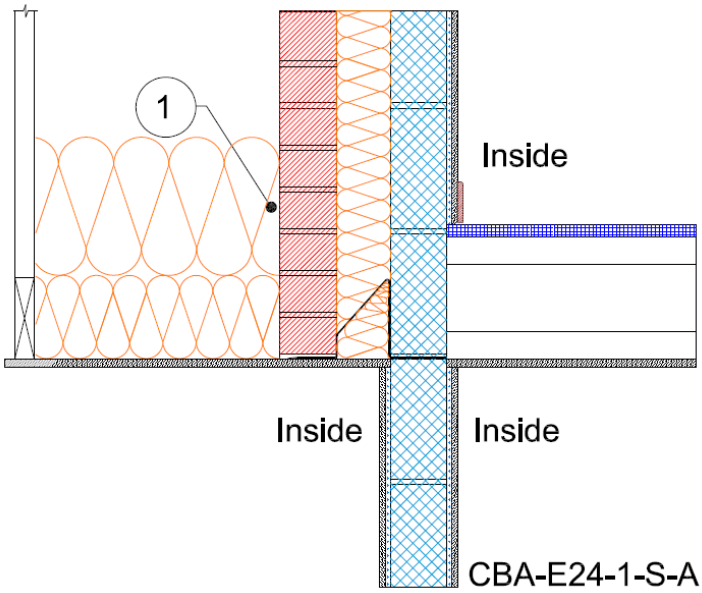
|---|---|---|
| **Eaves (Insulation at ceiling level - inverted)**<br>Table K.1 Ref E24<br>Default ψ-value = 0.24 W/mK | Inner leaf | 100 mm blockwork |
| | Cavity | Full fill insulation |
| | Outer leaf | 102 mm brick λ = 0.77 |
| | Lintel | Folded steel with perforated base plate |
| | Roof | Pitched roof over single storey addition with doorway.<br>150 mm of insulation with λ =0.037 between 45mm wide joists. 250mm over joists |

**Key Point**

1. Ensure the roof insulation is tightly butted to the wall




Calculations have been performed in accordance with:
BS EN ISO 10211:2007, BR497 and BS EN ISO 13370:2007

Calculation prepared by : Chris Sanders B.Sc, M.Sc. GCU, Cowcaddens Rd, Glasgow G4 0BA
For more information contact 0116 232 5165 (CBA).

**Calculated ψ-values and f-values for eaves (insulation at ceiling level – inverted) and cavity insulation as highlighted**

**1. With ultra lightweight blocks in the internal wall λ = 0.28 W/mK**

| | Inner leaf blockwork | | | | | |
|---|---|---|---|---|---|---|
| | Ultra lightweight | | Lightweight | | Dense | |
| Cavity Insulation | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* |
| 100mm λ=0.037 | 0.111 | 0.932 | 0.110 | 0.935 | 0.110 | 0.938 |
| 100mm λ=0.032 | 0.117 | 0.931 | 0.117 | 0.935 | 0.118 | 0.938 |
| 150mm λ=0.037 | 0.143 | 0.933 | 0.143 | 0.936 | 0.144 | 0.938 |
| 150mm λ=0.032 | 0.147 | 0.933 | 0.148 | 0.936 | 0.149 | 0.938 |

**2. With lightweight blocks in the internal wall λ = 0.6 W/mK**

| | Inner leaf blockwork | | | | | |
|---|---|---|---|---|---|---|
| | Ultra lightweight | | Lightweight | | Dense | |
| Cavity Insulation | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* |
| 100mm λ=0.037 | 0.112 | 0.933 | 0.110 | 0.936 | 0.110 | 0.939 |
| 100mm λ=0.032 | 0.118 | 0.933 | 0.117 | 0.936 | 0.118 | 0.939 |
| 150mm λ=0.037 | 0.143 | 0.934 | 0.143 | 0.936 | 0.144 | 0.939 |
| 150mm λ=0.032 | 0.148 | 0.934 | 0.148 | 0.936 | 0.149 | 0.939 |

**3. With dense blocks in the internal wall λ = 1.33 W/mK**

| | Inner leaf blockwork | | | | | |
|---|---|---|---|---|---|---|
| | Ultra lightweight | | Lightweight | | Dense | |
| Cavity Insulation | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* | ψ-*value W/mK* | *f-value* |
| 100mm λ=0.037 | 0.113 | 0.935 | 0.111 | 0.938 | 0.111 | 0.940 |
| 100mm λ=0.032 | 0.119 | 0.934 | 0.118 | 0.937 | 0.119 | 0.940 |
| 150mm λ=0.037 | 0.144 | 0.935 | 0.144 | 0.937 | 0.144 | 0.939 |
| 150mm λ=0.032 | 0.148 | 0.934 | 0.148 | 0.937 | 0.150 | 0.939 |

The f-value should be above 0.75 to minimise the risk of mould in dwellings.

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# On-site Checklist

1. Roof insulation is tightly butted to the wall ☐

**Signed:**

**Site manager/supervisor……..**

**Site name……..**

**Plot Number…….**

**Date……**