SAP Company

Area-Weighted U-Value

CALCULATION STATEMENT

EXTENSION FABRIC • ENGLAND APPROVED DOCUMENT L 2021 (+2023)

PROJECT

Project/reference	Rear Extension
Property	Example property
Prepared by	Design-stage example
Date	11 November 2026

ENTERED NUMERICAL CHECKS MET

PROPOSED 0.303 W/(m²·K) **NOTIONAL 0.306 W/(m²·K)**

Entered numerical checks only — not a regulatory approval

SAMPLE ONLY - NOT FOR PROJECT USE

1. Assessment scope

This is an area-weighted comparison of the entered extension fabric.

The same-size notional extension uses fixed Table 4.2 U-values.

Full worked calculations and element schedules are on page 2.

2. Limiting element checks

Windows	WITHIN LIMIT
Rooflights	WITHIN LIMIT
Walls (weighted average)	WITHIN LIMIT
Roofs (weighted average)	WITHIN LIMIT
Floors (weighted average)	WITHIN LIMIT

Method: AD L Volume 1 (2021 + 2023), paragraphs 10.7 and 10.9, Table 4.2.

Areas and U-values are user-entered; drawings and product evidence are not checked.

3. Proposed extension fabric

Element	Area m²	U-value	A × U (W/K)
External walls	29.520	0.160	4.723
Flat roof	9.540	0.140	1.336
Ground floor	13.630	0.180	2.453
Windows	6.270	1.400	8.778
Rooflights	0.550	1.400	0.770
TOTAL	**59.510**		**18.060**

4. Notional extension fabric

Element	Area m²	U-value	A × U (W/K)
External walls	30.221	0.180	5.440
Flat roof	9.601	0.150	1.440
Ground floor	13.630	0.180	2.453
Windows	5.569	1.400	7.797
Rooflights	0.489	2.200	1.075
TOTAL	**59.510**		**18.205**

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5. Area-weighted calculation workings

Total exposed extension area: 59.510 m²

Proposed: 18.060 W/K ÷ 59.510 m² = 0.303 W/(m²·K)

Notional: 18.205 W/K ÷ 59.510 m² = 0.306 W/(m²·K)

Notional opening area: 6.058 m² (paragraph 10.7(d) allowance)

COMPARISON MET **0.303 proposed / 0.306 notional**

5. Calculation method and limitations

- Area-weighted U-value = sum(element net area multiplied by U-value) / total exposed area.
- Notional U-values are fixed by this tool edition and are not customer-editable.
- The notional extension preserves gross wall and roof planes using Table 4.2 values.
- The 25% floor-area allowance plus qualifying removed openings informs notional glazing only.
- Notional openings are proportioned by proposed type and capped at proposed opening area.
- That allocation is a declared modelling convention requiring independent technical review.
- The numerical backstop checks consider each opening separately and weighted opaque types.
- Rooflight U-values and areas require the applicable outer developed surface conventions.
- This fabric comparison does not cover thermal bridging or existing fabric upgrades.
- The correct regulatory edition and any transitional provisions must be confirmed by the user.
- Projects with multiple roof constructions and roof openings are not supported in this edition.
- All dimensions, areas, U-values and supporting product evidence must be independently checked.
- The numerical result is not a certificate, independent assessment, or Building Regulations approval.
- The building control body determines acceptance; statutory consumer rights are unaffected.

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Report record

Order reference: SAMPLE-0001

Generated from customer-supplied calculation inputs.