Optimer System, S.A.

THERMAL COMPARATIVE REPORT

POLYREFLEX UNO

1. PolyREFLEX UNO system in Walls (Horizontal Flow)

1.1 System configuration (PolyREFLEX UNO) in walls:

- Product: PolyREFLEX UNO (thickness: 3 mm)
- One 2 cm air cavity (Horizontal Flow)
- Total system thickness: 23 mm

1.2 Total thermal resistance of the system in walls:

- R air cavity in walls with horizontal flow: 0.66 m²·K/W
- R core PolyREFLEX UNO: 0,11 m²·K/W
- **R Total:**

0.66 ²·K/W + 0.11 m²·K/W = **0.77 m²·K/W**

1.3 Comparison of the system with other insulating materials

To achieve the thermal resistance of the system R = 0.77 m²·K/W, the following formula will be used: **Thickness (m) = R × λ**

Traditional Material	*Thermal conductivity λ (W/m·K)*	*Required thicknes (m)*	*Thickness in mm*
XPS	0,035 (1)	0,027	27 mm
EPS	0,038 (2)	0,029	29 mm
Mineral wool (high density)	0,036 (3)	0,028	28 mm
Glass wool	0,040 (4)	0,031	31 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

2. PolyREFLEX UNO in Roofs (Vertical Downward Flow)

2.1 System configuration (PolyREFLEX UNO) in roofs:

- Product: PolyREFLEX UNO (thickness: 3 mm)
- One 4 cm air cavity (Horizontal Flow)
- Total system thickness: 43 mm

2.2 Total thermal resistance of the system in roofs:

- R air cavity in roofs with vertical flow: 1.14 m²·K/W
- R core PolyREFLEX UNO: 0,11 m²·K/W
- **R Total:**

1,14 ²·K/W + 0.11 m²·K/W = **1.25 m²·K/W**

2.3 Comparison of the System with other insulating materials

To achieve the thermal resistance of the system R = 1.25 m²·K/W, the following formula will be used: **Thickness (m) = R × λ**

Traditional Material	*Thermal conductivity λ (W/m·K)*	*Required thicknes (m)*	*Thickness in mm*
XPS	0,035 (1)	0,044	44 mm
EPS	0,038 (2)	0,048	48 mm
Mineral wool (high density)	0,036 (3)	0,045	45 mm
Glass wool	0,040 (4)	0,050	50 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

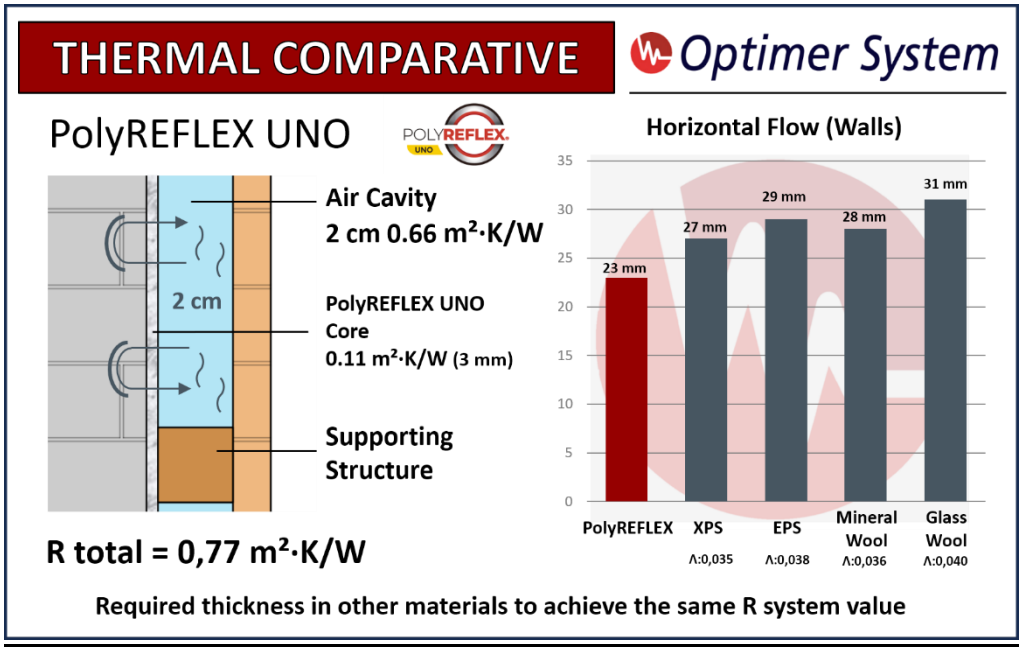
3. Key advantages of PolyREFLEX UNO:

- Only 3 mm material thickness
- Quick and clean installation (dry, without construction work)
- Durability guarantee: 25 years (according to ETA 13/0525)
- Official European certification with UNE-EN standards
- Low environmental impact and free of hazardous substances.
- By heating spaces through radiation and not conduction, heat reaches people and objects directly, not just the air, making the thermal sensation more pleasant and faster.
- Furthermore, since heat is transmitted by radiation, it does not depend on hot air; instead, heat is distributed more uniformly, avoiding accumulation only at the top of the space.

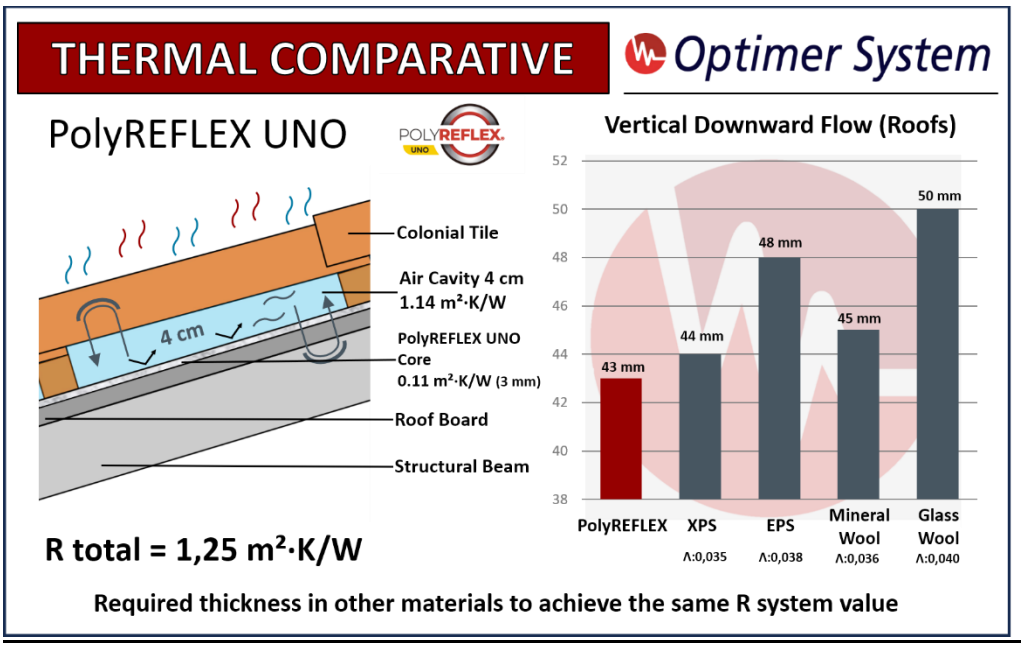
4. Conclusion:

The **PolyREFLEX UNO system + double air cavity** equals and improves upon the thermal performance of traditional thermal materials used in construction. This allows for space savings, easier installation, and maintaining high thermal efficiency, all with official backing and technical guarantee.

Ideal for energy renovation projects where space and execution speed are priorities.



Source: Own elaboration



Source: Own elaboration

5. Final Remarks

This calculation is valid for installations over horizontal slabs and complies with the calculation method described in UNE EN ISO 6946. All values come from official technical documentation of Optimer System and UNE standards.

For more technical information and downloads of data sheets and certificates, visit: www.optimersystem.com

Plata 47 St. 28890 Loeches – Madrid –España
Tel: +34 918 880 738 Fax +34 918 814 989
comercial@optimersystem.com
www.optimersystem.com

Optimer System