Optimer System, S.A.

THERMAL COMPARATIVE REPORT

POLYREFLEX ULTRA

1. PolyREFLEX ULTRA system in Walls (Horizontal Flow)

1.1 System configuration (PolyREFLEX ULTRA) in walls:

- Product: PolyREFLEX ULTRA (thickness: 16 mm)
- Air cavities: 2 cm on each side (Horizontal Flow)
- Total system thickness: 56 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 ULTRA: 0,43 m²·K/W
- **R Total:**

0.66 ²·K/W + 0.43 m²·K/W + 0.66 m²·K/W = **1.75 m²·K/W**

1.3 Comparison of the system with other insulating materials

To achieve the thermal resistance of the system R = 1.75 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)	0,061	61 mm
EPS	0,038 (2)	0,067	67 mm
Mineral wool (high density)	0,036 (3)	0,063	63 mm
Glass wool	0,040 (4)	0,070	70 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

2. PolyREFLEX ULTRA in Roofs (Vertical Downward Flow)

2.1 System configuration (PolyREFLEX ULTRA) in roofs:

- Product: PolyREFLEX ULTRA (thickness: 16 mm)
- Air cavities: 4 cm on each side (Horizontal Flow)
- Total system thickness: 96 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 ULTRA: 0,43 m²·K/W
- **R Total:**

1,14 ²·K/W + 0.43 m²·K/W + 1,14 m²·K/W = **2.71 m²·K/W**

2.3 Comparison of the System with other insulating materials

To achieve the thermal resistance of the system R = 2.71 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)	0,095	95 mm
EPS	0,038 (2)	0,103	103 mm
Mineral wool (high density)	0,036 (3)	0,098	98 mm
Glass wool	0,040 (4)	0,108	108 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

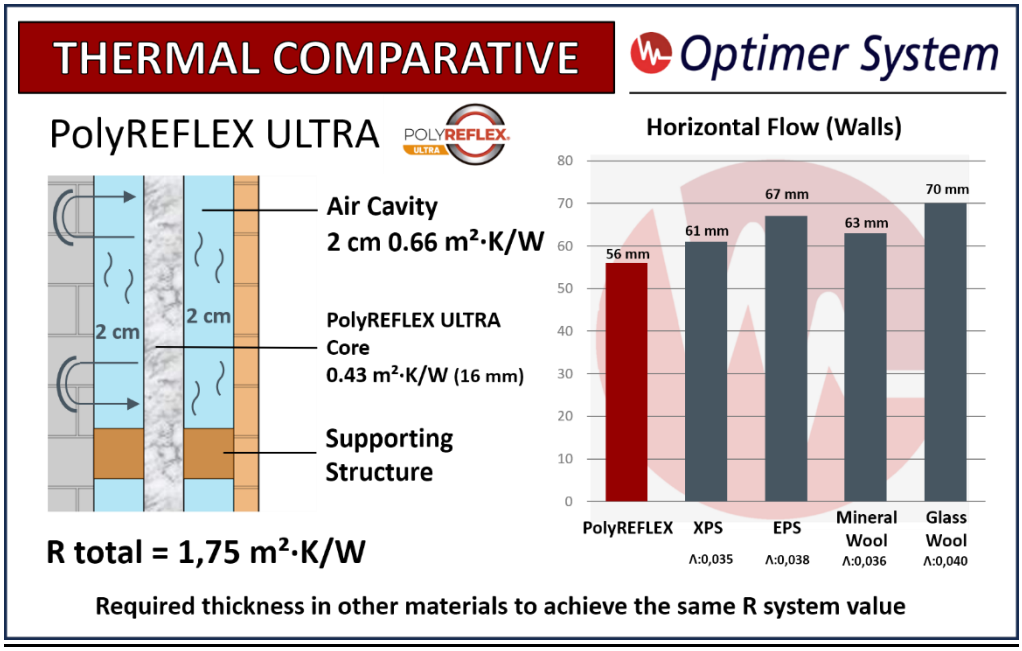
3. Key advantages of PolyREFLEX ULTRA:

- Only 16 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.

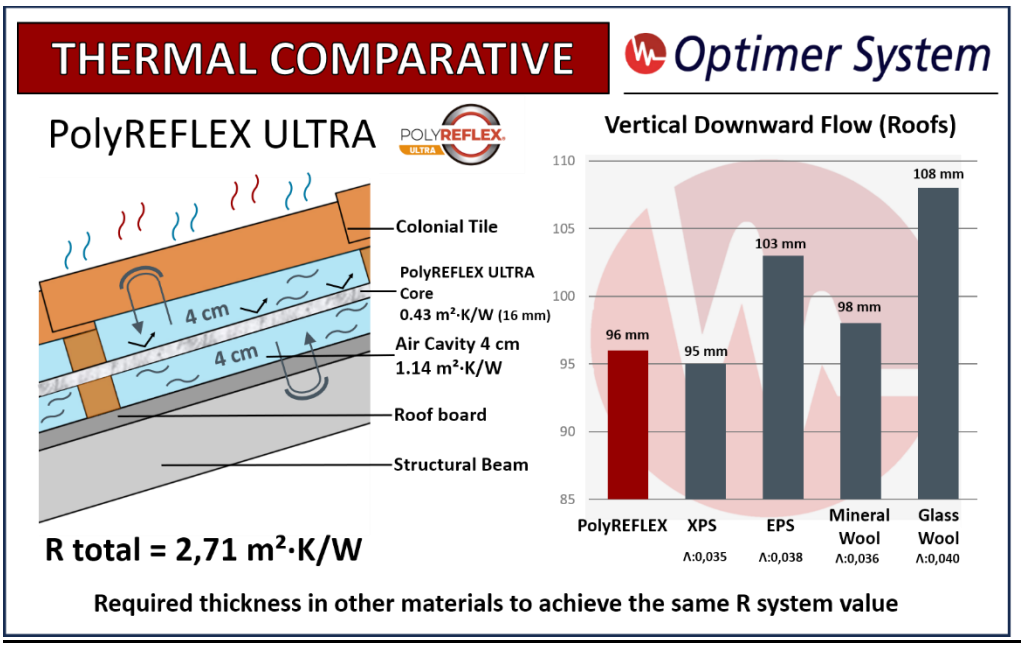
4. Conclusion:

The **PolyREFLEX ULTRA 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

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