Optimer System, S.A.

THERMAL COMPARATIVE REPORT

POLYREFLEX BIG

1. PolyREFLEX BIG system in Walls (Horizontal Flow)

1.1 System configuration (PolyREFLEX BIG) in walls:

- Product: PolyREFLEX BIG (thickness: 8 mm)
- Air cavities: 2 cm on each side (Horizontal Flow)
- Total system thickness: 48 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 BIG: 0,22 m²·K/W
- **R Total:**

0.66 ²·K/W + 0.22 m²·K/W + 0.66 m²·K/W = **1.54 m²·K/W**

1.3 Comparison of the system with other insulating materials

To achieve the thermal resistance of the system R = 2.50 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)	0,054	54 mm
EPS	0,038 (2)	0,059	59 mm
Mineral wool (high density)	0,036 (3)	0,055	55 mm
Glass wool	0,040 (4)	0,062	62 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

2. PolyREFLEX BIG in Roofs (Vertical Downward Flow)

2.1 System configuration (PolyREFLEX BIG) in roofs:

- Product: PolyREFLEX BIG (thickness: 8 mm)
- Air cavities: 4 cm on each side (Horizontal Flow)
- Total system thickness: 88 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 BIG: 0,22 m²·K/W
- **R Total:**

1,14 ²·K/W + 0.22 m²·K/W + 1,14 m²·K/W = **2.50 m²·K/W**

2.3 Comparison of the System with other insulating materials

To achieve the thermal resistance of the system R = 2.50 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)	0,088	88 mm
EPS	0,038 (2)	0,095	95 mm
Mineral wool (high density)	0,036 (3)	0,090	90 mm
Glass wool	0,040 (4)	0,100	100 mm

Source: Own elaboration

(1) Standard EN 13164

(2) Standard EN 13163

(3) Standard EN 13162

(4) Standard EN 13162

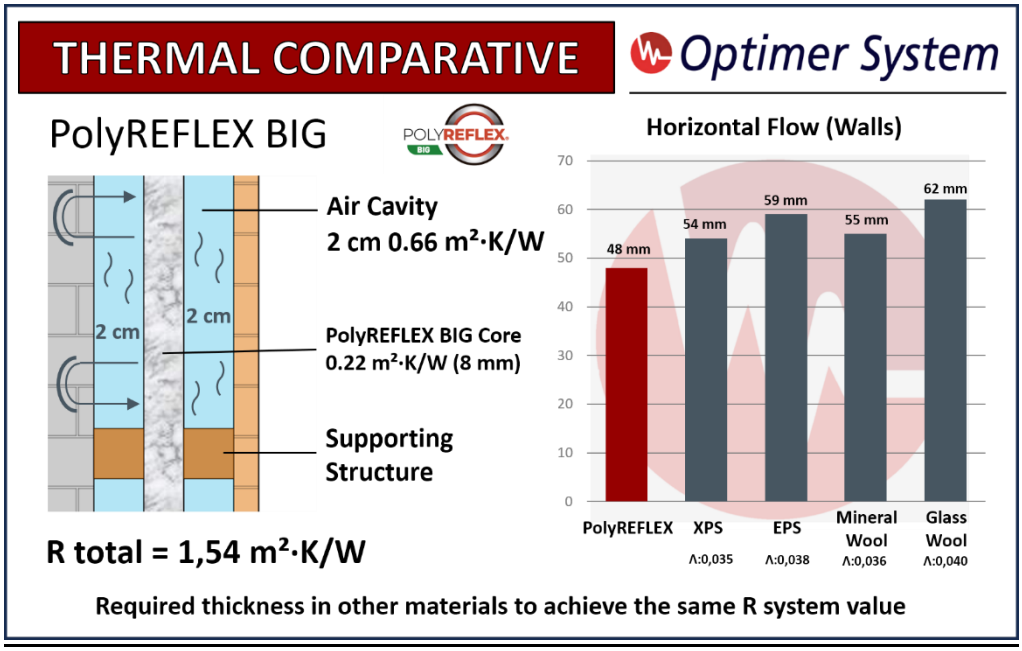
3. Key advantages of PolyREFLEX BIG:

- Only 8 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.

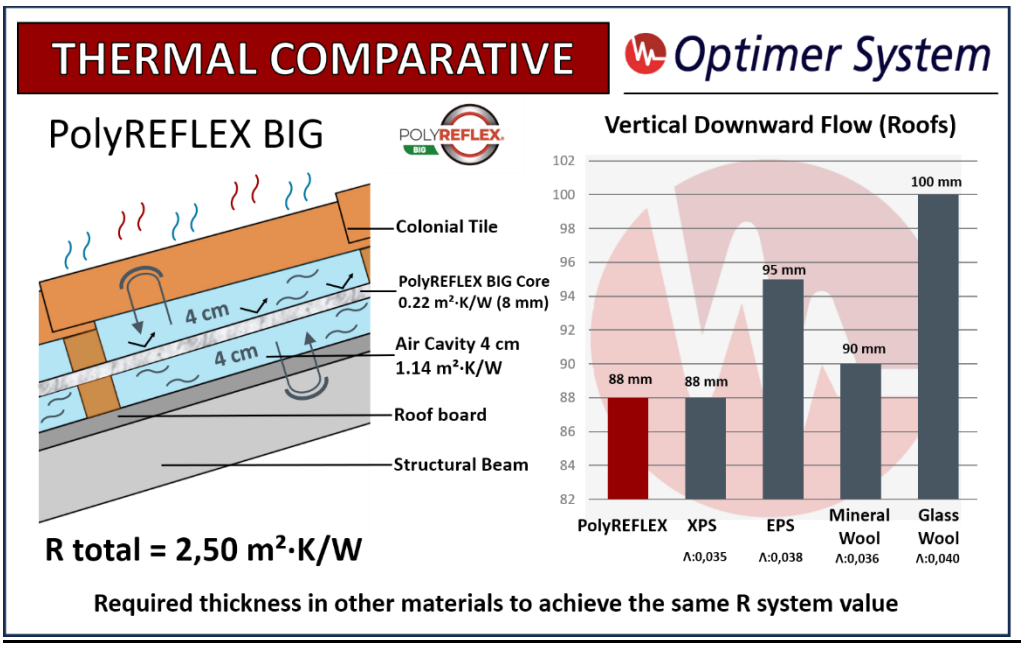
4. Conclusion:

The **PolyREFLEX BIG 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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