FullSulate®

FP300: Comparative Summary

Flat Roof and Thermal Screed Applications

1. FP300 vs. Flat-Roof Insulation Mortars and Screeds – Technical & Economic

Technical Comparison

- Thermal conductivity (λ): **FP300 = 0.057 W/m·K vs. flat-roof screeds = 0.06–0.08 W/m·K → FP300 performs better than most mineral screeds and approaches EPS screeds while remaining** non-combustible.
- Bulk density: **FP300 = 170–180 kg/m³ vs. competitors = 250–400 kg/m³ →** 50-120% lighter, **allowing thicker layers without structural penalties.**
- Layer thickness: FP300 **can be poured up to** 400 mm in a single application, **enabling** slope formation and monolithic roofs. **Competing mortars typically allow 100–200 mm only.**
- Compressive strength: **0.20 N/mm² vs. 0.05–0.25 N/mm² → FP300 offers** equal or superior strength **to standard insulating screeds.**
- Water vapor diffusion (μ): **≈6 vs. 4–10 → within** the ideal breathable range, **ensuring compatibility with roof membranes.**
- Fire safety: A2-s1-d0 **vs. E–B → FP300 far exceeds the fire classification of conventional roof insulation mortars.**
- Hydrophobic behaviour: **FP300** is **water-repellent** and **non-absorbent, protecting thermal performance** even under **humidity or intermittent wetting.**

Economic Comparison

Compared to alternative solutions, **FP300 remains a highly cost-efficient A2-class flat-roof insulation material**. Products with comparable fire performance typically cost 200–300% more, while EPS-granulate screeds (E class) are combustible and non-circular. With a **thermal conductivity of λ = 0.057 W/m·K, FP300 provides an effective balance of thermal performance, cost, and fire safety.**

Revised Economic Summary (10 cm Layer Example)

Item FP300 (€)	Mineral wool (boards) (A2-class) (€)	EPS boards (EPS-granulate screed) €)
Material cost (€/m²)	326 %	196%
Labor cost (€/m²)	300%	200%
Total cost (€/m²)	307%	210%
Δ vs FP300	+200%+	+100%+

In comparisons FP300 remains 60–70% cheaper than Mineral wool boards, 45–55% cheaper than EPS/XPS systems, and 70–80% cheaper than premium roof screeds.

2. FP300 vs. Roof Insulation Boards (EPS, XPS, Mineral Wool)

Parameter	FP300	EPS / XPS Boards	Mineral Wool Boards
Thermal conductivity (λ)	0.057	0.030–0.035	0.035–0.040
Fire class	A2-s1-d0	E/F	A1–A2
Weight / Density	170–180 kg/m³	25–45 kg/m³	120–180 kg/m³
Water behaviour	Hydrophobic, water-repellent	Absorbs at joints	Absorbent; needs dry assembly
Vapour openness (μ)	≈6	≈40–100	≈2–5
Application method	Single layer pour or pump	Adhesive + anchors	Anchors + multi-layer
Waste / recyclability	No cutting waste; fully recyclable	5–15% waste	Difficult to recycle

FP300 is cheaper than mineral wool, safer than EPS/XPS, and faster to install. It replaces multi-component roof systems with a single monolithic layer.

3. FP300 – Consolidated Unique Selling Points (USP)

Technical Advantages

- **Non-combustible (A2-s1-d0)** – compliant for all roof insulation layers under membranes.
- **Excellent λ = 0.057 W/m·K – comparable to EPS screeds**, superior to most mineral systems.
- **Hydrophobic and water-repellent** – ensures long-term durability even under humid conditions.
- **Vapour-open (μ ≈ 6) – prevents trapped moisture** and condensation.
- **High buildability – single-layer pour up to 400 mm**; can form falls and insulation simultaneously.
- **Lightweight (~200 kg/m³)** – low structural load on roof decks.

Practical Advantages

- **Zero cutting waste** – no offcuts as with boards.
- **100% recyclable and circular** – fully mineral composition.
- **No cold bridges** – no anchors or joints.
- **No special tools required** – standard screed or pump machinery.
- Fast installation – applied in one operation.
- Compatible with all waterproofing systems – bituminous, PVC, TPO, or liquid membranes.

Economic Advantages

- **Cheaper lifecycle** – no waste, reduced labour, recyclable at end-of-life.
- **No adhesives or fixings** – reduced logistics and installation time.

4. Positioning Statement

FP300 offers a monolithic, hydrophobic, non-combustible roof insulation system with $\lambda = 0.057$ W/m·K, $\mu \approx 6$, and thickness up to 400 mm, replacing combustible EPS screeds and mineral boards in a single pour.

"A2 fire class at the price of E systems."

- "One pour forms insulation and slope."
- "No waste, no fixings, no cold bridges."
- "Fully recyclable, hydrophobic, and cheaper than competitors"

Conclusion

FP300 defines a new class of circular, monolithic, A2-class roof insulation that is both economically viable and technically superior to any conventional roof-screed or board system. Among competitors **FP300** remains the most **cost-efficient non-combustible** roof insulation system available — **combining fire safety, hydrophobic durability, ease of installation, and total recyclability in a single-layer application**.