

Technical Data Sheet (For testing purposes)

FP Construction®

Típus: FP Thermal Insulation System

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Purpose of the Document

This document is intended to present the application framework of the FP Thermal Insulation System. The system is a flexibly configurable, mineral-based thermal insulation material platform that can be adapted to a wide range of application requirements.

The purpose of this document is to provide guidance for the practical use and evaluation of the system; however, it does not define fixed performance values or mandatory formulations.

Yours sincerely,



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1. Applications

- Thermal insulation of ground floor slabs (e.g. underfloor heating systems, between the concrete and screed layers)
- Thermal insulation of intermediate floors
- Thermal insulation of walkable attic floors
- Thermal insulation of flat roofs
- Thermal insulation of floor structures (e.g. underfloor heating systems, between the concrete and screed layers)
- Thermal insulation of external and internal walls (up to 15 cm when applied manually or by machine; up to 40 cm when applied within formwork)
- Masonry structures (e.g. blocks, etc.)
- Thermal and acoustic insulation of internal partition structures
- Thermal insulation of prefabricated elements
- Internal thermal insulation of sandwich panels
- Thermal insulation of lightweight structures (steel, timber) within formwork
- Prevention of fire spread between adjacent buildings
- Fire- and heat-resistant coating systems for the protection of steel structures
- Thermal insulation of ceilings
- Thermal insulation integrated into bricks

2. Mixing Instructions

a. 50-liter Premix paper bag packaging

- Pour 90% of the required 8–9 liters of water into a 100-liter drum mixer or compulsory mixer
- While mixing, gradually add the contents of the 50-liter bag
- Add the remaining 10% of water
- Mixing time: 8–10 minutes
- Application temperature: between +5 °C and +35 °C
- After mixing, the material can be used within approx. 1–1.5 hours. Material remaining in the mixer may only be used after re-mixing

b. Large quantities – Big Bag Premix, mixing in a truck mixer (e.g. 5 m³)

- Pour 90% of the required 800–900 liters of water into the mixer
- While mixing, gradually add the contents of the Big Bag
- Finally, add the remaining 10% of water
- Mixing time at high speed: 8–10 minutes
- After mixing, the material can be used within approx. 1–1.5 hours. Material remaining in the truck mixer must be kept continuously rotating at the lowest speed

3. Application Methods

Small Areas

For smaller surfaces, mixing can be carried out in a concrete mixer, and the prepared material can be transported using a wheelbarrow or larger containers. The material can be poured in a single step up to a thickness of 30–40 cm. It may also be applied manually on vertical surfaces.

Large Areas

For larger surfaces, pre-mixing is performed at a batching plant or on site using a truck mixer. Application can then be carried out via chute or concrete pump. The material can be poured in a single step up to a thickness of 30–40 cm. For vertical surfaces, application can also be performed using a plastering machine.

Surface Preparation Prior to Application

Before application, it must be ensured that the substrate is sufficiently load-bearing to support the weight of the FP Thermal Insulation system. This is particularly important in renovation projects, as existing plaster may detach from wall or ceiling surfaces, which may also lead to detachment of the FP Thermal Insulation layer. Depending on the substrate type, the use of a bonding bridge (primer) is recommended. The surface must be clean and free from dust and contaminants. Any substances that may impair adhesion (e.g. wax, oil, tar, lime, etc.) must be removed prior to application. If old plaster or other weak layers are present, all poorly adhered cement layers and defective substrates must be completely removed before application.

Manual Application

The pre-mixed material shall be applied directly onto the wall surface using a hand plastering tool, from buckets or a wheelbarrow. The first layer shall be thrown onto the wall with a thickness of 10–20 mm. The material shall then be leveled using a long aluminum straightedge. Subsequent layers may be applied after drying (typically the next day, or after 6–12 hours depending on weather conditions), with a maximum thickness of 4–5 cm per layer. For vertical application, the maximum total thickness is 15 cm.

The finished surface must be allowed to dry. The final layer shall be finished using a sponge float with circular motions.

Machine Application

The pre-mixed material shall be poured into the hopper of a screw-type plastering machine (e.g. Putzmeister PFT ZP). As a first step, a contact layer of approximately 10–20 mm shall be applied. Subsequent layers may be applied after drying (typically the next day, or after 6–12 hours depending on weather conditions), with a maximum thickness of 4–5 cm per layer. The maximum total thickness is 15 cm. For greater thicknesses, formwork must be used, into which the fully mixed material can be poured in a single step. The finished surface must be allowed to dry.

Finishing Works

- The surface must be smoothed; vibration is prohibited
- The surface must be protected from precipitation, wind, and direct sunlight for 72 hours

4. Technical Data

Recommended design thermal conductivity (λ)	0,04 – 0,07 W/mK (conservative design reference value)
Recommended thickness range	5 - 40 cm (to be specified based on the required U-value, load conditions, and overall system build-up)
Water vapor diffusion resistance factor (μ)	typically 5–7
Compressive strength / load-bearing capacity	0,1 – 0,5 N/mm ² to be verified according to the specific application
Dynamic stiffness / impact sound reduction	8 dB – 16 dB to be evaluated for floating floor systems and acoustic applications
Bedolgozási idő	120-180 min
Moisture conversion factors	50% rH: $\lambda_{10,(23,50)}$: 0,042 - 0,072 W/mK $U_1 < 0.052 <$ $f_{s,1} < 0.976 <$ $F_{m,1} < 1.052 <$ 80% rH: $\lambda_{10,(23,80)}$: 0,044 - 0,074 W/mK $U_2 < 0.062 <$ $f_{s,2} < 2.431 <$ $F_{m,2} < 1.025 <$

Sorption isotherm Moisture content (mass/mass, average values [kg/kg])	40% rH: 0,033 50% rH: 0,045 70% rH: 0,068 95% rH: 0,116
Point load performance	- Displacement at the critical point: < 2.6 mm < - Force at the critical point: < 3.13 kN < - Displacement at 20% relative deformation: < 10.05 mm < - Force at 20% relative deformation: < 3.39 kN < - Force at 5 mm deformation: < 3.26 kN <
Water absorption (24 hours)	0,95 kg/m ²
Water absorption (28 days)	1,55 kg/m ²
Compressive force at 10% deformation	1 - 5 kN
Thickness tolerance / measurement accuracy	0,1 mm
Fire classification	To be determined based on application configuration, system build-up, and formulation; typically within the range of A2-s1-d0 to A1-s1-d0

5. Cleaning and Storage

- Tools must be cleaned immediately with water after use
- Hardened material can only be removed by mechanical means
- Storage: in a dry place, protected from precipitation and moisture, on pallets
- Shelf life: 12 months in unopened packaging