Note on English translation / Hinweise zur englischen Fassung
This is a translation of the product data sheet valid in Germany.
All stated details and properties are in compliance with the regulations of the German standards and building regulations. They are only applicable for the specified products, system components, application rules, and construction details in connection with the specifications of the respective certificates and approvals.
Knauf Gips KG denies any liability for applications outside of Germany as this requires changes acc. to the respective national standards and building regulations.

Floor Systems

F328.de

Product Data Sheet 2022-05

FE Eco

Heat pump screed CAF C25-F5 for underfloor heating

Product description

The FE Eco flowing screed is a factory-mixed dry mortar on a calcium sulphate basis intended for mixing with water. It consists of special gypsum, superplasticizing admixtures and aggregates (0 to 4 mm).

Quality classification acc. to EN 13813 CA-C25-F5

Storage

Dry mortar up to 6 months

Quality

In compliance with EN 13813, the product is subject to initial type testing and continuous factory production control and bears the CE marking.

Properties and added value

- Ideal for underfloor heating with a heat pump
- Very low emission, EMICODE EC 1 PLUS
  See www.emicode.com/en
- High thermal conductivity
- High application performance
- Self-levelling
- Very low shrinkage and stresses
- Quickly load capable
- No sinter layer
- Even surfaces with minimum joint requirement
- Controlled, constant quality

Field of application

FE Eco is used in interiors on low temperature range underfloor heating systems, which cannot generate high flow temperatures (e.g. when heat pumps are used). It is ideal for energy-saving residential and prefabricated house construction.

It is used as:

- Heating screed, nominal thickness ≥ 35 mm above the heating elements

Application

Mixing

For 30 kg of dry mortar (1 bag) approx. 5.2 l of clean water is required.

Mixing by machine

FE Eco is mixed with clean water in mixing pumps (e.g. PFT FERRO 100, PFT G 4 or similar) and pumped onto the prepared surface.

Application

Recommended spread Ø 38 to 43 cm, determined using a consistence checking tin 1.3 l on an even, non-absorbent surface. The maximum mortar temperature may not exceed +25 °C. No water should separate from the screed while spreading!

FE Eco levels to a horizontal flat surface when pitched with a screed brush or a dappling bar.

Cleaning

In case of machine application, the machine and hoses must be cleaned within 30 minutes at the latest after machine standstill.

Movement joints

FE Eco hardening properties are volume proven. Structural joints must be implemented with the same position and across the full width in the screed. Further joints may be necessary depending on the bay size and floor plan shape.

It is common practice to provide joints in doorways, on surfaces exceeding 10 m in length, in protruding areas and narrow spaces.

Detailed recommendations can be found in the Code of Practice No. 5 "Joints in flowing calcium sulphate screeds" (IGE/VDPM).

Drying – application of covering

FE Eco must be heated until dry before covering is applied.

FE Eco can be walked on after approx. 12 h. Ventilation can commence after 24 h.

Heat up regulations for FE Eco:
Commence 48 h after application.

1. Set the flow temperature without steps to the highest temperature (min. 30 °C / max. 40 °C) and retain it (without night-time operation mode reduction) until the screed is dry.
2. Test for residual moisture with CM measurement.
3. After drying, reduce the flow temperature so that the surface temperature of the screed achieves 15 to 18 °C. FE Eco is ready to be covered after the residual moisture has reached 0.5 CCM % for all covering types.

Reference values for drying at maximum flow temperature and ventilation: Thickness approx. 55 mm (type A, 35 mm above the heating tube) approx 14 to 21 days.

Please request the detailed heating up regulations with heating up report, refer to the technical information PBo18.de Knauf floor screeds on warm water underfloor heating.

Note	The drying time is, in addition to the screed thickness, mainly dependent on: Temperature, air humidity and air speed. During heating up controlled ventilation for drying of the screed must occur. Preferably by a fan (installed in window), extracting the air from the building.

Note	After coordination of trades with area heating and area cooling systems of the BVF, the measurement points for CM measurement must be arranged.

Note	For further information on planning and design of Knauf floor systems with Knauf flowing screed, see technical brochure Knauf Floor Systems F20.de.

Heating protocol for coverage ready heating

Investor: **Building site:**	**Heating engineer:** **Site manager:**

Every change in the flow temperature (warm water heating) or floor thermostat setting (electrical heating) during heat up and cooling must be documented exactly to 5 °C.
Every drying test should be documented.

Heating system: **Screed applied on:**	**Average screed thickness:** mm **Coverage of heating element:** **min.:** mm **max:** mm

Heat up (coverage ready heating)

Date	Flow temperature / floor thermostat setting in °C	Signature

☐ **Ventilation**
☐ **Window ventilation**

Date from	Date to	Ø h per day

Preliminary drying test
(e.g. foil test [1])

Date	Dry yes/no	Signature

Drying test
(CCM measurement)

Date	Residual moisture in %	Signature

Reduction of the flow temperature

Date	Flow temperature / floor thermostat setting in °C	Signature

Coverage ready heating completed

Date	Outdoor temperature in °C	Signature

Place / Date

Signature (Site manager)

Please keep this document!

1) Does not replace CM measurement before laying floor covering.

F328.de FE Eco

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Technical data

Designation	Standards	Unit	FE Eco
Compressive strength (dry)	EN 13813	N/mm^2	> 25
Flexural strength dry	EN 13813	N/mm^2	> 5
Modulus of elasticity	–	N/mm^2	approx. 17000
Building material class	EN 13813	–	A1fl - non-combustible
Density, drying	–	kg/l	approx. 2.0 – 2.1
Density, wet	–	kg/l	approx. 2.2 – 2.3
Bulk density of dry material, bulk	–	kg/l	1.6
Application time	–	min	approx. 40
Walkable	–	h	after approx. 12
Can be loaded	–	d	after approx. 3
Free expansion when setting	–	mm/m	approx. 0.1
Thermal expansion coefficient	–	mm/(m·K)	approx. 0.014
Thermal conductivity λ_z	–	W/(m·K)	approx. 1.4
Yield from 100 kg dry mortar	–	l	approx. 53
Reaction of mortar	EN 13454	–	alkaline

The stated technical data were evaluated acc. to the respective test standards. Deviations under site conditions are possible.

Material requirement and efficiency

Material requirement	Consumption approx.
Per 1 cm screed thickness	19 kg/m²

Product range

Designation	Quantity	Packaging unit	Material number	EAN
FE Eco	Bulk	–	00424959	4003982291578
	30 kg	42 bags / pallet	00634651	4003982461384

Sustainability and environment

Short description	Unit	Value
Requirements of the German AgBB-scheme	–	fulfilled
Complies with the requirements of the French emission class	–	A+
Certificates	–	Emicode EC 1 PLUS

Observe safety data sheet!
For safety data sheets and CE marking see
pd.knauf.de

Videos for Knauf systems and products can be found under the following link:
www.youtube.com/knauf

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