

FLOWPLUS® FRA

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PROPERTIES

PRODUCT DESCRIPTION

- Single-component universal additive for producing cement flowing screed
- Reduce shrinkage – Shrinkage class SW2
- Strong and long-lasting liquefaction capacity up to 120 minutes

APPLICATION AREA

- Production of high-quality cement flowing screed in concrete batching plant
- Production of high-quality cement flowing screed in mobile mixing stations

TECHNICAL DATA

CHARACTERISTICS

Colour:	yellow
Form:	liquid
pH - value:	8.0 ± 1.0
Density (at 20 °C):	0.97 ± 0.02 g/cm ³
Chlorine content:	≤ 0.10 M-%
Alkali content:	≤ 8.5 M-% (as Na ₂ O-equivalent)
Valid solids content:	81 M-% (calculated)
Processing temperature:	above + 5 °C
Shelf life:	Approx. 12 months – protect from frost and direct sunlight
Supply form:	Disposable container: PE-HD-Can: 18 kg total

Reuseable container: Container:
970 kg total

MIXING MODEL

Mix design per m ³		Unit
Cement ¹	350	kg
Filler (e.g. limestone)	200	kg
Sand 0/8 ²	1400	kg
Flowplus FRA	8-14 ³	kg
w/c-ratio	Approx. 0.80	
Flow table test ⁴	Approx. 240	mm

Criteria		Unit
Flexural strength (28 days)	F4	N/mm ²
Compressive strength (28 days)	C20	N/mm ²
Pull-up strength (28 days)	Approx. 1.0	N/mm ²
Degree of shrinkage	Approx. 300-500	µm/m

STRENGTH

¹ according to BS EN 197-1

² according to BS EN 12620

³ corresponds to 2.5 – 4.0 M-% of the cement weight

⁴ according to Hagermann 5 min after start of mixing

⁵ This self-leveling screed mortar describes an average formulation on the basis of numerous original lab inspections. On demand the customer-specific decisive guide formulation is carried out as an additional service before the initial utilization of Flowplus FRA by suitability testing in the KNOPP material laboratory under inclusion of all the raw materials to be used. The official initial type testing has to be carried out by the responsible batching plant itself before the first use of the screed mortar.

PROCESSING INFORMATION

BASIC MATERIALS

- CEM I or CEM II (A-type preferred) following EN 197-1
- Aggregates following EN 12620
- Use of limestone filler is recommended

FORMULATION

- Observe dosage (2.5 – 4.0 M-% of cement weight).
- Dosage of Flowplus FRA should be carried out in the last third or after complete addition of the mixing water.
- $W/C\text{-ratio} \leq 0.90$
- Sufficient mixing time is to be ensured.
- To obtain sufficient applicable consistency on site (generally > 200 mm) add W/c-ratio of 0.02 per m³ to increase in consistency by 10 mm (flow table test) into the turning drum of the transport mixing truck. Ensure sufficient mixing time (at least 1 minute per m³).
- Flowplus FRA is compatible with all pure-phosphate based retarders.

GENERAL INFORMATION

SAFETY

- Always observe general work hygiene when using our products.
- Flowplus FRA is solvent-free and chloride-free and building-biologically safe.
- Our products do not deteriorate when stored properly. Therefore, stability and reactivity are not affected by storage.
- You can find out more information on handling Flowplus FRA from our safety data sheets.

STANDARDS AND TESTING REGULATIONS

- DIN 18560: Screeds in the building industry
- EN 12620: Aggregates for mortar
- EN 197: Cement – Part 1: Composition, specifications and conformity criteria for common cements

COMMENTS

The raw materials we process and the products we produce are subject to strict factory inspections. Do not use products from other manufacturers when using this product. It is stressed that our products and the procedure must be tested for suitability for the expected construction site conditions. The quality of screeds is essentially influenced by the quality of sand and cement, the mixing rates and the processing in accordance with approved screeding technology. Since we have no control over site conditions or construction practices, no legal liability can be derived from this technical data sheet. Upon the publication all other previous copies shall become invalid.

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