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TECHNICAL DATA SHEET

KNOPP

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CONTOPP®
ULTIMATE 4

PROPERTIES

PRODUCT DESCRIPTION

- Quick to dry semi-dry sand/cement screeds - 3 days
- Increase in strength through synthetic hardening
- Load-dependent reduction of the screed thickness down to 30 mm (for UFH on top of the pipes)
- Reduce shrinkage – Shrinkage class SW2 - allows for compensation of thickness differences up to a maximum of 30 mm
- Protection against rising dampness
- Verifiable in the hardened screed
- Low-emission certified - EMICODE® EC1^{PLUS}

APPLICATION AREA

- For producing high-quality bonded screeds and floating screeds
- For producing of non-standard thin-layered screeds
- For producing screeds on underfloor heating
- For damp or outside areas

GEV-EMICODE® EC 1 PLUS very low emission

TECHNICAL DATA

CHARACTERISTICS

Colour:	green
Detection pigment:	blue / yellow
Form:	liquid
Density (at 20 °C):	1.06 ± 0.02 g/ml
Processing temperature:	above + 5 °C
Shelf life:	Approx. 12 months – protect from frost and direct sunlight
Supply form:	**Disposable container**: PE-HD-can: 20 kg total **Reusable container**: Container: 1000 kg total

MIXING MODEL

1 : 5 mix by weight	Standard	CONTOPP®	Unit
Cement	62.5	62.5	kg
Sand 0/8 [1]	310	310	kg
ULTIMATE 4	-	0.5 [2]	ltr.
w/c-ratio	0.70	0.48	

STRENGTH

Criteria	Standard	CONTOPP®	Unit
Flexural strength (28 days)	F5	F7	N/mm^2
Compressive strength (28 days)	C25	C40	N/mm^2
BRE test (impact resistance)	Category B	Category A	

FLOOR FINISH

Criteria	Standard	CONTOPP®	Unit
Foot traffic	72	24	hours
Receive final floor finish	≥28	3	days

[1] according to BS EN 13139

[2] corresponds to 0.8 V-% of the cement weight

This ideal screed mortar can only be manufactured whilst adhering to the processing information listed below. The details refer to 45mm screed thickness without under floor heating (UFH) and 65mm screed thickness with under floor heating, normal climatic conditions at + 20°C and a relative humidity of 65%. A lower grainsize of sand of less than 8mm can lead to lower strength development. However, when the mixing ratios of the standard mixture and the CONTOPP® mixture are varied, the quality of the screed mortar enhanced with CONTOPP® will generally be higher than that of the standard mixture.

PROCESSING INFORMATION

BASIC MATERIALS

- CEM I or CEM II following EN 197-1
- Aggregates following EN 13139

RECIPE

- Stir the CONTOPP® ULTIMATE 4 before use and regularly during use in order to prevent segregation!
- Recommended dosage range for CONTOPP® ULTIMATE 4:
  Mixing ratio 1 : 5 : 0.8% by weight of cement = 0.5 liters per 62.5 kg of cement
- W/C-ratio ≤ 0.48
- Mix for at least 2 minutes after adding all the components

CONSTRUCTION CLIMATE CONDITIONS

- Protect from draughts and direct sunlight during setting.
- Remove excess moisture through draft-free cross-ventilation (4 times a day for 20–30 minutes).
- Nature of construction and site preparation following general codes of practice.

SPECIAL INFORMATION

MINIMUM SCREED THICKNESS [1]

Flexural strength	Bonded	Unbonded	Floating	on underfloor heating [2, 3]
7 N/mm²	Standard: 20 mm Heavy duty: 20 mm	Standard: 30 mm Heavy duty: 35 mm	Standard: 30 mm Heavy duty: 40 mm	Standard: 30 mm Heavy duty: 40 mm

[1)] Working load: Standard ≤ 2.0 kN/m²; Heavy duty: ≤ 3.5 kN/m²
[2)] In the case of screeds on underfloor heating thickness above the pipes
[3)] No steel reinforcement required

DRYING TIME [1, 2]

Screed thickness	20 mm	30 mm	40 mm	50 mm	60 mm	70 mm
≤ 3.0 CM-% residual humidity [2]	36 hours	2 days	3 days	4 days	6 days	8 days

[1)] Normal climatic conditions at + 20 °C and a relative humidity of 65 % without under floor heating.
[2)] The residual moisture content must be tested prior to the application of the final floor finish (CM-method).

SCREED ON UNDERFLOOR HEATING - START-UP HEATING PROTOCOL [1, 2]

Heating process [3]	24 h after laying	48 h after laying	72 h after laying	96 h after laying
Temperature	35°C	55°C	45°C	25°C

[1)] It can be useful to lengthen the heating procedure for screed thicknesses of > 50mm above the pipes to achieve sufficient drying.
[2)] During the heating phase do not carry out any finishing work and do not cover or block the screed surface.
[3)] Under floor heating must be switched off during the laying of the screed.

MEASURING RESIDUAL MOISTURE CONTENT

- Prior to laying the top flooring, the residual moisture of the screed must be measured.
- According to the KNOPP's manufacturers advice all floor coverings must be laid under a residual moisture content of 3.0 CM-% using the carbide bomb measuring device (corresponds to approx. 4.5 Tramex reading – to be used only as indicator test).

GENERAL INFORMATION

SAFETY

- Always observe general work hygiene when using our products.
- CONTOPP® ULTIMATE 4 is solvent-free and chloride-free.
- Our products do not deteriorate when stored properly. Therefore, stability and reactivity are not affected by storage.
- Find out more information on handling CONTOPP® ULTIMATE 4 from our safety data sheets.

STANDARDS AND TESTING REGULATIONS

- EN 13139: 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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