



Tile Adhesives

K512F.Iv

Technical Data
Sheet

03/2023



K4

Highly flexible tile adhesive

Material

Highly elastic, water- and frost-resistant, thin-bed, high-quality cement-based tile adhesive.

Composition

A mixture of dolomite and natural sand with cement, enriched with polyvinyl acetate polymer and additives to improve the properties of the mixture.

Complies with

LVS EN 12004

Type

C2TES1

Storage

12 months. Store in a dry, cool place on wooden pallets. Seal opened bags tightly and use them first.

Quality assurance

In accordance with the requirements of LVS EN 12004, a product type test has been conducted at a notified laboratory, and continuous control of the manufacturing process is ensured.

The product is marked with the CE mark.

Features and Benefits

- Highly flexible
- Temperature resistance from -20 °C to +80 °C
- High initial adhesion
- No shrinkage or tension
- Water-resistant
- Freeze-resistant
- Load-bearing capacity $\geq 1.0 \text{ N/mm}^2$
- With extended installation time
- With reduced slip $< 0.5 \text{ mm}$
- Hydraulically setting
- For manual application
- For interior and exterior use

Application

Thin-bed tile adhesive for walls and floors, suitable for heated floors.

Suitable for:

- flexible surfaces – Knauf dry floors,
- gypsum boards (installed on the wall in a single layer),
- moisture-resistant wooden surfaces, following the relevant instructions,
- surfaces subject to rapid temperature fluctuations, heating walls,
- terraces and balconies,
- surfaces exposed to direct moisture,
- suitable for "tile-on-tile" installation.

Intended for:

- bonding water-absorbent and non-absorbent tiles,
- bonding degreased and non-transparent natural stone slabs,
- Adhesive for laying clinker tiles – for exterior use. For interior and exterior use.

Application

Substrate

The substrate must be smooth, solid, frost-free, and free of dust, paint, and oil residues. If the surface to be tiled is plastered, the plaster must be applied in a single layer at least 10 mm thick and left unpolished.

Maximum permissible substrate moisture content

Substrate	Max. moisture content
Cement floor covering	4%
Heated cement floor	2%
Gypsum anhydrite floor	0.5%

Priming

Highly absorbent and absorbent substrates must be primed with Knauf Spezialhaftgrund (diluted 1:2 with water) or Knauf Haftemulsion (diluted 1:4 with water), or Knauf Tiefengrund.

Non-absorbent surfaces—such as polished concrete, terrazzo, etc.—should be primed with Knauf Spezialhaftgrund (undiluted) or Knauf Haftemulsion (diluted 1:2 with water). For surfaces expected to be exposed to moisture, apply a waterproofing layer of Knauf Flächendicht or Knauf Flex-Dicht.

Tile only after the primer has completely dried!

Mixing

Pour 25 kg of K4 into 6–7 liters of clean, cold water; mix by hand or with a slow-speed mixer until a homogeneous, lump-free mass is formed; let stand for 5 minutes to allow the mixture to swell, then mix again. Adjust the consistency by adding powder or water to the mixture.

Application

First, apply the mixed adhesive to the entire prepared surface using a trowel or putty knife, ensuring the correct layer thickness. Then, holding the trowel at a 90° angle, comb the surface with a suitable notched trowel (notch sizes are specified in the Application Table). Place the tiles into the adhesive layer and press them firmly into place with a gentle twisting motion. If a film forms on the adhesive (check with your finger!), reapply the adhesive.

The setting and curing time depends on the substrate and the absorbency of the tiles, as well as the air temperature.

When laying tile over existing tile, the old surface must be cleaned with Knauf Intensiv Reiniger. For exterior applications and on floors, the tile adhesive must ensure adhesion across the entire tile surface. In these cases, apply the tile adhesive to both the tile and the substrate.

Use only clean tools and containers!

Grouting

Grouting may only be performed after the adhesive has cured—approximately 1–2 days.

Tiling on Wooden Surfaces

When tiling wooden surfaces, such as plank floors, OSB, or particleboard, the following additional requirements must be observed:

- the wooden substrate must be protected against moisture,
- When tiling wooden floors, the maximum tile size is 30x30 cm,

- Use tongue-and-groove impregnated particleboard panels, which must be securely fastened to the substrate;

- direct tiling of particleboard is permitted only on walls, provided Knauf Spezialhaftgrund primer is applied; however, even in this case, it is recommended to first cover them with gypsum boards.

When tiling floors, direct tile bonding is not permitted—on boards, OSB, or particleboard. In this case, an intermediate layer is created using the Knauf Abdichtungs- & Entkopplungsbahn waterproofing membrane, or Knauf Brown, or Knauf Aquapanel® Cement Board Floor The Underlay panels, or by pouring the self-leveling compound Knauf Fließspachtel Faserflex in a layer at least 5 mm thick.

Tiling of heated floors

The underfloor heating system must be put into operation before tiling.

Before tiling begins, the underfloor heating system must be set to the maximum temperature setting for at least 24 hours. Before work begins, it must be turned off and allowed to cool down. Full heating may be turned on no sooner than 28 days after tiling.

Temperature/Climate

The air and substrate temperature during installation and drying must be between +5 °C and +25 °C.

Protect freshly laid tile flooring from drafts, direct sunlight, and rain! Technical data for application are defined under conditions where the air and substrate temperature during curing is +23 °C and relative humidity is 50%.

Drying

Drying time depends on the substrate's absorbency, air temperature, and humidity in the room.

Cleaning

Wash tools with water immediately after use.

Instructions	Caution!
	The larger the tiles and the lower their water absorption, the slower the adhesive dries.
	Clean up any areas contaminated with adhesive immediately! Also follow the tile manufacturer's instructions and recommendations!
	Do not add other materials to Knauf K4, as this can significantly alter the product's properties.

Other instructions

Soluble hexavalent chromium (Cr(VI)) ion content ≤ 0.0002%.

When tiling less heavily loaded wall surfaces, an adhesive coverage of approximately 70% is acceptable. For exterior work and heavily loaded surfaces, use the combined method (apply adhesive to both the substrate and the tiles); achieving up to 100% adhesive contact with the substrate. This method must also be used when installing tiles with very low (< 0.5%) water absorption. Note that applying a thicker layer of adhesive, working in low-temperature or high-humidity conditions, increases the setting and grouting times for the tiles. If the material gets into your eyes, rinse them with plenty of water and seek medical attention.

This technical data sheet specifies the scope of material use and recommended work procedures, but it cannot replace the contractor's expertise. In addition to these recommendations, work must be performed in accordance with construction requirements. The manufacturer guarantees the quality of the product, but this does not affect the manner and conditions of its use. In case of doubt, a test application should be performed.

This technical data sheet supersedes all previous editions.

Work Safety and Waste Collection

Waste identification class: 170904
(see Material Safety Data Sheet).

Technical data

Designation	Unit	Value / Size
Type	in accordance with LVS EN 12004	C2TES1
Layer thickness	mm	2-8
Processing time	h	3
Tile installation time*	min	30
Tile adjustment time*	min	10
Joint filling time for walls	h	24
Joint filling time for floor	h	48
The surface can be walked on after	h	24
The surface is fully load-bearing after	day	7
Adhesion – concrete	N/mm ²	≥ 1.0
Deformability	mm	≥ 2.5
Slip	mm	< 0.5
Fire reaction class	in accordance with LVS EN 13501-1	A1 / A1 fl
Processing temperature	°C	+5 to +25
Temperature resistance	°C	-20 to +80

* Time depends on tile type and ambient temperature

Consumption

Tile size cm	Notch size of trowel mm	Coverage* kg/m ²
up to 10	4	2.1
up to 15	6	2.9
up to 25	8	3.5
up to 30	10	4.3
30 and over	12	5.1

* Adhesive consumption is not determined by the size of the tiles, but rather by the thickness of the adhesive layer, which depends on the size of the notches on the trowel

Delivery Schedule

Name	Packaging	Item No.	EAN code
K4	25 kg	00281709	4750614006153
K4	12 kg	00281864	4750614006184
K4	5 kg	00281865	4750614006191

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