

The only product approved by the manufacturer for creating an adhesive bond with the subsurface is **Kaindl Wood Flooring** using the adhesive Stauf SMP 950.

The use of this form of adhesive for other Kaindl products and for floors with impact sound insulation is expressly prohibited. All other products must be installed as floating floors.

Gluing wooden flooring requires extensive expert knowledge and should only be carried out by professional flooring specialists with experience in handling adhesives. The application technology department at Stauf is available to address technical questions and can be reached under the telephone number +49 (0)2739 301-0.

Kaindl wooden flooring can be glued to the following subsurfaces:

- Cement screeds
- Anhydrite self-levelling floor screeds
- Mastic asphalt

Various types of preparation work and superstructures may be necessary depending on the subsurface (see page 5/8-6/8-7/8-8/8).

① Material pre-storage

Floor panels must be acclimatised to room temperature prior to installation. To acclimatise floor panels, leave them lying flat and fully packaged in the room where they are to be installed for at least 48 hours. Ensure there is a gap of at least 50 cm between each packaging unit and the wall to allow for even air circulation and to avoid any negative effects of wall temperature and wall humidity. Check each panel carefully for evenness, dimensions, decor and faultless appearance and workmanship immediately prior to installation.

Processed panels are excluded from complaint!

② Room climate

The place of installation must have the following climate conditions during pre-storage (acclimatisation) and installation:

- | | |
|------------------------|-----------|
| - Room air temperature | min. 18°C |
| - Floor temperature | min. 15°C |
| - Relative humidity | 50-70% |

③ Subsurface

The composition and correct preparation of the subsurface is of paramount importance when installing wood floors with an adhesive bond. Check the composition of the subsurface against the German standard DIN 18365. In particular, make sure the subsurface is dry, clean, stable and free of cracks. Expansion gaps should be closed with a positive fit in agreement with the building owner / site manager or mirrored in the wood flooring. Additionally, the entire structure of the subsurface must be known in detail. It must be guaranteed from a structural-physical viewpoint that moisture cannot rise up through the substructure. Strict demands must be placed on the levelness of the substructure when gluing wood flooring to avoid local separation. A depth gauge of 3 mm must not be exceeded at any point over a measured distance of 1 metre.

Determining the residual moisture of the substructure with a CM device is of paramount importance, regardless of whether the floor will be installed as floating or bonded floor.

The maximum levels are:

- | | |
|---------------------|---------------|
| - Cement screed: | max. 2.0 CM % |
| - Anhydrite screed: | max. 0.5 CM % |

These values do not apply to heated screeds; see also Section 6.

It is for these reasons that we advise against installing the floor directly on concrete surfaces or on subsurfaces in direct contact with earth without an adequate seal and heat insulation.

④ Preparing the subsurface

The subsurface must be cleaned, separation layers and slurry removed and the subsurface vacuumed with an industrial vacuum cleaner to remove any dust. Prime the subsurface and apply a layer of adhesive that is at least 2 mm thick. Be sure to comply with the adhesive manufacturer's recommendations with regard to the system and how it should be processed (see page 5/8 - 8/8).

Self-levelling anhydrite and calcium sulphate screeds must be polished and vacuumed in accordance with the BEB pamphlet "Notes on evaluating and preparing the surface of self-levelling anhydrite screeds" (German: "Hinweise zur Beurteilung und Vorbereitung der Oberfläche von Anhydritfließestrichen", published by BEB Bundesverband Estrich und Belag e.V., Industriestraße 19, D-53842 Troisdorf, Tel.:+49 (0)2241/ 3 97 39 60, Fax: +49 (0)2241/ 3 97 39 69). The screed installer may already have carried out this work as a required form of post-treatment. However, it can also be carried out by the floor installer as a service to be billed separately. The inspection of the subsurface in accordance with section 3 always occurs after polishing and vacuuming.

⑤ Gluing the wood floor

Solvent-free, anhydrous, single component reaction resin adhesives pursuant to DIN EN 14293 STAUF SMP-950 or SMP-970 (USA) must be used as bonding adhesives for Kaindl wood floor. These adhesives usually set with sufficient strength and elasticity within 24 hours.

A rigid and straight edge guide must be installed along a reference wall prior to beginning the installation process. Use wedges or adjustable spacers to maintain a sufficient distance of 8-15 mm to the wall and all fixed rising components (columns, radiators, etc.). Maintain a distance of 1.2 mm/m for surfaces with a side length of more than 7 metres (e.g. a distance of 12mm to the wall is required for a side length of 10 metres). The first three rows of panels must be aligned absolutely straight.

The adhesive manufacturer recommends applying the adhesive to the subsurface only with a notched trowel (TKB B9) (consumption approx. 1000 g/m²). The adhesive's working time must not be exceeded under any circumstances; for this reason it is recommendable to apply adhesive to smaller areas measuring at the most the width of two rows of panels. However, care must also be taken to ensure the entire panel is seated in adhesive, both lengthways and widthways.

Set the panels of the first row in the adhesive and connect them along the shorter sides. It is imperative to ensure the first row of panels is aligned exactly, i.e. parallel to the wall. Subsequent rows should be aligned in accordance with the Kaindl installation instructions and pressed into the adhesive layer.

Recommendation

We recommend applying a thin line of adhesive to the tongue (long side) and groove (short side) of each panel prior to installation as protection against moisture penetration. This ensures that joints are sealed with D3 adhesive and prevents the occurrence of damage in these areas.

Care should also be taken to ensure that subsurface adhesive does not come into contact with the tongue-and-groove connection. Surplus subsurface adhesive that is not covered by flooring must be removed while it is still fresh. If reactive adhesive is inadvertently applied to the panel surface it must be completely removed immediately whilst still fresh with a solvent cleaner recommended by the manufacturer (e.g. STAUF special cleaning agent) or with ethanol. General rule: the fresher the adhesive, the easier it is to remove it. Installed areas should be checked for local separation within 30 minutes of installation. Weight should be applied across the entire surface of uneven or deformed elements. This ensures that sufficient adhesive is applied to the rear side of the floor elements and that they are completely embedded in the adhesive layer during the curing process to rule out any local separation (if necessary, use a trowel with larger notches, e.g. TKB B15).

Caution: It is imperative local separation is avoided as wood is a hygroscopic material (i.e. it moves due to swelling and shrinking) and will therefore swell and shrink in accordance under the influence of relative humidity. If the bonded floor swells it will lead to cupping or transverse warping; in extreme cases the floor panel may rise by a number of millimetres.

⑥ Additional measures for installation on heated screeds

Heated screeds must be heated up immediately prior to installation regardless of the season, i.e. including summer months (max. 10 days). Cement screeds can be heated after a drying period of 3 weeks; anhydrite screeds after a drying period of 1 week.

Heat output should be raised in increments of 5°C until maximum heat output is reached. This is also of importance for every subsequent heating period. The period over which the system needs to run at full output depends on the type and thickness of the screed.

Cement screed per cm of screed thickness: approx. 1 day
Anhydrite screed per cm of screed thickness: approx. 2 days

(e.g. cement screed, 6 cm thick = 6 days at full output; anhydrite screed, 6 cm thick = 12 days at full output)

The heating output should then be decreased in increments of 5°C per day. Heated screeds are subsequently heated up again for safety reasons; see Kaindl's information page on "Underfloor heating".

Moisture measurements should be carried out with a CM device at the locations specified by the screed installer or heating engineer prior to installation. The maximum levels are:

Cement screed: max. 1.8 CM-%
Anhydrite screed: max. 0.3 CM-%

It is recommendable to run a second heating cycle for concrete screeds with underfloor heating to accelerate the screed's drying process. In the event this procedure cannot be repeated due to time restrictions, a vapour barrier can be applied to cement screeds with underfloor heating (max. 2.5 CM%).

Vapour barriers cannot be applied to screeds that are susceptible to humidity, e.g. calcium sulphate or magnesite screeds, as blocking in the moisture severely impairs the stability of the screed. See also Kaindl info-sheet No. 10 or "Interface coordination for floor designs with underfloor heating" published by the Bundesverband Flächenheizung e.V.

http://www.flaechenheizung.de/Planer/PDF/BVF%20Schnittstellen_2006_Monitor.pdf

⑦ Other notes and tips

- Bonded wood floors can be walked on after 12 to 24 hours and are fully utilisable after 24 to 48 hours.

To prevent Kaindl wood flooring from drying out excessively during the heating season, please make sure the room temperature does not exceed 20-22°C and that a relative humidity of approximately 50-60% is maintained. If relative humidity falls below 50% the floor will dry out too much, causing shrinkage gaps; as wood is a hygroscopic material these gaps are a natural occurrence and do not represent a reason for complaint. We recommend the use of an electric air humidifier to avoid the situation.

- Panels can also be treated with D3 adhesive to offer enhanced protection against moisture penetration. For tongue-and-groove bonds use Kaindl quality adhesive pursuant to DIN EN 204, or similar white or cold adhesives of stress class D3.

- The adhesive systems listed on page 5/6 - 6/6 have been approved for Kaindl floors by the manufacturer. If you use different adhesive systems they must first be tested and approved by the manufacturer.
- Expansion joints must be installed between rooms and in every surface larger than 160 m². The same applies to areas longer than 16 m or wider than 11 m (in relation to the panel length and width).
- See Kaindl's information pamphlet "Value preservation and cleaning" for information on value preservation and cleaning.
- The notes and information in this pamphlet represent current best knowledge and best available technology. They serve the purpose of providing information and as a non-binding guideline. Claims cannot be derived from this information.

Additionally, the basic installation instructions and notes on installation contained in the installation instruction leaflet apply.

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Gluing Kaindl wood flooring on cement screeds & - self-levelling cement screeds

Floors	Kaindl wood floors		
Gluing	Apply STAUF SMP-950 or SMP-970 (USA) with a notched trowel TKB B9, 1100 - 1200g/m ² , working time 30 min., walkable after 24 hours		
Levelling		Adhesive STAUF SPP-95, min. 2 mm, max. 20 mm, drying time 1-5 days depending on layer thickness	Stauf VEP-190, STAUF VPU-155, poss. Levelling STAUF SPP-95 Contact STAUF AWT
Vapour barrier	Additional vapour barrier required for 2.0 – 4.0 CM%, 2 x STAUF VEP-190, 2x STAUF VPU-155 or 2x STAUF VDP-160 (Contact STAUF App. Tech.)		
Preliminary coat	Optional, for binding dust residue 1x STAUF VDP-130 Apply with a roller, approx. 100 g/m ² , approx. 1 hour Drying	1x STAUF VDP-130 Apply with a roller, approx. 100 g/m ² , approx. 1 hour Drying	Grind surface; milling or shotblasting where indicated
Preparation work	Levelness and stability OK	Stability OK Equalization required	Insufficient stability
	Clean (cleaning polishing) via brushing/vacuuming Check stability and levelness Where indicated, fill cracks with STAUF EGFH-30		
Screed	Cement screed on insulation/vapour barrier Residual moisture 2.0CM% Underfloor heating 1.8 CM%		

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Gluing Kaindl wood flooring on mastic asphalt screed

Floors	Kaindl wood floors	
Gluing	Apply STAUF SMP-950 or SMP-970 (USA) with a notched trowel TKB B9, 1100-1200g/m ² , working time 30 min., walkable after 24 hours	
Levelling	Optional adhesive STAUF SPP-95, layer thickness min. 2 mm, max. 5 mm, drying time 1-5 days depending on layer thickness	Adhesive STAUF SPP-95, min. 2 mm, max. 5 mm, drying time 1-5 days depending on layer thickness
Preliminary coat	Optional 1x STAUF VDP-130 Apply with a roller, approx. 100 g/m ² , approx. 4 hours Drying	1x STAUF VDP-160 Apply with a roller, approx. 150 g/m ² , approx. 1-3 hours drying or 1 x STAUF VEP-190 application with roller, approx. 300 g/m ² , sanding with STAUF quartz sand, approx. 24 hours Drying
Preparation work	Sanding OK, levelness and stability OK	Sanding or levelness inadequate
	Clean via brushing/vacuuming check stability and levelness Where indicated, fill cracks with STAUF EGFH-30	
Screed	Mastic asphalt on insulation layer	

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Gluing Kaindl wood flooring to OSB and P3 (V100) chipboard

Floors	Kaindl wood floors	
Gluing	Apply STAUF SMP-950 or SMP-970 (USA) with a notched trowel TKB B9, 1100-1200g/m ² , working time 30 min., walkable after 24 hours	
Levelling		Adhesive STAUF SPP-95 with added STAUF glass fibre, at least 2 mm, max. 15 mm, drying time 1-5 days depending on layer thickness
Preliminary coat	Optional 1x STAUF VDP-130 Apply with a roller, approx. 100 g/m ² , approx. 4 hours Drying	1x STAUF VDP-130 Apply with a roller, approx. 100 g/m ² , approx. 4 hours Drying
Preparation work	Levelness and stability OK	Insufficient levelness
	Polish the panels, check stability and levelness	
Screed	Two OSB board or chip boards (V100), at least 15 mm thick, bonded at right-angles to one another and screwed in place (9 screws/m ² approx. every 45-50 cm.)	