Needled Carpets | Installation Instructions for Modules
FINETT **DIMENSION** | FINETT **SOLID** modular

1.0 General Notes

The technical regulations of VOB Part C DIN 18365 “Floor Covering Work” including the latest explanations in this connection, as well as the latest technical rules, DIN documents and directives are authoritative for the installation of FINDEISEN needled carpets.

Especially
The technical rules: "Assessment and Preparation of Substrates, Installation of Elastic and Textile Floor Coverings, Laminated Material, Parquet, and Wood-Block Paving; Heated and Unheated Flooring Constructions" published by the Bundesverband Estrich und Belag e. V. (Federal Screed and Floor Covering Association).

as well as

the TKB-8 Technical Rules: "Assessment and Preparation of Substrates for Floor Coverings and Parquets" issued by the Technische Kommission Bauklebstoffe (TKB) im Industrieverband Klebstoffe e. V. Düsseldorf (Technical Commission for Constructions Adhesives of the Industrial Adhesives Association, Düsseldorf). Klebstoffe e. V. Düsseldorf.

Please note:
The TKB-11 Technical Rule “Installation of self-lying SL Carpet Tiles” issued by the Technical Commission for Construction Adhesives of the Industrial Adhesives Association, Düsseldorf are expressly NOT authoritative for modular FINDEISEN needled carpets.

This recommendation is a supplement from the product-specific point of view which has been compiled to the best of our knowledge based on experience and testing.

No guarantee can be given for its completeness, correctness and applicability in individual cases. If in doubt, carrying out one's own gluing tests is advisable.

Our recommendations are in line with the latest developments in installation technology to the extent that we were aware of such at the time of publication.

We have no influence at all on the proper installation, for which reason no guarantee can be given for the results of installation.

The directives for installation provided by the producers and suppliers of installation materials are always authoritative.

2.0 Substrates

2.1 Screeds according to DIN 18560

In its Sections 2, 3, 4, and 7, DIN 18560 "Screeds in the Building Trade" distinguishes between the following constructions and types of screed:

- Screeds and heated screeds on an insulating layer (floating screeds), Section 2
- Compound screeds, Section 3
- Screeds on a separation layer, Section 4
- Highly wear-resistant screeds (industrial screeds), Section 7

Other substrate constructions may be:
Cavity floors | Raised floors | Concrete substrates

Types of Screed

According to DIN 18560 - Section 1, one distinguishes between:

- CA calcium-sulphate screed
- AS Gussasphaltestrich
- MA magnesium-oxide screed
- SR synthetic-resin screed
- CT cement screed

2.2 Dry Constructions

Wooden floors | Chip boards | Plaster boards

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2.3 Floor Heating Systems

A distinction has to be made between electric storage-type floor heating systems and hot-water-type floor heating systems.

For this purpose, refer to the latest FBH-D1 Technical Rule/Documentation "Work Sequence for Heated Flooring Constructions" published by the Zentralverband Sanitär Heizung Klima (Central Association of the Sanitation Heating Air-Conditioning Trades).

3.0 The installers duties to take due care and to give information with regard to the substrates and materials

Before carrying out his/her work, the installer is obligated to check and ensure that the construction of the substrate is in accordance with the rules.

If the requirements for the substrate are not met, then the floorer is obligated to give written notification of objection to the client and, if necessary, to notify the obstruction.

The respective substrate for installation has to meet the requirements of VOB, Part C DIN 18365 “Floor Covering Work” and of the explanations in this connection in their latest version, as well as those of the applicable DIN documents, technical rules and directives.

In general, level substrates are suitable, if they are lastingly dry, free of cracks, clean, resistant to tensile stress, and compression-proof.

Attention must be paid in particular to good surface hardness and strength of the top peripheral area of the substrate.

When he/she inspects the substrate, the installer is obliged to advance objections in cases of ...

... major unevenness

With regard to evenness, the substrate has to meet the requirements of DIN 18202 “Tolerances in Structural Engineering”, Table 3, Line 3.

... cracks in a substrate

Any cracks and signs of cracking have to be closed with a suitable two-component resin material, in particular in cases of floating screeds.

... insufficiently dry substrates

All mineral substrates, with the exception of poured asphalt screeds, have an equilibrium moisture content determined by the material of the various types of screed, which also corresponds to the point when a floor covering is ready to be installed and which must not be exceeded.

Before doing preparatory work on the subfloor, the installer is obliged to take adequate moisture measurements following the calcium-carbide method, using a so-called CM moisture meter (with mineral substrates) or, with wooden substrates, using suitable special electronic moisture meters.

For floor heating constructions, the FBH-D4 documentations “Making Screed Ready for Surfacing by Heating” published by the Zentralverband Sanitär Heizung Klima (Central Association of the Sanitation Heating Air-Conditioning Trades) as well as the FBH-M 2 Technical Rules “Preparatory Measures for the Installation of Floor Coverings on Cement and Calcium-Sulphate Heated Screeds” published by the Zentralverband Sanitär Heizung Klima are all authoritative.

In the course of a record of measures, the property developer/client (and also the architect) as well as the heating installer have to accept by their dated signatures a confirmation of the heating-up and cooling-down phases.

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The maximum permissible moisture content of screed constructions and other mineral substrates, when FINDEISEN textile floor coverings are glued, are as follows:

Cement screed (not heated)	≤ 2,0 CM-%
Cement screed (heated)	≤ 1,8 CM-%
Calcium sulphate screed (not heated)	≤ 0,5 CM-%
Calcium sulphate screed (heated)	≤ 0,3 CM-%
Magnesium-oxide screed (not heated)	1,0-3,5 CM-%

(Depending on the proportion of organic component fractions; ask manufacturers for empirical values).

Note
In rooms without basements or on ceilings above rooms with high relative humidity and high temperature drops, clients have to provide for and produce appropriate sealing measures and/or damp barriers.

In cases of concrete slabs with and without compound screed, one must bear in mind that the figures determined using measuring instruments usual in the trade might not be sound.

The values measured in the upper zone of the substrate do not allow any conclusions about the moisture content of the concrete slab all the way through.

Through suitable measures, the installer is obliged to provide solutions that the moisture from the substrate is being kept away from subfloor preparation materials as well as from the adhesive and the floor covering.

... insufficiently solid surface of a substrate
The installer can test the surface strength of a substrate by means of “grid-type scratch tests” or wire-brush treatment and hammer-blow tests.

If in doubt, it is a good idea to make test areas (guarantee areas) where you glue the flooring acc. to chapter 8.1 of these instructions and tear it off again later on.

... too porous and too surface of a substrate
This is tested through visual inspection.

... required closing actuated by gravity of movement joints in the substrate
The functioning of movement joints in the substrate must not be impaired in any manner, i. e. nor should they be covered with floor covering.

... dirty surface of a substrate, e.g. with oil, wax, enamels or paint residues
Cleaning the substrate by scraping and vacuuming are part of the usual preparatory work, removing dirtying of the aforementioned types, however, being a service that has to be paid for additionally.

... unsuitable temperature of the substrate
The surface temperature of the substrate has to be at least 15 °C, with a floor heating system it should be between 18 and 22 °C.

Higher temperatures of the substrate may lead to changed reaction times while the installation materials are handled.

It is advised not to exceed a temperature of 22 °C even in case of substrates without floor-heating.

... unsuitable temperature and humidity conditions in a room
According to the VOB, Part C of the DIN 18365 “Floor Covering Work” and the explanations /comments in this connection, as well as more far-reaching technical rules and directives, it is prescribed that the room temperature has to be at least 18 °C and that the relative humidity shall amount to between 40 and 65 %.

These are the climatic conditions, under which installation materials and modular needled carpets have to be brought to a moderate temperature/acclimatized.

High temperatures of the room air change the reaction times and drying when the installation materials are processed, which may change the dimensions of the carpet.

A room temperature of 26 °C should not be exceeded.

4.0 Preparatory Work for Substrates

Unless there are other instructions by the client, to guarantee that substrates are suitable for castor chairs, the installer is obliged to finish substrates with a min. 2 mm layer of suitable filler and levelling material.

Continue by levelling out the substrate to the necessary thickness of the layer to create a suitable, evenly absorbent and level surface for gluing the covering.

Depending on the type of substrate, carry out the cleaning measures necessary, it being especially pointed out that the surface of calcium-sulphate screeds always has to be roughened by sanding with a conventional sanding machine in one working operation, using a suitable abrasive paper, and vacuumed with an industrial-type vacuum cleaner, unless there are different and binding instructions by the manufacturer for preparing the surface.

5.0 Auxiliary Installation Materials

Precoats (Priming Coats)

On substrates to which the filler compound does not sufficiently adhere, e.g. magnesium-oxide and calcium-sulphate screeds, a priming coat should be applied.

On cement screed surfaces and on calcium-sulphate/calcium sulphate floating screeds, magnesium-oxide screeds, and poured asphalt screeds, it always is advisable to apply a priming coat as a bonding course for the subsequent filler.

For this, one normally uses dispersion priming coats; on non-absorbent substrates such as magnesium-oxide screed, chip board panels, terrazzo/stone floors, however, it is absolutely necessary to use suitable film-forming priming coats.

With old substrates, special attention has to be given to separation layers first being removed from them.

The relevant stipulations of the suppliers/manufacturers of the installation materials have to be considered as binding.

Fillers

The usual fillers/levelling materials in common use are cement-based. In addition, dispersion fillers and two-component plastic fillers are available for special fields of application.

Bear in mind that poured asphalt screed constructions must always be levelled out to a minimum layer thickness of 2 mm so that there is a migration barrier opposite the bituminous parts of the substrate.

Wooden substrates can be levelled with special elastic wooden floor levelling material suitable for the system.

Substrates for installation made of type “V 100 E 1” chip boards (glued in the groove- and tongue area) are usually levelled with dispersion fillers as migration barriers.

The relevant stipulations of the suppliers of the filler material have to be considered as binding.

Underlays (e. g. according to DIN EN 14499)
(Insulating) underlays may impair the indenta-tion behaviour, the castor chair suitability, and the fire behaviour of FINDEISEN needled carpets.

Therefore, we do not recommend installing FINDEISEN needled carpets on underlays of any kind and, in each individual case, they must only be realized where this has been explicitly authorized by us.

6.0 Storing FINDEISEN Modules

The modules have to be stored flat in their original packing and protected against soiling, humidity, and direct insolation.

7.0 Checking and Acclimatizing Modules

Check lot numbers. Install only material of identical lots. The uniformity of the colour of the modules is only guaranteed with identical lot numbers (manufacture).

The packings of modules of one and the same lot are marked by identical lot numbers. Minor commercial colour variations may occur in every lot.

The modules must always be installed in the same direction and in ascending order of their numbers in the delivery note, even if the sequence of numbers is not continuous.

Observing these instructions does not free the installer from the duty to check the modules for colour uniformity and freedom from other defects (visible faults) before they are laid. The regulations of § 377 HGB (Commercial Code) are authoritative.

Minor or unavoidable colour variations due to production have to be accepted. It is expressly referred to the latest explanation/comment in this connection of the Technical Rules DIN 18 365 “Floor Covering work” (version 09-2016, point 2.8, pages 38 thru 40).

Faults given notice of properly may only relate to modules which have not yet been cut or laid; any more far-reaching claims regarding visible faults in laid modules shall be excluded.

The modules have to be put on a flat surface in the room where the modules shall be installed and left in the room for acclimatization for at least 24 hours.

The floor temperature must be min. 15 °C, the air temperature between 18 and 22 °C (max. 26 °C), and the relative air humidity between 40 and 65 %.

The flooring installer is obliged to inform the contractor that the room climate must also be maintained after the end of the installation work, however, the flooring installer shall not be obliged to ensure that the room climate is actually being maintained.

8.0 Removable Installation of Modules

General Notes
For the installation, observe the arrow marks on the rear side of the modules to make sure that the chosen direction of installation is continuously adhered to.

When installing the modules be sure that to moisten the whole surface with a suitable adhesive system so that they can be removed again.

For removable installation in Germany, FINDEISEN needled carpets must be glued by adhesives that have a general approval (abZ) of the Deutschen Instituts für Bautechnik (DIBt/ German Site Supervision Authority).

8.1 Fixing the Modules

We recommend “tackifiers” of the lowest emission class that are free of low-, medium- and high-boiling solvents.

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Below a list of recommended products (without claiming to be exhaustive):

Product (All below products must be applied undiluted.)	Application Technology
ARDEX AF 185	Always use only coarse-pore foam roller! (e. g. Storch-Rolle Art.-Nr. 170825)
BOSTIK Vliesfix	
EUROCOL Eurofix Tiles 542	
SCHÖNOX Multifix	
STAUF Unifix	Do not use any „fleece roller" and fine-pored foam roller!
THOMSIT K 145	
WAKOL D 3330	
WULFF Fixiergel	Do not use any wipe-off roller!
MAPEI Ultrabond Eco Tack TX+ (Before application, absorbent substrates must always be precoated with a suitable MAPEI primer!)	After installation, the flooring must be evenly run over with min. 50 kg pressing roller within the working time.
UZIN U 2500 (Before application, absorbent substrates must always be precoated with a suitable UZIN primer!)	

Example of a coarse-pored foam roller – to be used for all the above tackifiers.

Structured surface (coarse „orange skin") after the tackifier has been applied with a coarse-pored foam roller and dried off completely.

The tackifier to be used must always be **undiluted** and never be applied with a "fleece roller"; never use a wipe-off grid.

The directives given in the product data sheet of the installation material supplier, in particular with regard to the preparation of the substrate and the flash-off and setting times, are always authoritative.

When other than the above products are used, the suitability will have to be clarified in advance by carrying out your own convincing installation tests, i. e. by realizing test and trial surfaces.

The modules must be installed with closed and tension-free joints. The optimum working time is achieved when the flashed off tackifier shows a textured surface (coarse "orange skin" after application with a coarse-pored foam roller).

The tackifier must have produced a trans-parent, strongly tacky film ensuring that a horizontal and vertical adherence of the needled carpet.

The time to start installation work stipulated by the supplier of the installation material is always authoritative.

Only under this condition is it guaranteed that the carpet safely adheres to the substrate at the same allowing the carpet to be easily removed again.

Shortly after the installation, the flooring has to be evenly run over with a min. 50 kg pressing roller within the working time stipulated by the supplier of the installation material.

Please note:

Anti-slip products (such as UZIN U 1000 or THOMSIT T 425/T 435) must not be used.

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Dry Adhesives
In particular for temporary applications (e. g. in fair and shop installations), there also is the possibility of using dry adhesives for a full-surface installation of the modules.

The installed flooring has to be intensely and evenly run over with a heavy pressing roller (min. 50 kg).

Furthermore, the installation instructions of the suppliers of the dry adhesives are authoritative.

Marginal Tiles
Near the walls or in the area of other stationary parts of the building a functional circumferential expansion gap has to be provided for.

Press-fit cutting of the flooring may cause deformations producing arching in the border areas. Therefore, press-fit cutting must be avoided.

In principle, when carpets are installed, it should not be necessary in the border areas or in the area of other stationary parts of the building (e. g. coves) to insert small strips or other small pieces.

Otherwise, these have to be firmly glued to the substrate in order to avoid that they will possibly be sucked in during maintenance cleanings.

8.2 Installation of the Modules

Tiles (50 x 50 cm)
Mark out with a line a parallel to the main front of the room. The distance to the wall should be identical to the dimension of 2 to 3 tiles, i. e. 100 to 150 cm. Mark the chosen starting point on the line determined.

The arrangement in the room should be chosen in such a way that, in the entrance area and in places which are especially eye-catching (such as door reveal areas) you can, to a large extent, lay entire tiles and are not forced to insert small strips.

Then, install one row of tiles from the starting point along the lining-out. All tiles have to be laid in the same direction (note the marking on the underside of the tile).

Continue installing the tiles from the starting point into the respective directions. Make sure that the tiles are tightly butted together, but not pressed to one another. The cross-shaped joints produced have to coincide with-out pressing the tiles.

Planks (25 x 100 cm)
As for the installation of tiles, a parallel to the main front of the room has to be marked out with a line.

Parallel shifting shows, according to width of the planks, the optimum starting point for the installation.

The arrangement in the room should be chosen in such a way that, in the entrance area and in places which are especially eye-catching (such as door reveal areas) you can, to a large extent, lay mostly entire planks, but at least half elements and are not forced to insert too small residual or marginal parts (which have to be firmly glued).

Continue installing one row of planks in parallel to the lining-out. All elements must be laid in the same direction (note the marking on the underside of the planks).

When installing the second and following rows, the gaps, independently of the chosen type of installation (even or irregular units) must be offset sufficiently by at least approx. 30 cm.

Make sure that the planks are tightly butted together, but not pressed to one another.

8.3 Installation on Raised Floor Panels

Modules laid on raised floor panels have to be installed with their joints offset to the joints of the raised floor panels.

For the installation of tiles, the ideal case is given when the cross-type joint of the tiles comes to lie on the centre of a raised-floor panel.

When installing on raised-floor panels, you must ensure that the (liquid) tackifier used does not get into the joints of the raised-floor panels, since this would make the raised-floor panels glue together.

8.4 Additional Notes regarding the Installation

The carpet must be protected against direct insolation and/or other heat exposure until after the completion of the installation works.

Acc. to the VOB, the necessary measures are considered special services and have to be paid for separately.

Finally, when the modules have been completely installed and glued, protect them against getting soiled until given to the client.

We refer in this connection to the rule that the supplier is obliged to conserve a completed yet not accepted work (protection of the carpet against getting damaged by sub-sequent trades).

Acc. to the VOB, this is a special service to be paid for separately.

Bear in mind that the glued carpet lines must not be covered until the tackifier has set.

When using needled carpet materials on the surface of floor heating screed constructions, only use auxiliary materials suited for this application.

The entire content must be taken into consideration of the latest technical rule/documentation “Interface Coordination in case of Heated Floor Constructions” of the Bundesverband Flächenheizung e. V. (Federal Association of Radiant Heating Systems), as well as the latest technical rules and directives including the latest TKB-8 Technical Rules “Assessment and Preparation of Substrates for Floor Coverings and Parquets“.

Room Air Conditions

Installation materials and floor coverings and, hence, also FINDEISEN modules are designed for rooms in which air conditions generally recommended for the comfort of human beings are lastingly guaranteed.

This includes an air temperature ranging from 18 °C to approx. 22 °C and a relative humidity ranging from 40 to 65 %.

9.0 Cleaning and Maintenance Instructions

Be sure to demonstrably hand over our maintenance and cleaning instructions to the final user (user of the flooring) as early as possible, usefully together with the offer, but no later than on completion of the installation work.

In this connection we expressly refer to the latest comments on the Technical Rules to ATV DIN 18365 “Floor Covering Work”, (09-2016 version, point 3.1.5, page 66).

10.0 Concluding Remark

FINDEISEN modular carpets (in the form of tiles and planks) may give the impression of a predominantly homogenous surface that can easily be taken for a floor covering installed in rolls.

Perceptibility of individual modules within a given area is an inherent feature of the product which depends on the viewer's position, the lighting conditions (light incidence angle), the furniture, and the structure of the wear layer of the modules.

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Only the explanations in these installation instructions as well as the general technical regulations of the VOB, Part C DIN 18365 “Floor Covering Work” are authoritative for the delivery, installation and durability (usefulness and utility) of the modules we supply.

If any faults or damages appear on our floor coverings which are attributable to non-compliance with these directives, we shall not assume any liability or the warranty.

Any claims of recourse in this connection shall be excluded.

In case of doubt we recommend to carry out your own convincing installation tests, i.e. to realize test and trial surfaces.

In the course of technical development, we reserve the right to correspondingly alter the modules we supply and produce.

With the publishing of these technical rules, all preceding technical rules in this connection become invalid.

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