User guideline
Raised floors

NR-SB-01

1 . Raised floors

You have decided on purchasing a raised floor of the Lindner SE.

We ask you to observe the following instructions in order to guarantee an acceptable functioning of this system floor for the long term after its installation in a professional fashion.

This user guideline refers to raised floor panels made of calcium sulphate and chipboard.

1.1 Climatic conditions

The room temperature should range between 15 ºC and 25 ºC at most. The relative air humidity should range between 40 % and 65 %.

Any change in the climate beyond the tolerances specified will cause a swelling or shrinking of the floor system according to the material used.

1.2 Opening and closing of the floor system

If panels are taken out of the floor area or channels for later installation works or similar, it has to be paid attention to that this is done like it is shown on the following illustration. Free-standing pedestal which are not supporting at least one panel have to be avoided.

Taken out panels shall be stacked in a way that visible side is applied to visible side and reverse side to reverse side so as to avoid any eventual smearing of the batch identification on the covering side.

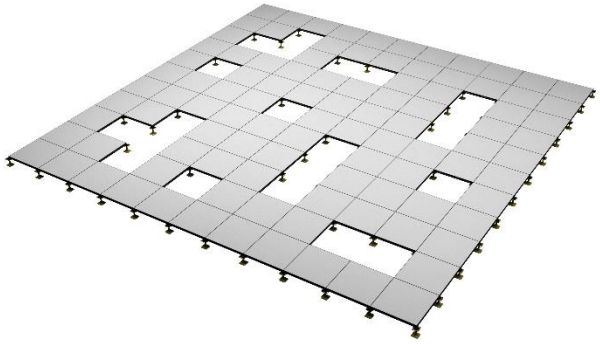
Horizontal forces are only permissible as partial forces of the loading allowed. The loading specifications refer to the closed raised floor. So do not carry out any transports towards an open row of panels.

The raised floor panels may only be lifted with a vacuum respectively a spike lifting device.

The system may only be opened or closed by qualified personnel.

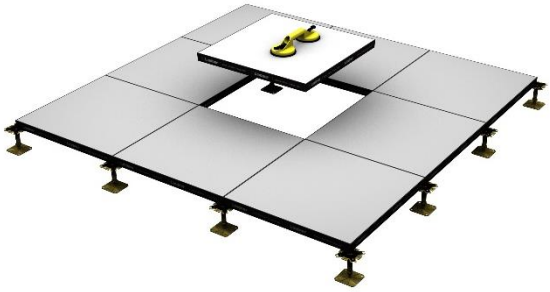
The forming of islands has to be avoided. Do not take out more than 3 panels out of one row.

Exemplary proposal for opening the raised floor:



Taking out of a panel

- Place the lifting device in the centre of the panel edge with a short distance to the edge of approximately 5 cm, lift the panel slightly to loosen it and put it back.
- Then place the lifting device in the middle of the panel and lift it vertically.



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With parquet coverings it is recommended to lay the taken out revision panel on a soft pad (e.g. a cloth) in order to prevent the surface from scratching.

With raised floor panels with stone or ceramic coverings (due to the high weight) it is recommended to lay the taken out panel directly on a soft pad in order to prevent damages of the surface. The panel shall not be transported with a suction lifter if possible.

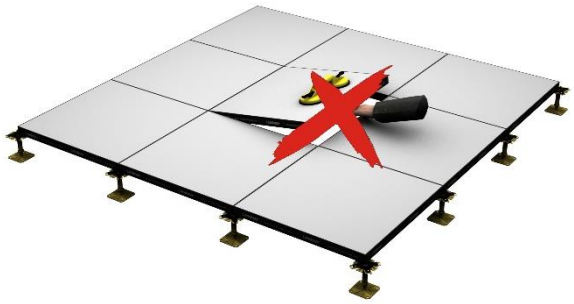
Inserting of panel

Place the lifting device on one side, hold the panel with your hands, lay it with one side on two pedestals, push it to the neighbouring panel and lower the panel with the lifting device.

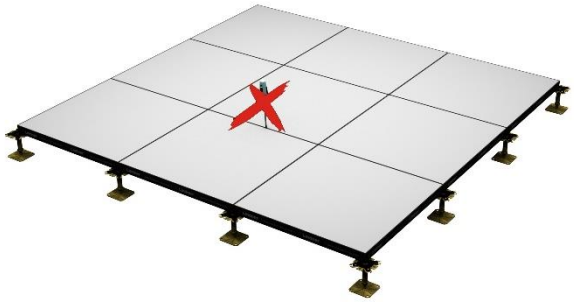
If with the use of a velour covering, the first row of the piles of the adjacent panel is pinched in, the proper, original state can be restored by “lifting” the inserted panel a bit.

Attention

- Do not put your fingers in the gap between the panels with the opening and closing of the system – danger of injury.



- Do not try to take up panels with unsuited tools like a screwdriver or a chisel.



- Detach the lifting device immediately after the use (a vacuum causes the detachment of the covering).
- Do not put taken out panels down on the panel edge.

Basically:

- Remove dirt of pedestal head
- Test if the gasket and eventually the stringers rest on the pedestal head properly
- Check the installation direction of the covering

Taken out panels shall be put back in their original positions and shall not be turned around into a different position. In addition, it has to be checked whether they fit well and only then the next panel can be inserted.

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1.3 Cut outs

Subsequent cut outs within a floor panel have to be made with a minimum distance of 100 mm to the edge. The edges of cuts have to be sealed. Depending on the loading requirement and the shape of the cut out, additional pedestals and/or supporting stringers should be installed.

1.4 Substructure

No pedestals, stringers, bridging profiles or other substructures may be altered. If in exceptional circumstances, such as for subsequent installations, it becomes necessary to dismantle any components, then the raised floor system may not be loaded. Non-compliance might result in the danger of a collapse of the system!

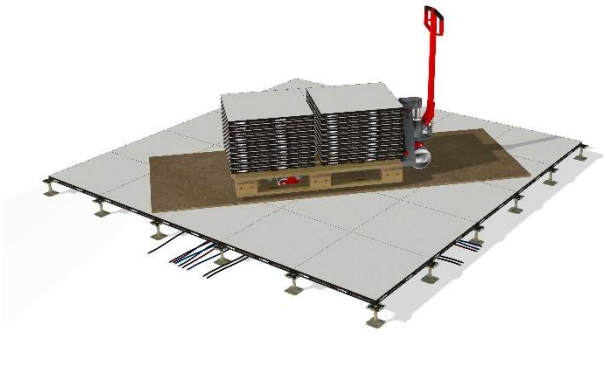
System components which have been dismantled have to be remounted when the work is completed so that the vertical load removal and the horizontal rigidity are again assured.

1.5 Cable installation

Do not draw in cables over the edge of the floor system or a panel. Do not pull off or damage pedestals through overstraining with the installation of cables in the cavity. We recommend to lay cables in from the roll.

1.6 Protective measures

Extraordinary loading



The floor has to be covered with load distribution boards with the transport of heavy loads. The floor covering and the gluing is protected this way and the loads are distributed to a larger area on the floor system.

Dynamic loads from lifting carts, forklifts etc. may not be included in calculations by simply transferring the wheel loads to static loads. In such cases the DIN 1055 as well as the maximum permissible loads of our raised flooring systems have to be observed.

The tests and the classification are made according to current standards.

Continuous contact with water

Continuous contact with water has to be absolutely avoided as this leads inevitably to a damaging of the floor system.

1.7 Floor coverings

WOODline parquet surfaces

An important property for the installation and use of parquet-applied raised floors is the “working” of the parquet. The term “working” covers swelling and shrinkage processes that are caused by the absorption or the release of water (but also of organic solvents). Depending on the type of wood and the direction of growth, different dimensions of swelling and shrinkage will occur. The wood moisture content must already be adjusted to the corresponding usage climate during the production process.

We set our raised floor system with parquet top layer to a room climate of 40 % relative humidity as standard. This corresponds to a wood moisture content of 7.5 % for common Central European woods.

When maintaining a climate suitable for wood with a relative air humidity of 35 – 55 % during installation and use, we guarantee the perfect condition of our parquet raised floor. This corresponds to the climate that is also necessary for human well-being.

For deliveries to Scandinavia, the wood is set to a relative humidity of 35 % due to the lower humidity to be expected there. This corresponds to a wood moisture content of 6.5 % for common Central European woods. A usage climate with a relative humidity of 25 – 45 % applies here.

Deviations from the mentioned climatic conditions will lead to swelling or shrinkage of the parquet top layer due to the material. In addition to the changes in shape of the parquet / of the panel, tensions arise in the adhesive joint due to the different “working” of the floor panel and the parquet layer.

Exception: For WOODline with a **lacquered** surface only in the wood type **oak** or **smoked oak,** the recommended usage climate may deviate **short-time** up to the following values (in italics):

Scandinavia: *20 %* ... **25 % ... 45 %** ... *60 %*

Other countries: *30 %* ... **35 % ... 55 %** ... *60 %*

“Short-time” only means e.g. climatic peaks during the heating period or the summer months.

The “working” or climate-related change of the wood moisture content can be positively influenced by a top-side lacquer coating. The lacquer coating delays the moisture absorption and release of the wood and thus absorbs short-time climatic fluctuations. Parquet that has been surface-treated with floor oil reacts very quickly to changing climatic conditions, similar to an untreated surface. The moisture exchange or the shrinkage and swelling behaviour is not delayed compared to an untreated surface and takes place within a very short time. An oil treatment is used to improve the visual appearance and to protect the parquet top layer from dirt.

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Even in the context of the normal usage climate, we generally recommend providing an edge joint of approx. 8 – 10 mm for rising building components. During installation, constant monitoring should be carried out by means of thermo-hygrograph, which immediately indicate any climate changes or climate exceedances.

If the air humidity is too low, joints may form between the raised floor elements or the parquet top layers, and in extreme cases cracks may occur and the parquet may detach from the edge trim. Conversely, increased moisture levels can cause the parquet top layer to swell. This can lead to more or less severe deformations on the top side of the floor panels (depending on the design of the parquet), but above all to jamming of the entire raised floor, which restricts the function of the floor. The floor panels can then only be opened or closed with extreme effort.

For larger areas, it is recommended to consult the project manager or the product management.

If different climatic conditions are to be expected, consultation should also be held and, if necessary, a different wood moisture content should be specified that is adapted to the conditions of usage.

Loose laid tiles
With loosely laid tiles, it has to be paid attention to that a penetration of the fixation paint into the joints of the raised floor respectively of the transition of raised to hollow floor is avoided. The penetration of the fixation paint can create creaking sounds of the raised floor.
Please pay attention to our application guideline for tackifying glue for loose-laid coverings.

Shading
Regarding velour coverings which can be used with our system floors, we would also like to mention the phenomenon called “shading”, which has been discussed repeatedly in the technical literature.

Shading effects can develop on all velour merchandise irrespective of its quality. The material in such cases is of no consequence, because studies have shown that this phenomenon can occur in the same way both on natural fibres such as wool, silk or coconut fibre and on synthetic fibres such as polyamide or polypropylene.

Shading effects develop entirely irrespective of the support or foundation on which a covering is installed.
Shading effects do not only occur on raised flooring. Studies have shown that carpeting installed next to each other on different foundations have the same shading effect all the way through.

The cause for this has not yet been clarified in detail. Tests, however, have shown that even different velour coverings installed next to one another, or coverings laid next to one another in layers lying one on top of the other will have the respective phenomenon and so today, researchers tend to see local influences originating in the building or location of the building as the cause for this phenomenon.

More detailed information about the shading phenomenon will be provided to you by the *Deutsches Teppich-Forschungsinstitut e.V.,* Charlottenburger Allee 41, 52068 Aachen, which also keeps relevant brochures available.

Cleaning and maintenance instructions
Basic principles conditional to the system have to be considered for the cleaning and maintenance of the floor coverings on system floors. You are provided with information on that topic by our as well as the covering manufacturer’s cleaning and maintenance guideline.

Especially with parquet floor coverings the cleaning and maintenance should exclusively be done with the products which are proven and recommended by us. Other maintenance products could have negative effects on the surface coatings which were applied by us. It can lead to the destruction respectively discolouring of the upper layer.
Please notice our cleaning and maintenance instructions.

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1.8 Contact

Should you have any further questions, however, we are gladly available to provide you with any information.

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Product Management Flooring Systems