

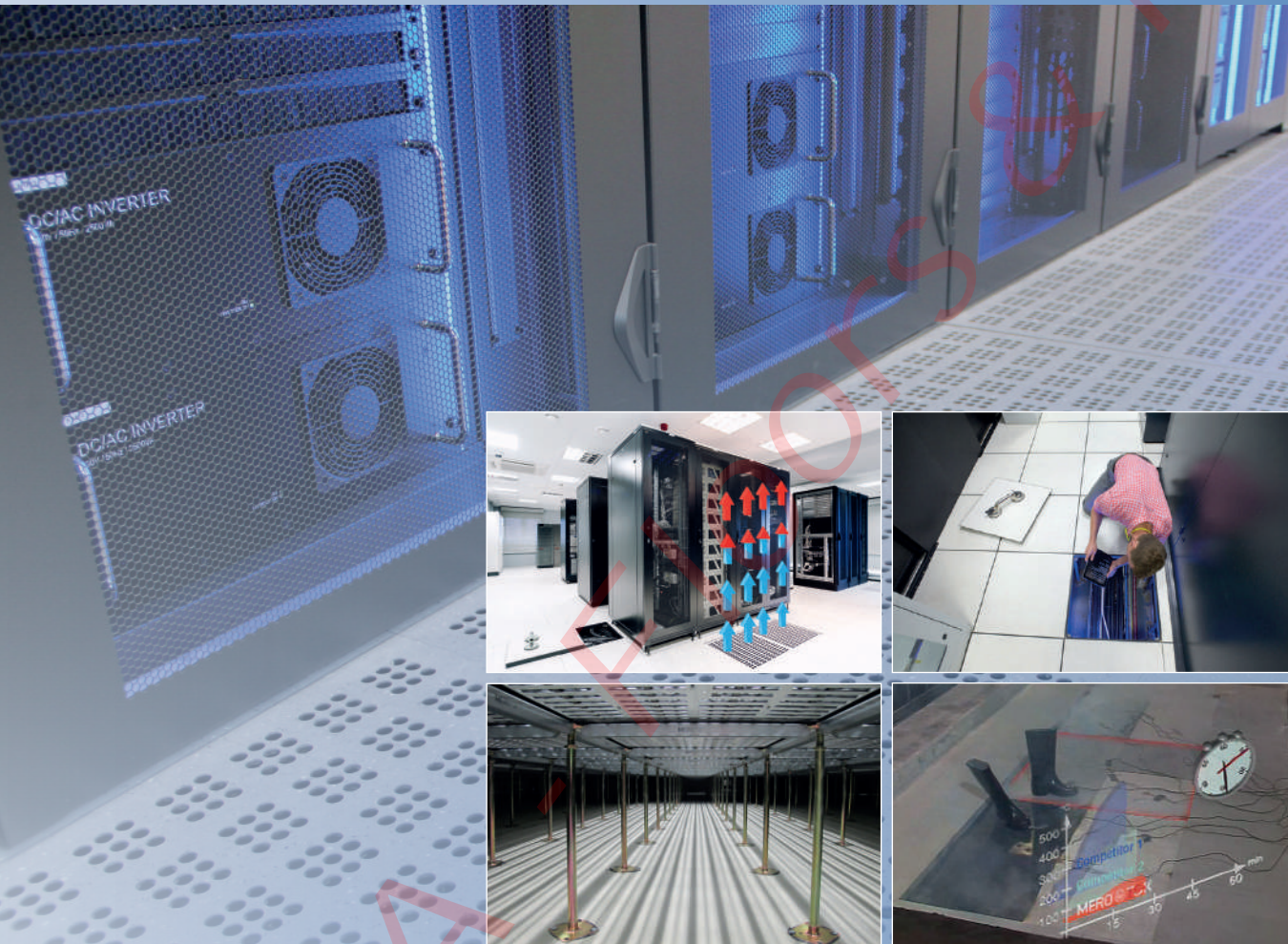


MERO Access Floor / Floor systems for data centers

Innovative solutions from one source

Development
Consulting
Planning
Manufacturing
Installation

Access floor
Hollow floor
Floor covering and
Installation
Services



MERO® 

TEK



Floor Systems

Ready for the future

All started 50 years ago. At that time, MERO received the first order to construct an access floor for an IBM data center.

Later, IBM was followed by many famous names like: Microsoft, Google, SAP, VW, BMW, DHL, Sony, Honeywell, DELL, Samsung and many other important companies worldwide.

Leading companies which rely on the high quality and the years of experience of MERO data center access floors.

MERO-TSK has developed a new standard together with international active data center planners, first introduced already in 2011 for a data center in Singapore.

MERO-TSK has a separate technical division which is also in a position to carry out earthquake-proof applications.

folia-alphaspirit®

From 1960 ...



50 years innovative solutions for data centers

... until present



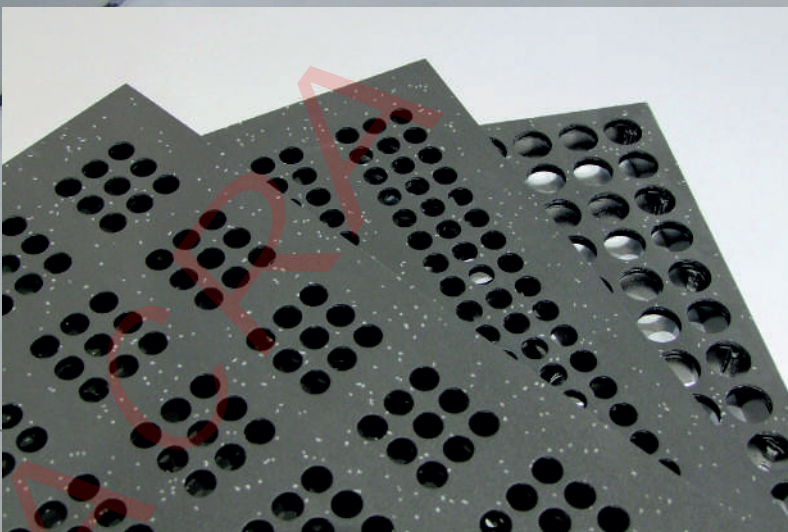
Our know-how for an operational data center

Computer power needs air and cooling

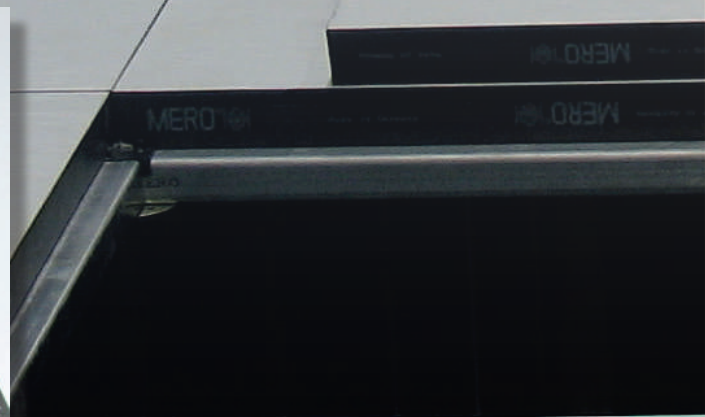


The heat which is generated during the operation of computers must be continuously, safely and cost-effectively removed and cool air must be provided.

Data centers need suitable floor coverings

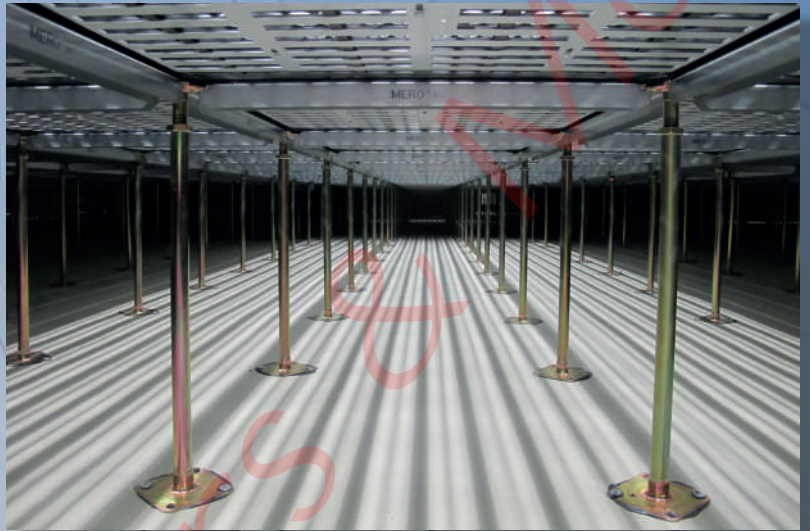


The specific requirements regarding use and conductivity are the basis for the choice of the suitable floor covering.



Our systems meet all your requirements

Computer power needs stability



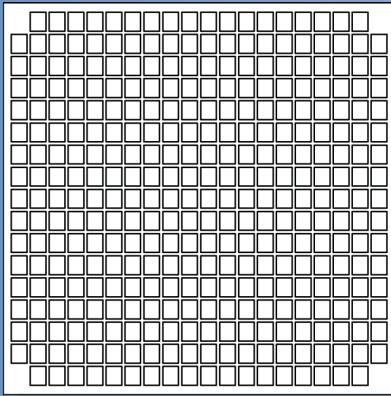
Larger floor heights, heavier racks and requirements for earthquake safety must be considered.

Data centers need fire protection

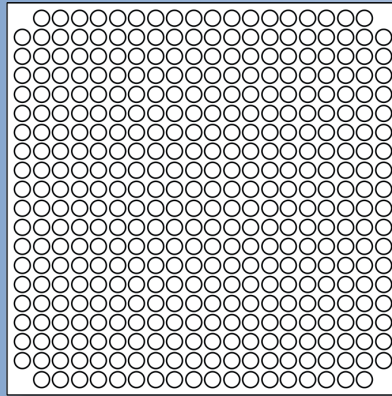


Data centers are huge, closed buildings where easy access to the emergency units is very important.

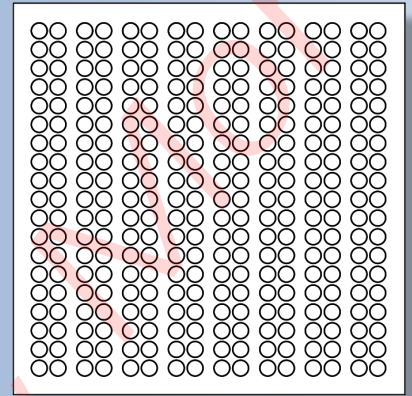
Air conditioning and cooling



65 %

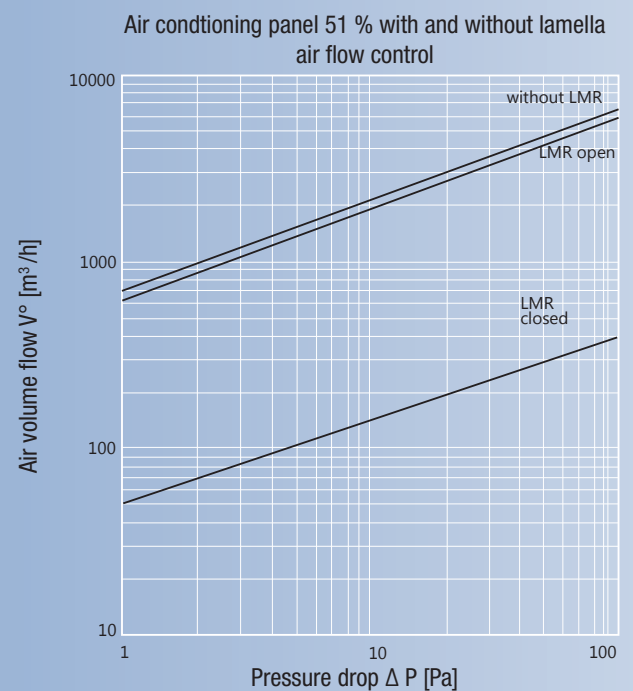
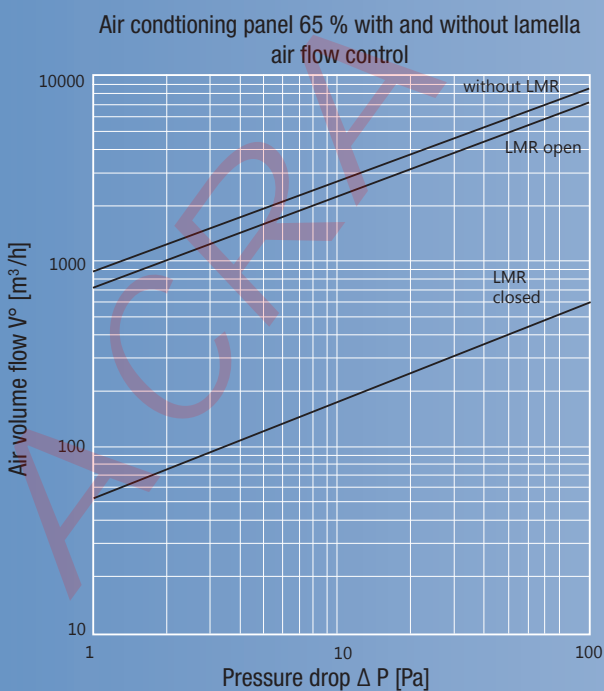
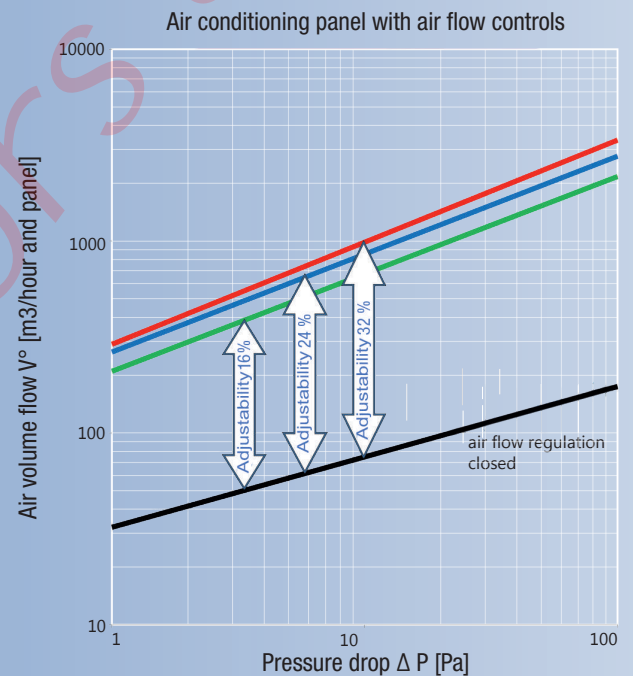
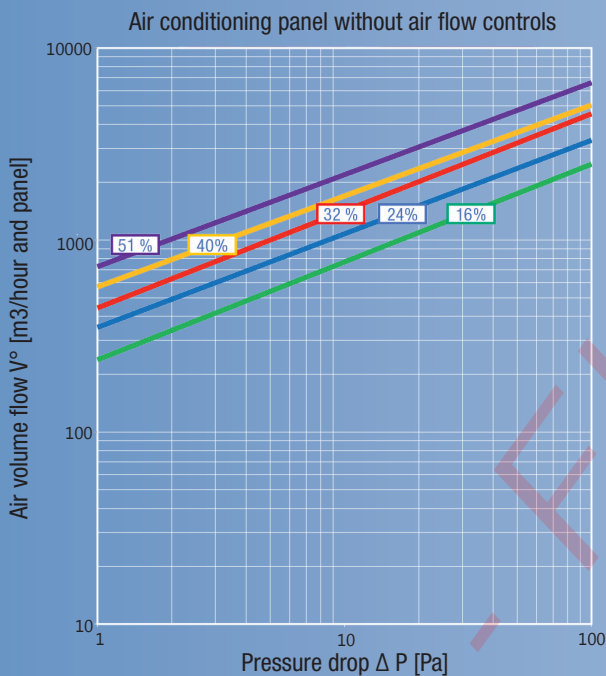


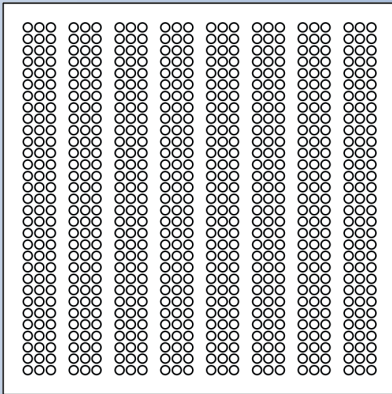
51 %



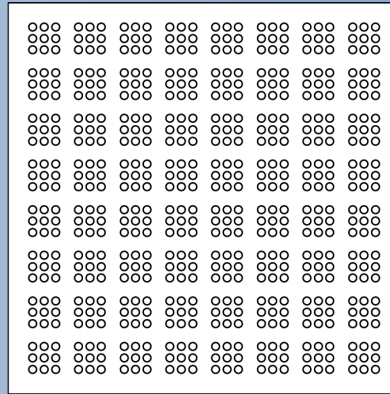
40 %

Volume pressure diagram

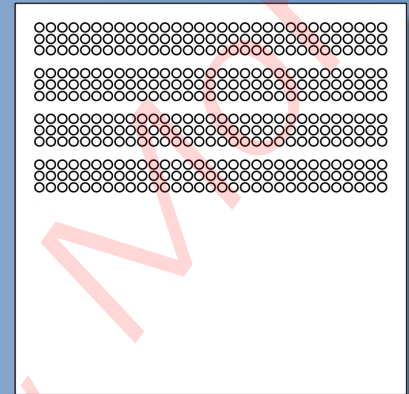




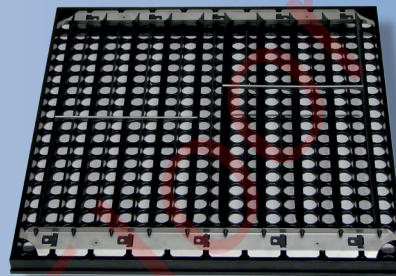
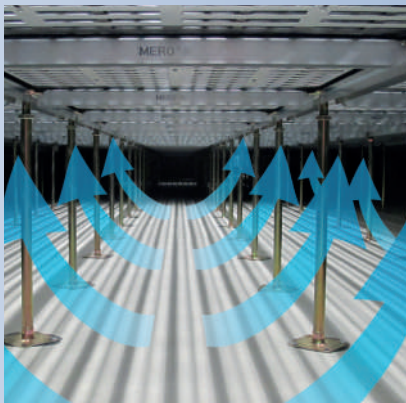
32 %



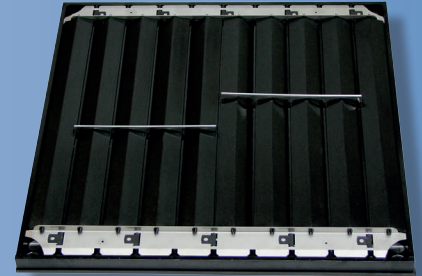
16 % and 24 %



Partial perforation



Bottom view of air conditioning panel with open lamella air flow control



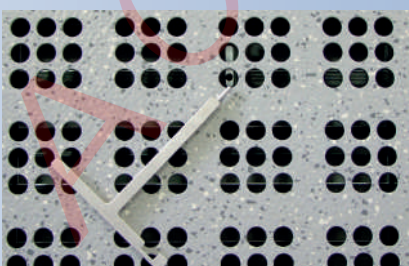
Bottom view of air conditioning panel with closed lamella air flow control

The ventilation and cooling are essential for the operation safety of the data center.

The most common system is the access floor with air plenum where the cold air is transported specifically to the racks by means of perforated panels. Higher and changing computing capacity requires larger free cross-sections and adjustment for the air volume. In order to meet the specific requirements, MERO-TSK offers a range of air conditioning panels with free cross-sections

from 16% to 65%. This allows air volumes up to 2.800 m³ per panel and hour with a pressure drop of 10 Pa. In addition, we provide two continuously adjustable air flow controls which allow the fine-tuning from the above. Contrary to aluminium bar type air grills, racks etc. can be moved safely on the MERO air conditioning panels.

The access floor also provides a physical barrier if water-cooled systems are being used with CRAC units. All supply and waste lines as well as any condensation are contained under the cavity formed by the access floor, so that the data processors will not be endangered in case of water leakage.



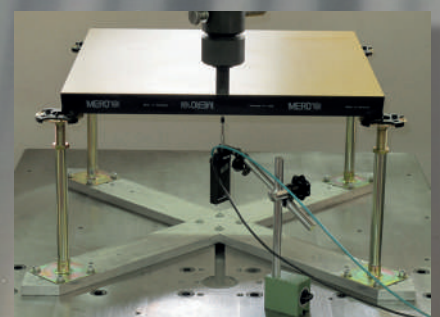
Statics

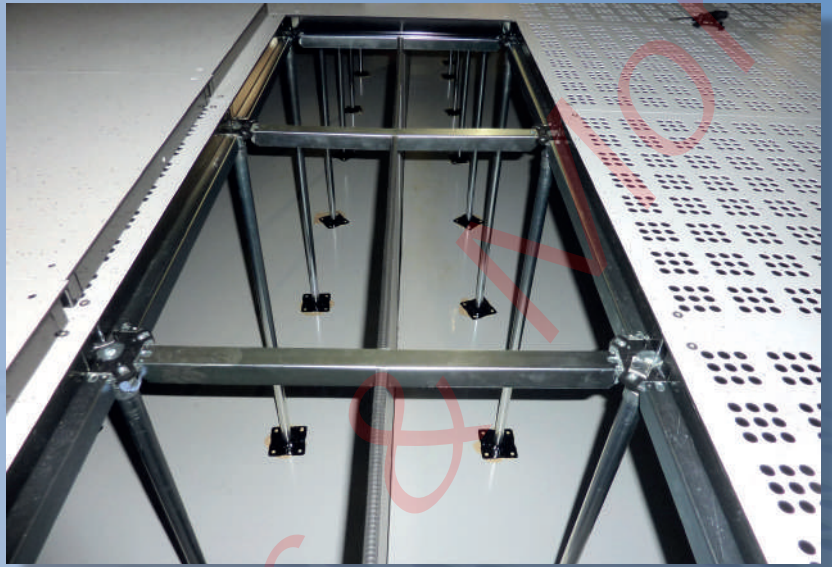
Already during the planning stage the increasing load capacity due to the development of racks with „drawer-system“ (can be retrofitted on request at place of location), serial installations (always two applications in one field) as well as higher construction height (buckling length of pedestals) must be considered.

MERO-TSK meets load requirements according to DIN EN 12825, proved by certificates of conformity.

Specific customer requests such as seismic safety can be provided by our technical department.

Depending on the seismic zone in which the project shall be executed, additional static requirements must be met.



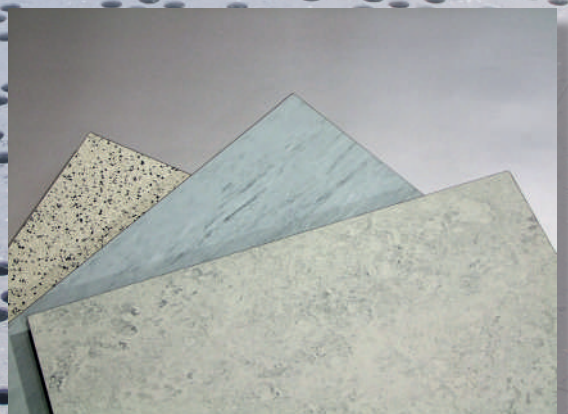
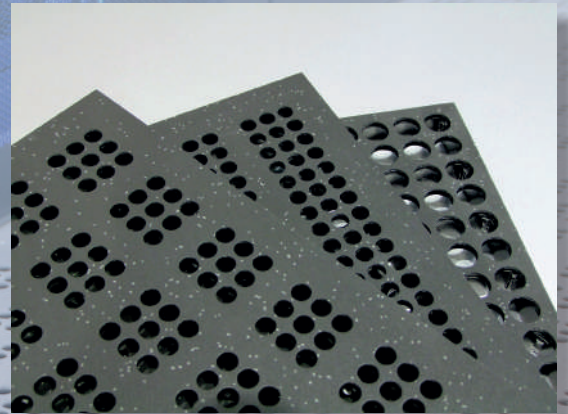
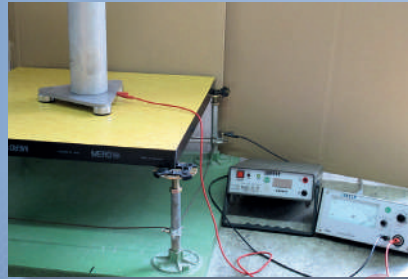


Floor coverings

Standard panels of steel, calcium sulphate and chipboard as well as steel air conditioning panels are provided with durable floor coverings which meet the required conductivity values.

Depending on the requirements, it can be PVC, linoleum, rubber or high pressure laminate. At perimeter areas even textile floor coverings can be used.

For the load application of dynamic loads not only the floor coverings but also the used adhesives are of decisive importance in order to prevent „wave formation“ of the floor covering caused by the rolling loads. A personal consultant is absolutely necessary.



Fire protection

The building material class requirements must be met by the installed floor systems. This applies also to the fire resistance classes. MERO-TSK is able to meet the requirements on a global level. The sample quality guideline (MSysBöR) differentiates between F30 and F30*.

The classification F30 is valid for emergency exits and exit routes and requires the proofs of stability, physical barrier and isolation. F30* guarantees for the stability in rooms from a construction height of 500 mm and is also valid for the air conditioning panels.

Only if all these requirements are met the floors allow sufficient time to exit in case of fire.



Technical data*: Air conditioning panels for data centers

System accessories:

- Continuous air flow 0-32 %
- Continuous lamella air flow 0-65 %
- Panel screwing

*For further technical data
please ask for our product data sheets.

Panel

Dimensions:

600 x 600 mm

Panel thickness:

(without covering) from 28 mm

The air conditioning panel is compatible
with all MERO floor systems

System weight:

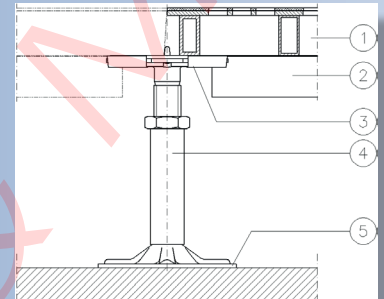
~ 47 – 64 kg/m²

Panel weight:

~ 14 – 21 kg/pc

Panel material:

Steel construction, conductive powder coating,
screwed on request



Understructure

Grid:

600 x 600 mm

Pedestal material:

galvanized steel

Construction height (without covering):

up to 2000 mm

Recommendation:

Use stringers generally from a floor height
of > 500 mm; If high concentrated loads
are required use type 2 switch gear substructure

- ① Floor panel (with or without covering,
panel conductive powder coated)
- ② Stringer or switch gear substructure
- ③ Gasket
- ④ Pedestal (type of construction
depending on floor height)
- ⑤ Base plate glued to subfloor

Load values

Point load:

up to 15.000 N possible

Element class acc. to DIN EN 12825:

class 2 – 6

Ultimate Load:

up to 30.000 N

Safety factor:

≥ 2,0

Ventilation

Free cross section:

16%; 24%; 32%; 40%; 51%; 65%

Air volume:

up to 2800 m³ per hour and panel at
pressure drop of 10 Pa
possible

Air flow control:

possible

Electrostatic

> 10⁵ Ohm

(depending on system and covering)

Fire protection

Building material class supporting panel

acc. to DIN EN 13501 T1:

A1

acc. to DIN 4102 T1:

A1

F30 stability:

possible

Thermal conductivity:

(base material) ~ 50 W/mk

ACRA – Floors & More

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