MERO Heavy Duty Floor

Innovative solutions from one source

Development
Consulting
Planning
Manufacturing
Installation

Access floor
Hollow floor
Floor covering and
Installation
Services

MERO® TSK

Floor Systems

Solutions for high static and dynamic loads
MERO Heavy Duty Access Floor

Access or hollow floors for extremely high loads

Which forces act upon a floor and which forces has an access floor to withstand? High static loads such as in libraries and archives require extreme stability and resilience. Moving loads make situation even worse. In production and storage areas, car parks or airport buildings, recurrent high dynamic loads must be permanently and safely be distributed.

Considering the possible physical acceleration and braking forces, a few tons come together. The solution is the MERO heavy duty access floor. In addition, latest developments in the installation technology require more and more flexible access floor system concepts allowing the integration of air-conditioning and lighting systems. Depending on load bearing capacity, type of load and requirement of accessibility, two different basic systems are available:

- Access floors as further development of the longstanding proven switchgear floors
- Dry hollow floors, also as multi-layer systems

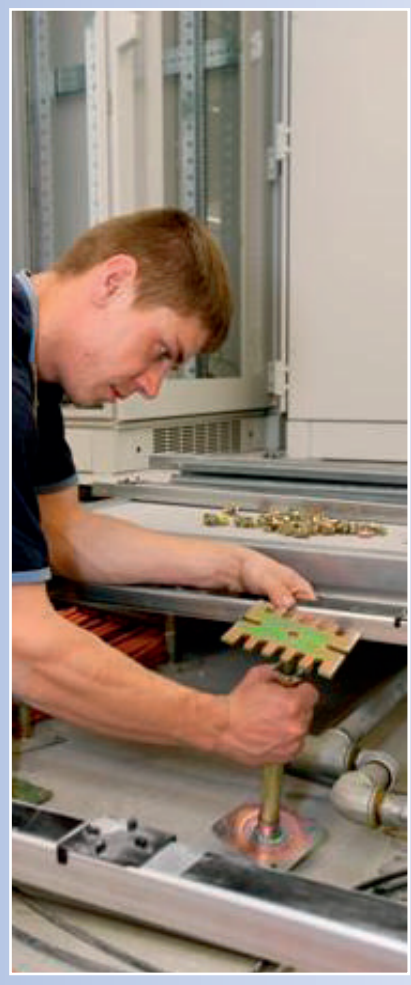
Fields of application

The MERO heavy duty access floor is suitable for:

- Public used areas, such as airports
- Production areas, such as print rooms
- Transport zones, such as hallways
- Archives, libraries or museum
- Data processing centers
- Battery rooms
- Power generator rooms

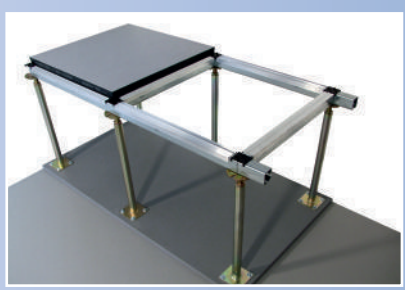
Advantages

- Capacity to carry high static loads
- Capacity to withstand high dynamic loads
- Utmost accessibility
- Customized solutions acc. to the requirements of the different systems
- Project-specific consulting, supported by own application technology, on request
- Safety for user



The floor construction plays an important role

Only the right combination of substructure and bearing panels leads to the desired properties of the floor system. Heavy duty floors are available as access floor or as dry hollow floor.

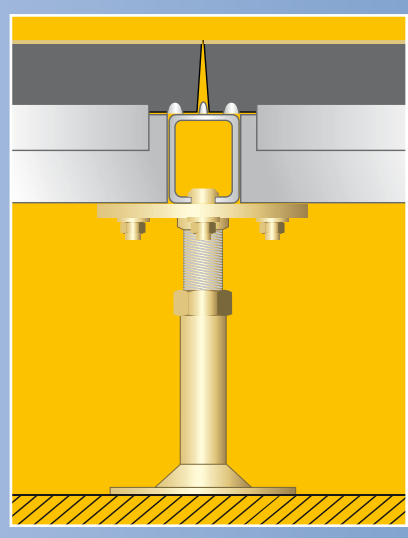


Option Access floor

The standard grid of the substructure - consisting of height adjustable steel pedestals - is 600 x 600 mm. The pedestal feet are generally glued to the raw subfloor and can additionally be dowelled. For load increase and lateral bracing, heavy carrying profiles suspended or screwed or c-profiles screwed on pedestal head can be installed. All screw connections are provided with metric thread and can be disconnected and reconnected as often as necessary. Shearing protection and lateral bracings complete the substructure. The carrying panels of access floor consist of mineral material with load increasing steel sheet underneath or of steel as frame construction with cover sheet according to load. For continually rolling loads, special gluing of floor covering is possible.

Advantages of the heavy duty access floors

- Non-destructive access to the floor cavity possible at any time.
- Static rigid and force-fit connection between pedestal and frame construction.
- Acceptance of tensile and shear forces as well as of bending moments.
- Permanent screwing secured by toothed lock washer
- Disassembly and reassembly without affecting quality
- Steady surface evenness as profiles cannot jam
- The pressing force of the hammerhead bolt onto the c-profile improves the static behaviour (horizontal and vertical forces) of the profiles



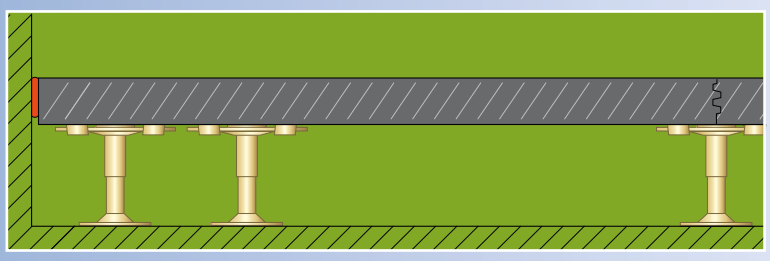
Option

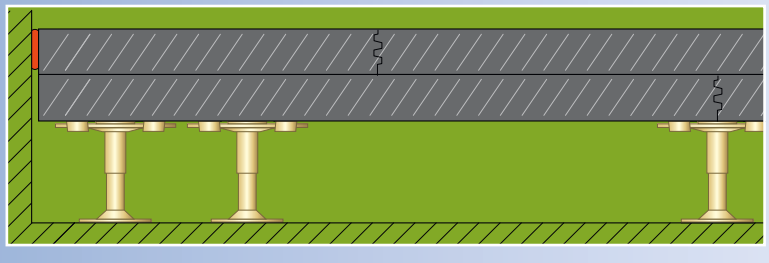
Dry hollow floor

The standard grid of the substructure - consisting of height adjustable steel pedestals - is 600 x 600 mm. The pedestal feet are generally glued to the raw subfloor and can additionally be dowelled. The carrying panels of dry heavy duty hollow floors can be provided as single-layer panel with steel sheet coating underneath or as two-ply all-over glued constructions with variable coating thicknesses.

Advantages of the heavy duty hollow floor

- the jointless area allowes high concentrated loads
- suitable for public areas, such as airports
- particularly suitable for rolling loads
- free choice of floor covering





Heavy duty floor in use : Skylink terminal extension at Vienna airport

At the terminal extension of the Vienna Airport – Europe's largest dry construction site – the existing „airport city" is connected to the new Skylink.
The lunate terminal will have shaped the image of the Schwechard airport after its modification. Existing buildings and the "Skylink" will merge to a remarkable homogeneous unit.
The continuous large glass facades allow the view to all floors of the „Skylink", the airport and the surrounding landscape as well.

Large projects require large team

In November 2003, the further planning of the project was awarded to the ARC Working Group P. Moser-Neumann.
After numerous large office building projects, MERO-TSK International together with rhtb: projekt gmbh was commissioned to provide the hollow and access floors for Skylink. The size of the project and the related exceptional technical requirements were a great challenge and a unique project in Austria.

Unique hollow floor system

A worldwide unique hollow floor system is used which has been developed by rhtb:project gmbh and MERO-TSK Internationel exclusively for the specific requirements of the Vienna Airport (concentrated loads up to 12,5 KN). The under-floor is designed as hollow plank floor so that special pedestals and load distributor plates had to be installed to avoid punching the floor under full load. The surface of the floor system consists of double-ply calcium sulfate panels which are connected to each other by special adhesive. The continuously jointless area is installed floating on pedestals and subdivided by especially developed expansion joints which guarantee enough free moving space for building material to adapt to the climatic conditions. About 2000 m expansion joints subdivide a total area of about 10.000 m^2 which is adapted to the crescent-shaped building. The closed hollow floor system with its high load bearing capacity has the advantage compared to the heavy duty access floor that large-sized floor coverings can be applied regardless from type and use (stone, parquet, high-quality rubber etc.).

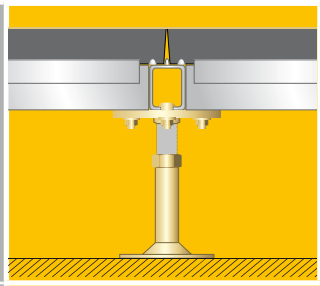
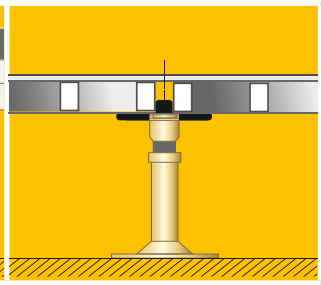
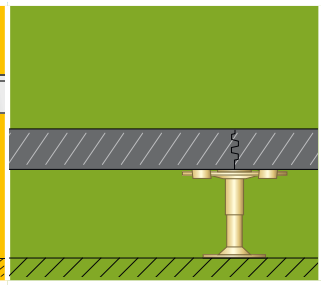
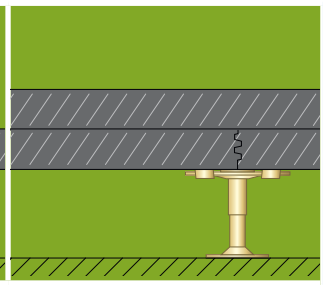
Access floor diversity

Beside hollow floor, various access floor types were installed. Standard type in the office areas and special type of calcium sulfate with applied carpet in the check-in counter area of the departure hall. The special type differs considerably from the standard type due to its stepping, bracings and expansion joints.
The technical rooms of the control center were provided with a heavy duty system for maximum load requirements. In total, about 25,000 m^2 hollow floor and about 10,000 m^2 access floor were installed.
In the technical rooms with switchgear constructions a heavy-duty system for maximum load requirements was installed.

Survey of heavy duty floor types

MERO

For technical data of the different floor types see brochures or product data sheets.

	20 kN	20 kN	14 kN	25 kN
				
	Access Floor		**Dry Hollow Floor**	
	Type 2	**Type 3**	**Combi T single-layer**	**Combi T two-ply**
Application/Use	Unlimited accessibility Corridors in date centers Switchgears Battery systems Emergency power aggregate Fork-lift traffic	Laboratory (acid-resisting) High frequency of dynamic loads Test plants Print rooms High traffic areas	Library Exhibition space Museum	Public areas (e.g. airports) with high frequency Heavy cleaning appliances such as elevating pfatforms
Max. load	Standard up to 15 kN Special up to 20 kN	Standard up to 15 kN Special up to 20 kN	Standard up to 11 kN Special up to 14 kN	Standard up to 20 kN Special up to 25 kN
Static load	X	X	X	X
Dynamic load	X	X		X
Construction height	190 - 2000 mm	80 - 2000 mm	85 - 1000 mm	120 - 1000 mm
Flexibility	X	X		

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