

mitsubishi electric
HYDRONICS & IT COOLING SYSTEMS S.p.A.

IT COOLING

DATA CENTER INFRASTRUCTURE

RC FLOOR

**THE RAISED FLOOR
FOR HIGH EFFICIENCY DATA CENTERS**

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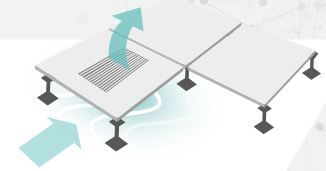
The great need for versatile design of data centers has led to the creation of RC FLOOR, the raised floor designed to easily adapt to future evolutions of IT spaces, avoiding expensive building work.

Thanks to the housing of plumbing, electrical and telephone systems in the empty underfloor space, RC FLOOR ensures that space is organised rationally and efficiently, simplifying intervention and maintenance activities.

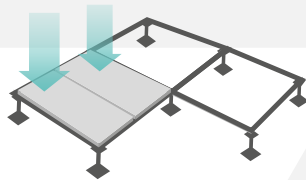
KEY FEATURES

ADAPTABILITY

The panels of RC FLOOR easily adapt to all different kinds of data centers. Thanks to a great variety of modules and materials, RC FLOOR can be further customised according to specific design requirements.

PERFECT AIR DISTRIBUTION

The raised floor configuration utilises the underfloor spaces to channel outlet air released from the perimeter air conditioners. The underfloor spaces are kept in pressure and the air inside the environment remains homogeneous.

STABILITY AND HIGH LOAD RESISTANCE

Advanced steel frame and diagonal stringers are fixed in a way to notably increase the system's solidity, ensuring an improved static and dynamic load resistance.

MODULARITY AND FLEXIBILITY

RC FLOOR has been designed for quick and easy installation and removal of the panels, simplifying the access to the equipment and future plant design changes to the IT environment.

SAFETY AND RELIABILITY

RC FLOOR design has been designed to keep the electrical cables perfectly separate from the air or water flows released from the units, thus avoiding any risk of leakages or malfunctioning.

PERFECT ACOUSTIC COMFORT

RC FLOOR panels utilise soundproof materials like calcium sulphate or wood chipboard, both good at minimising sound emissions, thus ensuring the perfect noise comfort inside the environment.

RC FLOOR

MODULAR PANELS

RC FLOOR is available with two different kinds of 60x60 panels:

- ✓ **Wood chipboard** bonded with high density low-formaldehyde resins, from 30 to 38 mm thick;
- ✓ **Aggregate mix of calcium sulphate and fibres**, available with different thicknesses (generally from 30 to 34mm) and 1500 kg/m³density.

CHOICE CRITERIA	Wood chipboard	Calcium sulphate
Load resistance	Good	Excellent
Fire resistance	Good	Excellent
Dielectric properties	Good	Excellent
Sound insulation	Good	Excellent

FINISHES

The most frequently used top panel coverings in IT environments are highly resilient materials like vinyl and plastic laminates. The panel's bottom is protected with an aluminium sheet or galvanised steel tray.



AIR FLOW METAL GRILLS

Aluminium grills for air transit and distribution under the floor. Available in different dimensions, grills can integrate perfectly inside the panels.



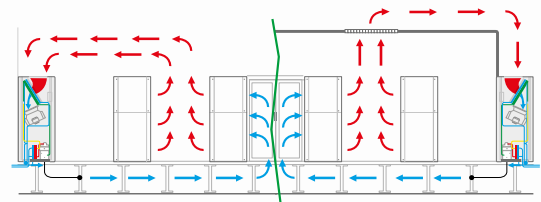
DESIGN CHOICES

Built to offer great advantages in terms of design flexibility, RC FLOOR boasts technological and structural choices aimed at ensuring quick installation of the panels and high load resistance.

CONSTANT AIR FLOW MANAGEMENT SYSTEM

The great increase in racks, power cabling and other accessories that almost completely fill the raised floor void, can lead to unexpected effects in air distribution. The best way to cope with this is to keep constant pressure in the floor void.

Thanks to the Constant Air Flow Management System, all the HPAC units can be connected to several pressure sensors and the air control system automatically manages air flows in order to keep environmental conditions steady for the servers. This function can also be defined as CONSTANT AIR FLOW MANAGEMENT SYSTEM.



SUPPORTING STRUCTURE

In line with RC's great attention to detail, RC FLOOR provides customers with different kinds of stable and sturdy supporting structures.

STF

Special structure with steel feet, treated with 'Sendzimir' hot dip treatment and completely free of the zinc whiskers problem. The cold-pressed 2.6mm thick head with 8 radials to house the stringers, guarantees a snap-on effect, preventing their axial rotation movement and therefore avoiding the production of annoying creaking noises when the system is subjected to loads.



EXTRA

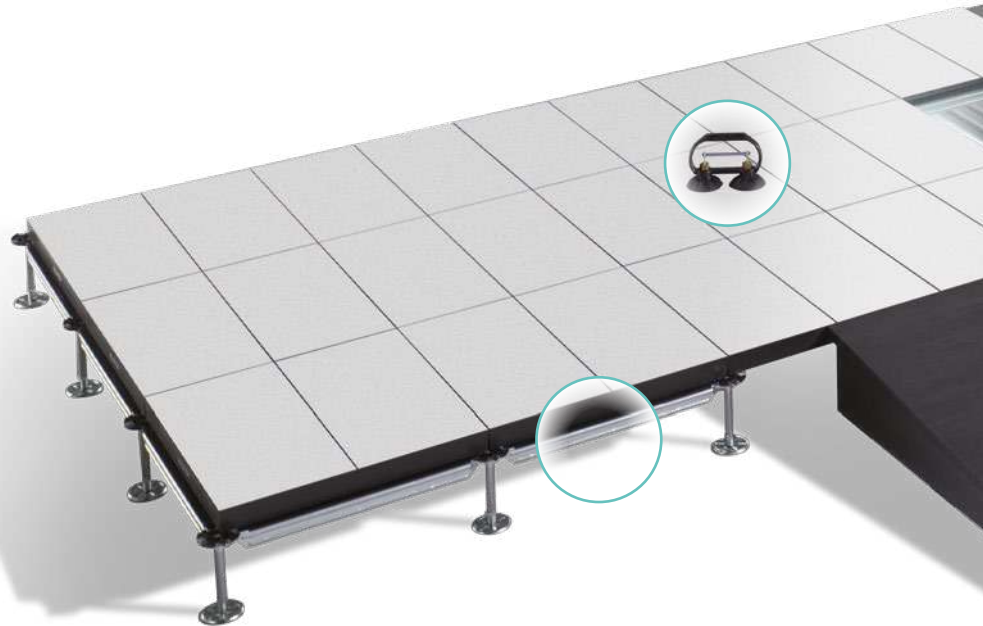
It consists of special columns with square tube cross-sections designed to accommodate galvanised tubular stringers passing over the head of the column and fastened to it with threaded screws.



ACCESSORIES

The access floor's full potential is actually realised through a comprehensive series of accessories, resulting in a truly flexible system where each accessory has a specific job.

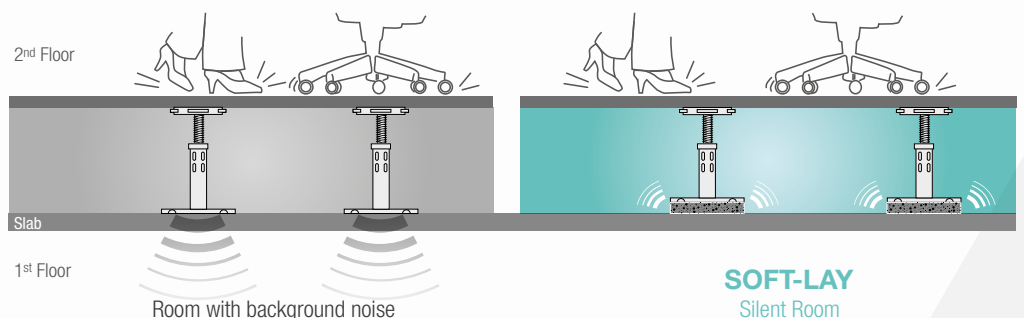
Made in accordance with the strictest international safety standards, these accessories will make the access floor simple, practical and functional.



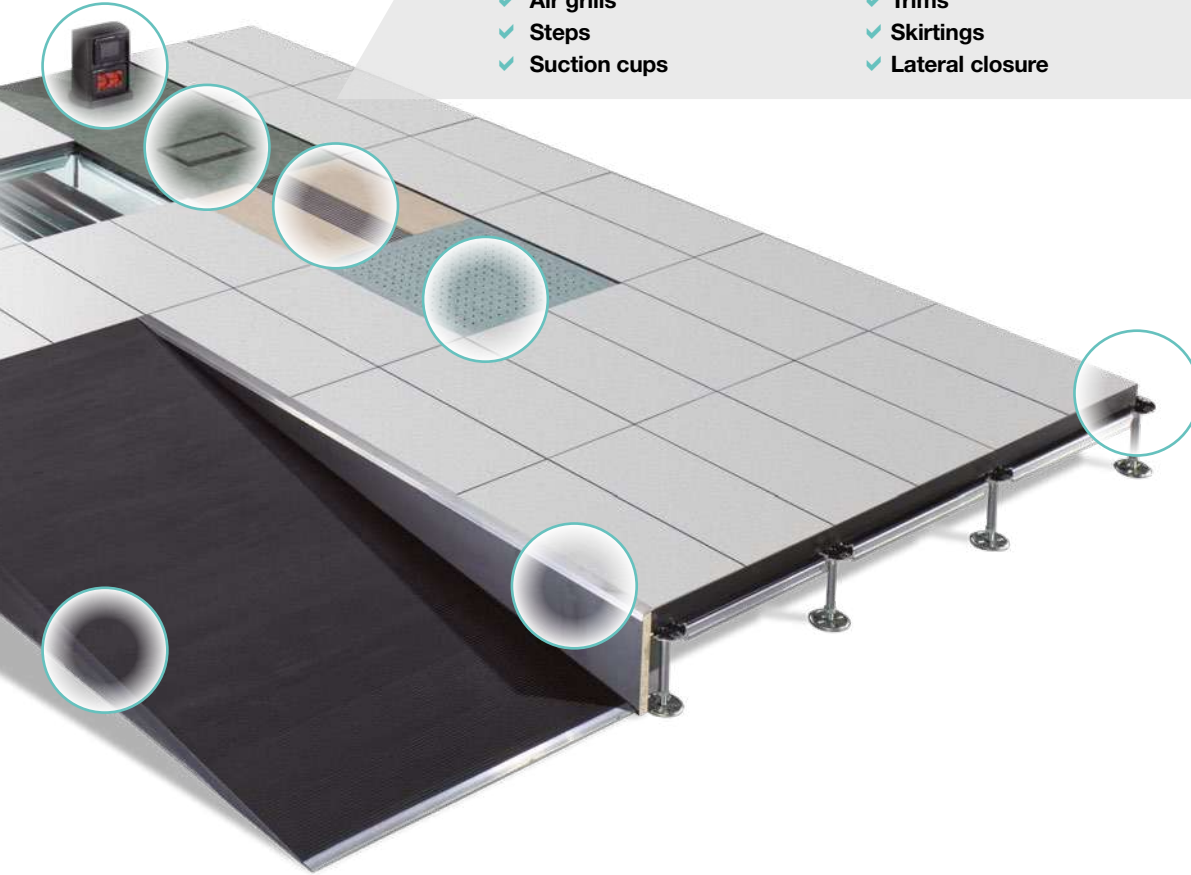
SOFT-LAY: INTERFLOOR NOISELESS RAISED FLOOR

Soft-lay is the ideal solution for ensuring minimum acoustic impact of the raised floor while keeping its technical characteristics unaltered. The raised floor is a modular structure standing on a steel pedestal that can be subjected to dynamic radial loads causing minimal movements. These movements are transferred to the pedestal base causing creaking noises that can be transmitted to the rooms under the installed floor.

To solve these kinds of problems and suit the European laws in the field of 'Passive acoustic requirements of the buildings', RC FLOOR features Soft-lay, a simple element composed of a polymer having a particular structure which is housed between the pedestal base of the metallic substructure and the concrete slab. This element acts as a soundproof pad that breaks the inter-floor noise's transmission and makes the use of the raised floor system extremely comfortable



- ✓ Concealed panel
- ✓ Tower
- ✓ Air grills
- ✓ Steps
- ✓ Suction cups
- ✓ Perforated panels
- ✓ Ramps
- ✓ Trims
- ✓ Skirtings
- ✓ Lateral closure



INNOVATIVE ZINC WHISKERS FREE SYSTEM

In a raised floor system, metal structures and steel trays must be zinc treated through an electroplated process, in order to avoid rusting or oxidation problems.

Electroplating is recognisable by a uniform grey coloured surface which, oxidating, generates Zinc oxide composed of volatile zinc whiskers. Over time these whiskers can sever from their base and 'fly' following the air flows towards the electronic equipment.

As Zinc is a very conductive material, the aggregation of these whiskers can cause great damage to the electronic devices.

RC FLOOR is completely zinc whiskers free, using steel components treated with hot dip Sendzimir galvanising.





for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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