

# TOMBO™ BRAND

Sept. 2021

## NICHIAS SIGMA FLOOR™





TOMBO™ No.6474/6475

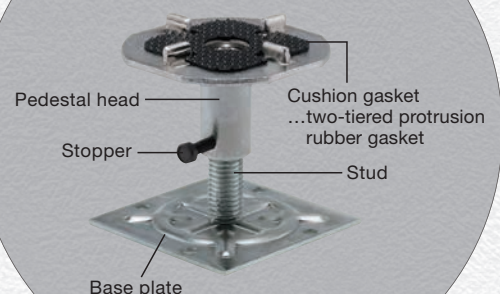
# NICHIAS SIGMA FLOOR™

can meet a variety of ever evolving needs from the general offices to the computer rooms.

NICHIAS SIGMA FLOOR is widely acknowledged by a number of customers that it has excellent performance in livability, load resistance, seismic resistance and so on. Since NICHIAS SIGMA FLOOR has outstandingly high performance which draws the clear line among other kinds of floor panels, it has a number of job references for the informationally cutting edge offices in the re-development area in such as Tokyo, Osaka, Nagoya.



Name of part of the pedestal



\*Product names with TM are trademarks of NICHIAS Corporation.

\*\*"TOMBO" is a registered trademark or trademark of NICHIAS Corporation.





## Excellent Performance of NICHIAS SIGMA FLOOR™

### Solid walking feel

Excellent in solid walking feel and provides comfortable office environment.

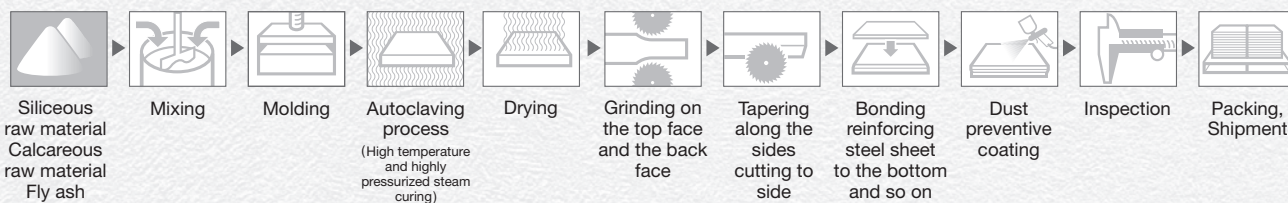
### Safety

The floor panel that is incombustible and of high strength in combination with the steel pedestal can make you rest assured in case of fire and earthquake.

### Durability

Withstands day-to-day and repetitive load and retain the excellent performance for a long period of time.

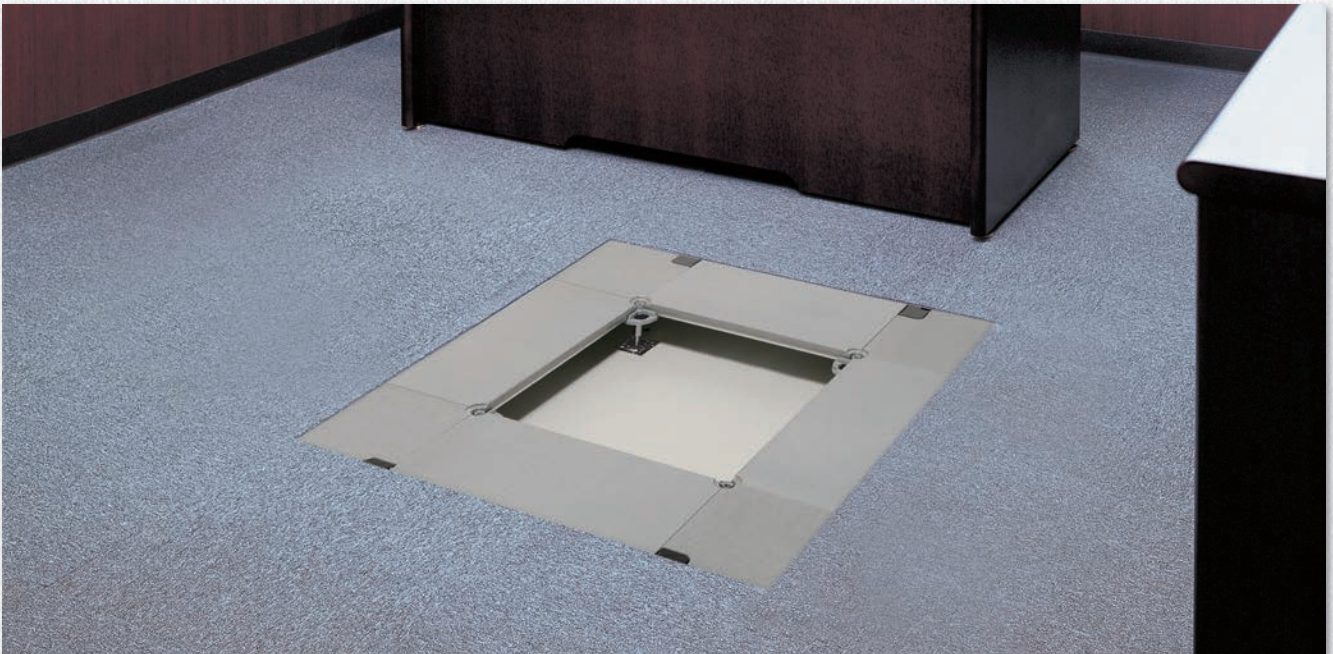
#### [Manufacturing Process of calcium silicate boards]







Standard panel (free type)



Standard panel (lock type)



Floor panel with factory-bonded vinyl tile

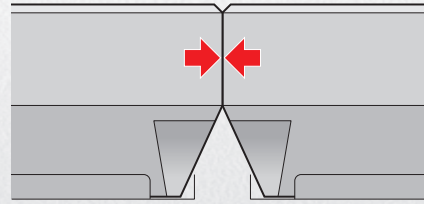


Floor panel with factory-bonded vinyl tile



# 1. Simple and High-performance Raised Access Floor

Since adjacent floor panels touch each other on the edge, the floor panel does not have horizontal and vertical movement providing stable panel setting and it realizes raised access floor that has ease of lifting up and putting it back. Panel lock system can be employed.



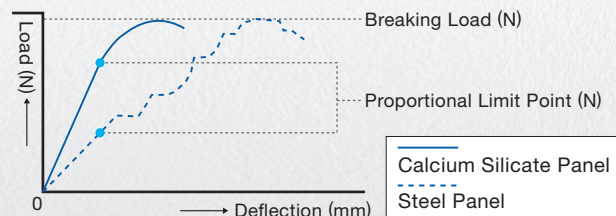
# 2. Three kinds of floor panel according to the load performance

NICHIAS SIGMA FLOOR is excellent in load resistance and can be for use in the general offices, largesized computer rooms and the intelligent offices where OA (office automation) equipment is used in large numbers. You can select the appropriate floor panel from the three kinds of floor panels.

Application	Model No.
For general offices (3000N)	M300A
For general offices (5000N)	M5000A
For Computer rooms (6000N)	M600A

# 3. Excellent durability of "Calcium Silicate Board" proven by proportional limit point

The residual deformation of the floor panel occurs at the proportional limit point. Since the proportional limit point of NICHIAS SIGMA FLOOR panel is high, NICHIAS SIGMA FLOOR is appropriate and reliable also for use in heavy traffic area.



# 4. Environmentally-friendly raised access floor system

**[Recycled material is used]...Certified with the "Eco Mark"**

We use fly ash as raw material for NICHIAS SIGMA FLOOR. Fly ash is a coal incinerated ash from power plants. NICHIAS SIGMA FLOOR contributes to the environmental conservation.



Fly ash

\*It is a registered trade mark of Japan Environment Association.



Panels

Standard panel (FreeType)

Type 0 (zero)

- M300A-0
- M5000A-0
- M600A-0

Type PK

- M300A-PK
- M5000A-PK

Standard Cover  
Lid Type PK

Standard panel (Lock Type)

- M300A-0-AR
- M5000A-0-AR

- M300A-PK-AR
- M5000A-PK-AR

Floor panel with factory-bonded vinyl tile

- M5000A-O-vinyl tile

Vinyl tile  
Anti-static vinyl tile (Standard color type)

No.1    No.17    No.29    No.61

[Order made items]



Decorative stone covering

\*Only for market in Japan.  
\*Stone covering is available only when customers supply the stone covering.

Panel Selector

Application	Panel Model No.	Design Concentrated Load (N/m²)	Size (mm)	Thickness (mm)	Weight (kg/m²)	Finish Floor Height (mm)
General offices 3000N	M300A	3000	500	23.5	8.5	50 ~ 1,000
General offices 5000N	M5000A	5000	500	26	9.5	55 ~ 1,000
Computer rooms 6000N	M600A	6000	500	29	11.5	60 ~ 1,000

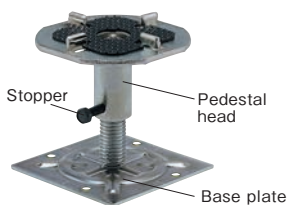


## Pedestals

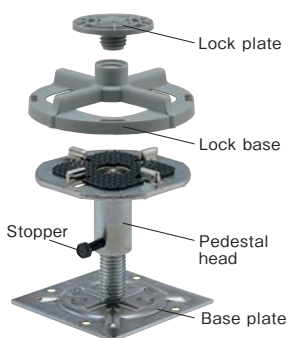
### A full line-up of finish floor height from 50mm to 1,000mm

\*Finish floor height from 300mm are made to order.

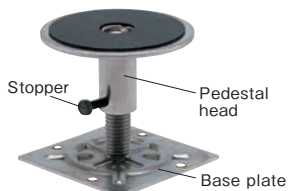
#### [Specifications of the pedestal]



■ Standard pedestal



■ Standard lock type pedestal



■ Border pedestal

#### Standard pedestal, Standard lock type pedestal

D-50  
(T)pedestal



D-80  
(T)pedestal



DL-100  
(T)pedestal



D-200  
(T)pedestal



150-square  
press floor  
pedestal



Pipe pedestal



#### Border pedestal

E-50  
pedestal



E-80  
pedestal



EL-100  
pedestal



E-200  
pedestal



100-square  
floor pedestal



Pipe pedestal



### Specifications of the pedestal

Pedestal type Finished height	Standard pedestal, Standard lock type pedestal	Border pedestal
for 50mm	D-50 (T) pedestal	E-50 pedestal
for 60mm	D-60 (T) pedestal	E-60 pedestal
for 80mm	D-80 (T) pedestal	E-80 pedestal
for 100mm	DL-100 (T) pedestal	EL-100 pedestal
for 125mm	DL-125 (T) pedestal	EL-120 pedestal
for 150mm	DL-150 (T) pedestal (3000N) Di-150 (T) pedestal (5000N)	EL-150 pedestal
for 200mm	D-200 (T) pedestal	E-200 pedestal
for 300mm	150-square press floor pedestal	100-square floor pedestal
for 1000mm	Pipe pedestal	Pipe pedestal



## Cover lid

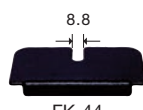


Standard  
Cover Lid  
Type PK

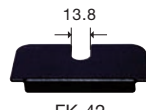


FK-40

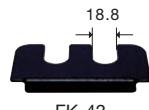
Optional  
Cover Lid  
Type PK



FK-44



FK-42



FK-43

(mm)

### Cover lid vinyl tile

When using the PK panel (PK-51 type) with factory-bonded vinyl tile, Cover lid (FK-51 G, B) is installed to NICHIAS SIGMA FLOOR's cutout.

(FK-51 G, B)

(G:Grey, B:Brown)



\*Please contact us for details.

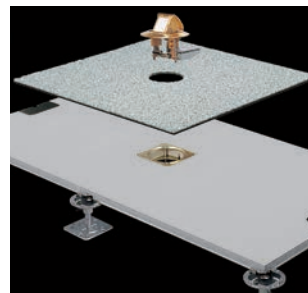
\*Order made item.

\*Caution! Non-standard cutout panels are reduced load performance of the panel.

\*If you stop using FK-42, 43, be sure to return to FK-40. (As you may step on with high heels.)

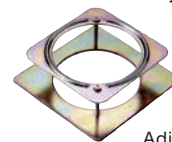
## Pop-up outlet, inner outlet box is installed

### In the case where the pop-up outlet is installed



[In combination with  
the floor panel]

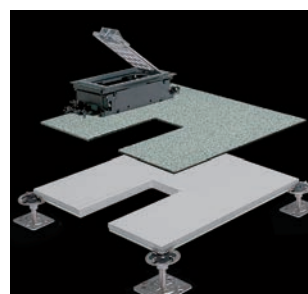
The pop-up outlet is installed to the cutout of the panel with the adjustor.



Adjustor

\*Order made item.

### In the case where the inner outlet box is installed



[In combination with  
the optional panel]

The outlet box is installed to the optional floor panel.

\*Reinforcement pedestals might be necessary depending on the configuration.

\*Order made item.

## Pedestal Variation

\*This is order made items. Please contact us for specifications and details.

### [Security system]

A system where a special screw is used to lock the panels. As the panel cannot be opened / closed with a normal screwdriver or hex wrench, security is increased.



### [Zinc whisker measures]

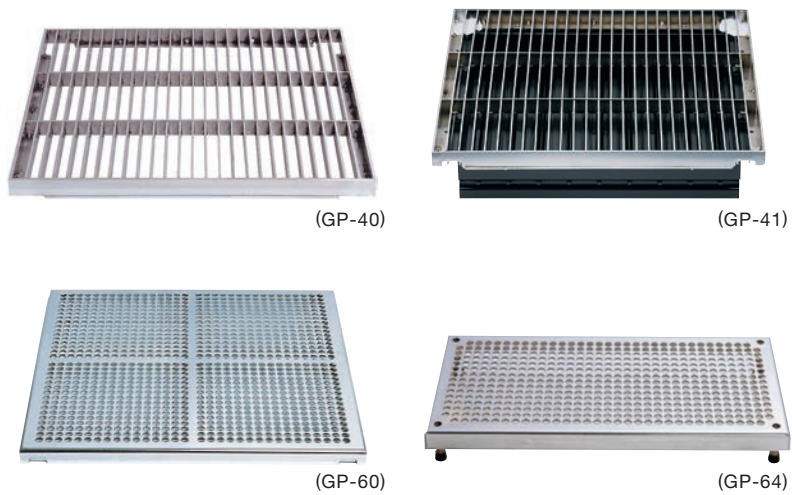
As a measure against zinc whiskers, the pedestal is standard nickel plated.





Grill

There are a variety of grills that have various materials, sizes and open rates. Appropriate grills can be selected according to office applications.

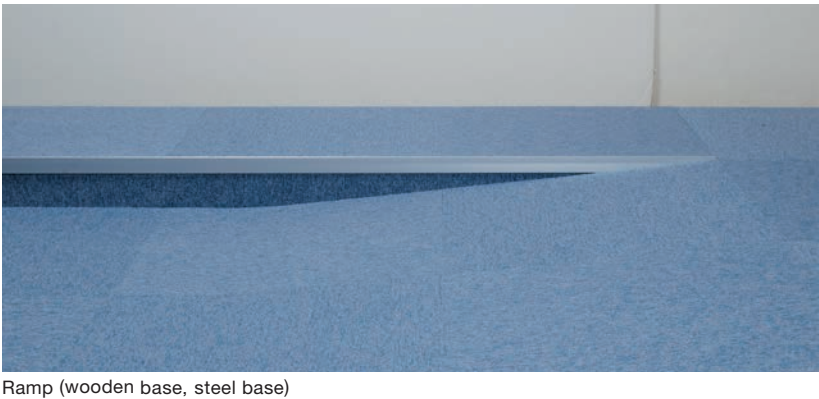


Product	Size (mm)	Open rate	Material	Remarks
GP-40	500×500	75%	Steel	
GP-41	500×500	0 to 62%	Steel	With damper
GP-60	500×500	39%	Steel	Panel Free System and Panel Lock System
GP-64	500×250	37%	Steel	Bolt pedestal

Floor panel for installing air-conditioning outlet

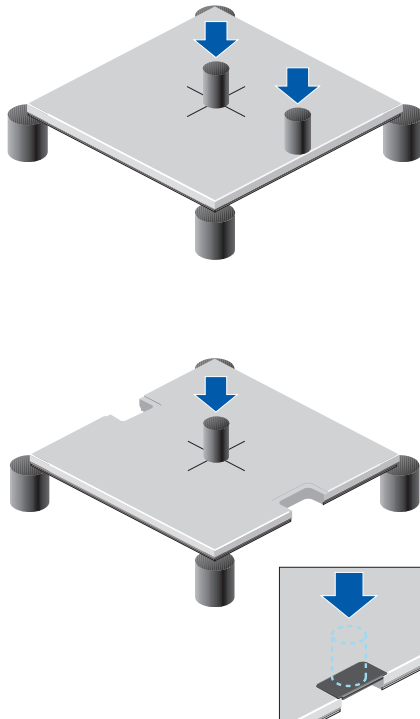


Example of Frame and Ramp





## Concentrated Load test



The floor panel is supported with four supports at the corners. Diameter of the supports is 80mm.

Load is applied at the center of the floor panel and at the center of the side of the floor panel with a loader of 50mm diameter.

### [Type 0(zero) panel]

Model	Load applied at the center of the floor panel		Load applied at the center of the side of the floor panel	
	Breaking load (kN)	Deflection (mm)	Breaking load (kN)	Deflection (mm)
<b>M600A</b>	12 minimum	2.0 max. (at 6kN load)	12 minimum	2.5 max. (at 6kN load)
<b>M5000A</b>	10 minimum	2.0 max. (at 5 kN load)	8 minimum	2.5 max. (at 5 kN load)
<b>M300A</b>	9 minimum	2.0 max. (at 3 kN load)	6 minimum	2.5 max. (at 3 kN load)

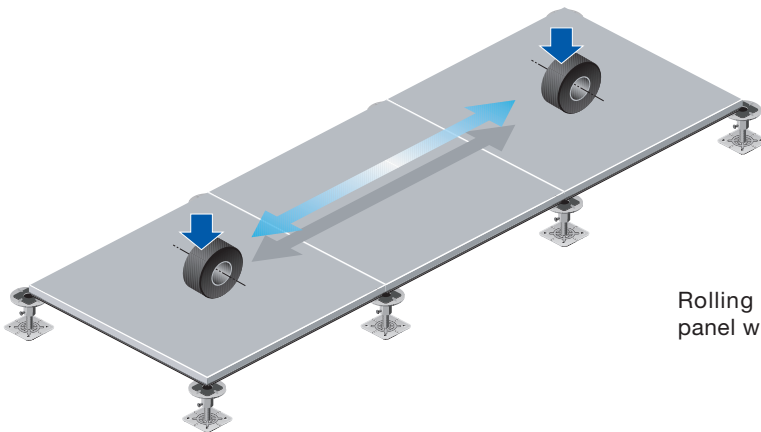
\*The above figures can be used for specification purposes.

### [PK panel]

Model	Load applied at the center of the floor panel		Load applied at the center of the side of the floor panel (load applied on the steel cover lid of 2.6mm thickness)	
	Breaking load (kN)	Deflection (mm)	Breaking load (kN)	Deflection (mm)
<b>M300A</b>	9 minimum	2.0 max. (at 3kN load)	6 minimum	2.5 max. (at 3kN load)

\*The above figures can be used for specification purposes.

## Rolling Load test



Rolling load is applied to the center section of the floor panel with a urethane covered caster.

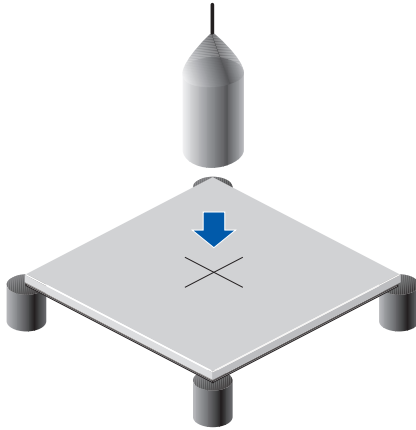
### [Rolling load]

Model	Rolling load (N)	Number of test (times)	Damage
<b>M600A</b>	5000	10,000	No damage
<b>M5000A</b>	5000		
<b>M300A</b>	3000		

Measurement organization: NICHIAS



## Impact test

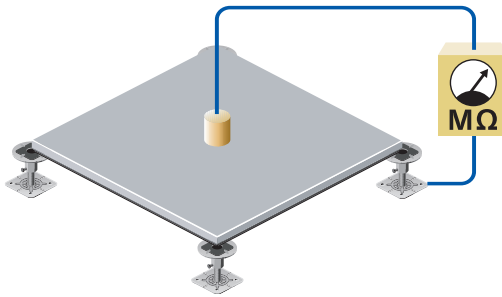


A center concentrated load test is conducted on a panel supported by four  $\phi 80$  pedestals after a 30kg sandbag (base  $\phi 220$ ) is dropped by free fall to the center of the panel.

Drop height (cm)	Max. load (kN)	Deflection (mm)
70	9 or more	2.0 or less (3kN)

\*The above figures can be used for specification purposes.

## Leakage Resistance Test



Measures the leakage resistance.

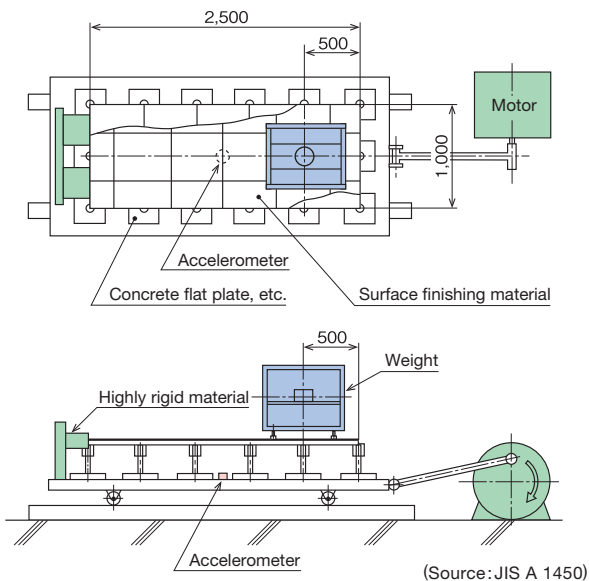
Leakage resistance value	Panel surface	Leakage resistance value ( $\Omega$ )
	No surface finishing materials	$1 \times 10^5$ to $2 \times 1,0^{10}$

\*These are measured values and not guaranteed values.

Measurement organization: NICHIAS

## Seismic performance test

A weight is placed on a test piece, and a sine-wave vibration of 2Hz is applied 3times.



Note: The pedestal type varies depending on the applied load.

Vibration test (Test method: JIS A 1450)

Model	Load mass	Result
M300A	200kg / 350kg	Floor panels should HG not come off.
M5000A		
M600A		

Testing organization: Floor Materials and Construction Research Institute

Mass of specified weight	Applications	Underfloor strength
150kg	The case where setting of a lightweight fixture and furniture is assumed (e.g. ordinary offices)	3000N/m <sup>2</sup>  5000N/m <sup>2</sup>
200kg	The case where setting of a common book shelf and fixture and furniture is assumed (e.g. ordinary offices)	
350kg	The case where setting of heavy load such as a large book shelf and equipment including a pint-sized server is assumed	

\*Specified load is not related to underfloor strength. These data items are given here for reference considering the current usage.

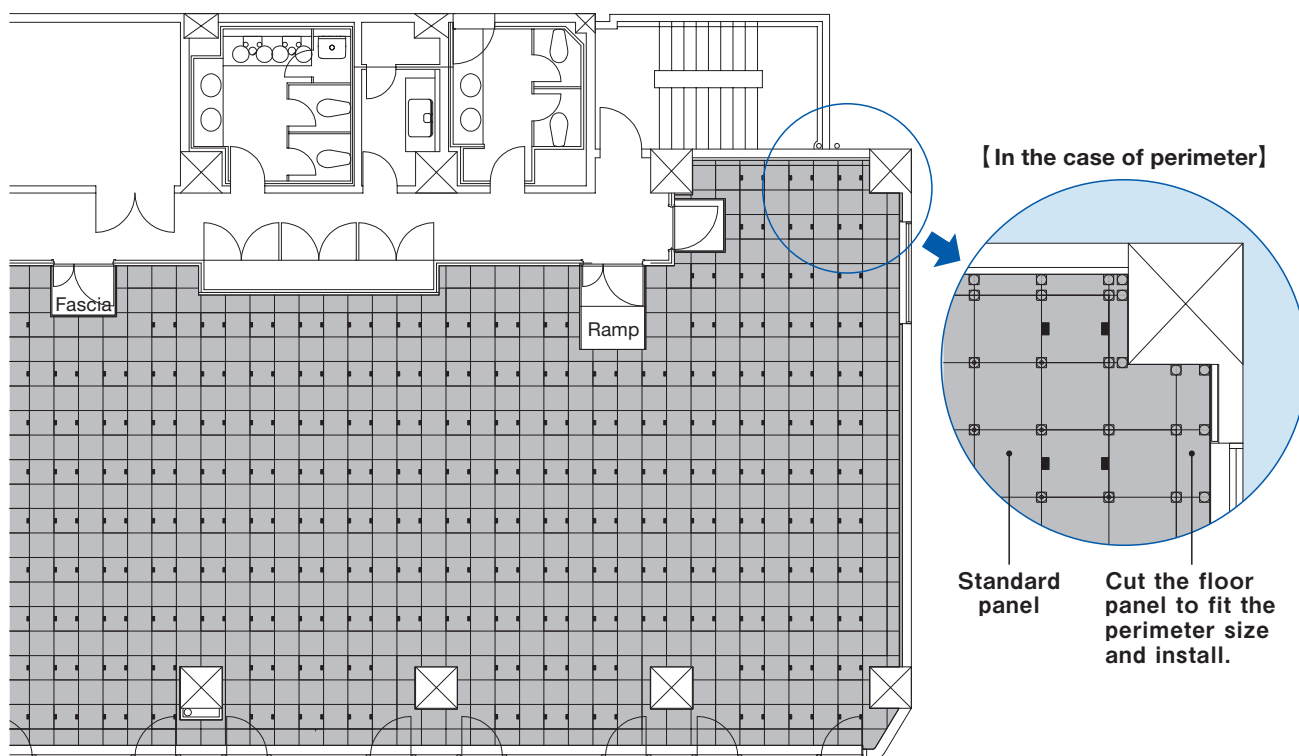
\*Data source: "Performance Assessment of Raised Access Floor System" by Japan Access Floor Association

## About certification

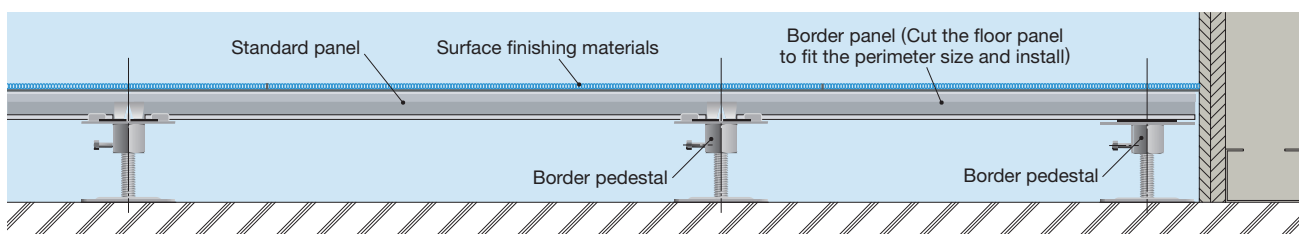
●Public Buildings Association

"NICHIAS SIGMA FLOOR" has received various evaluations, but there are some restrictions on the specifications such as support pedestals, so please contact us for details.

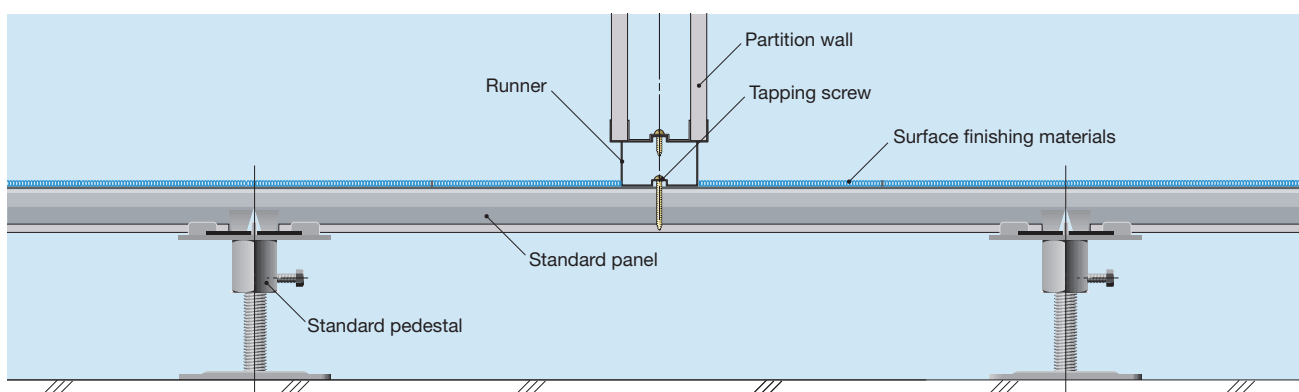
## Installation plan view



## Cross section

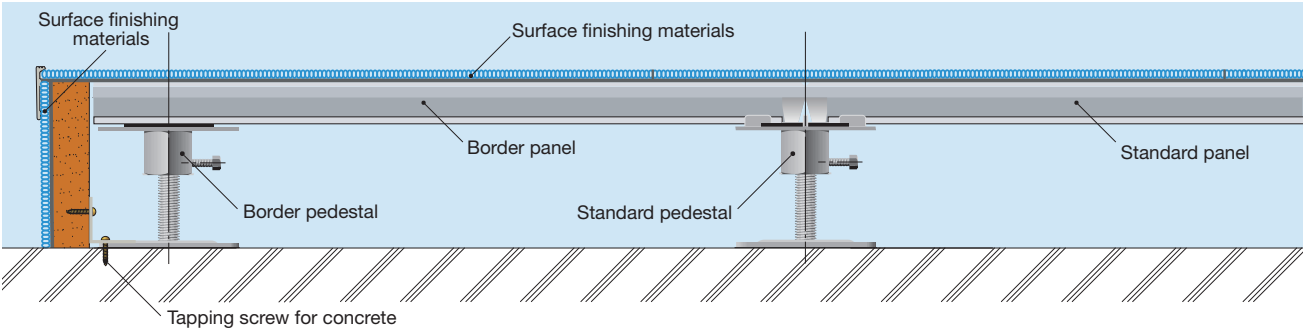


## Drywall partition cross-sectional view

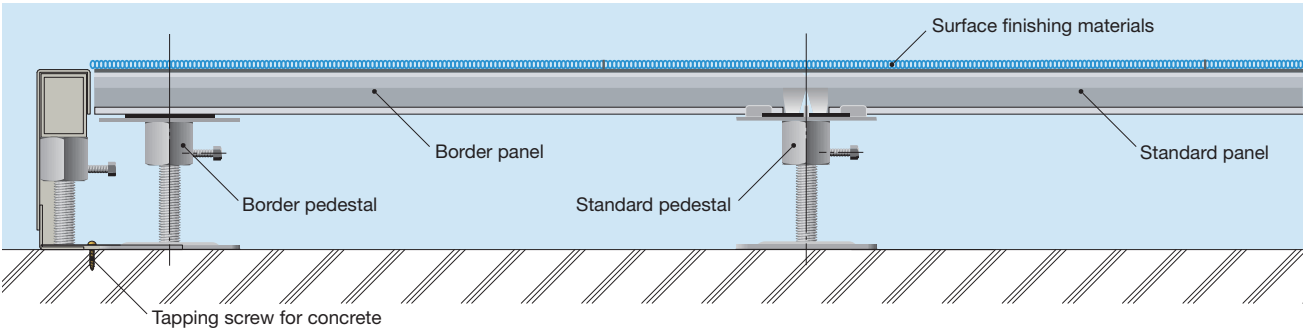




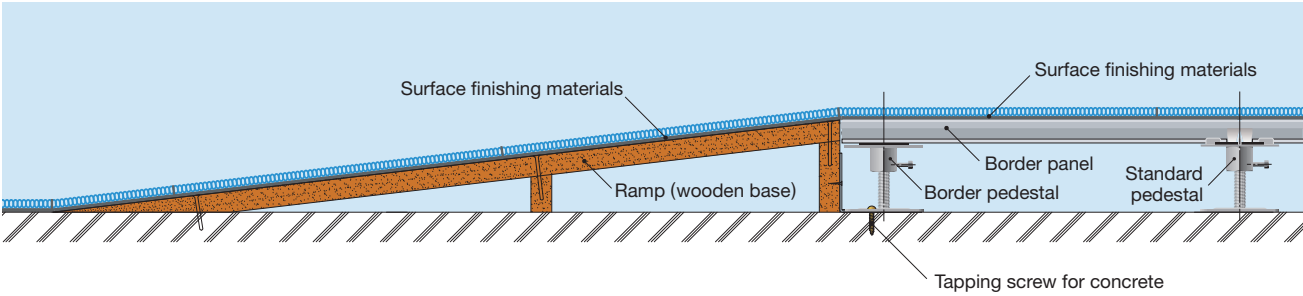
Rising frame (wooden base)



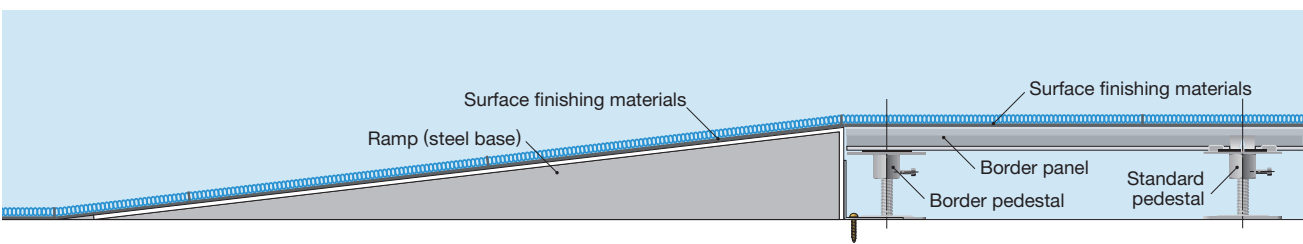
Rising frame (stainless steel)



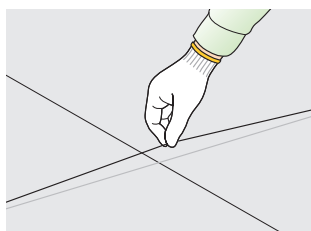
Ramp (wooden base)



Ramp (steel base)

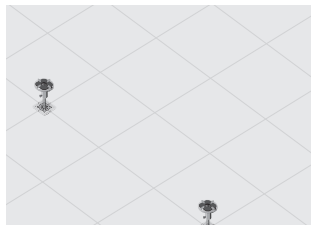


## Installation Procedure



### STEP 1

Put the control lines on the concrete floor according to the building standard marks and the working drawings.



### STEP 2

Adjust the height of the pedestals as standard with a leveler, etc.



### STEP 3

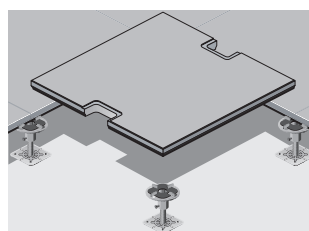
Adjust the height of other pedestals to the standard pedestals with a long bar, etc. and fix the height with the stopper.



### STEP 4

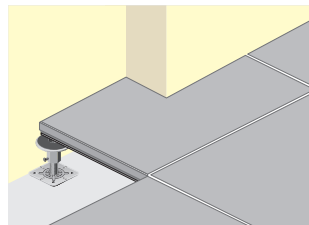
Apply the adhesive to the bottom of the base plate of the pedestal and install the pedestal according to the control lines. (Put the lock base in the case of panel lock system.)

\*When applying paint to the concrete slab, consult the paint manufacturer regarding the slab conditions for applying the paint, the curing time before bonding pedestals, etc.



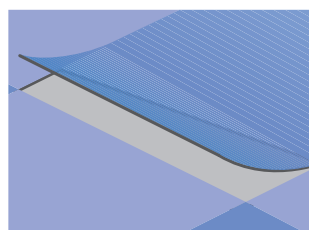
### STEP 5

Just after the installation of the pedestal, put the floor panels (Type 0 and Type PK) on the pedestal according to the layout plan.



### STEP 6

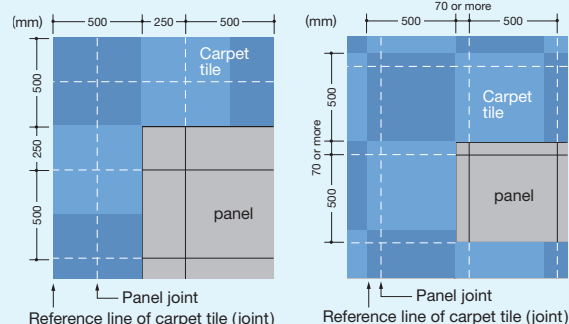
Install the floor panel at the perimeter. (Secure the floor panel with a lock plate in the case of panel lock system.)



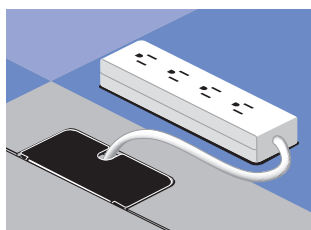
### STEP 7

Install the carpet tile, etc. (Install the floor covering as soon as the floor panel is installed.)

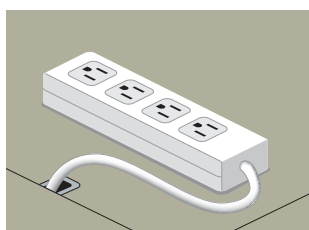
#### [Example of Carpet Tile Layout]



#### [How to pull out wiring] For carpet tile



#### For vinyl tile



### Prohibitions

- Do not use NICHIAS SIGMA FLOOR™ for applications other than raised access floors.
- Do not install floor panels upside down because this reduces their strength.
- Do not cut or modify panels or pedestals based on your own judgment because cutting or modifying panels or pedestals may reduce their strength and cause the panels to break or fall. (Please be sure to contact us.)
- Do not install or move equipment exceeding the design concentrated load on panels.
- Do not leave or use installed floor panels without laying a floor covering for more than six months.
- Do not use it with a panel lifter.

Please contact us if you have any questions.



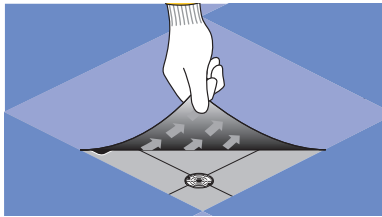
## Maintenance

### ⚠ Installation precautions

● Reinforcement is required when a custom panel is installed or moved. Be sure to contact us. ● Be sure to cover openings in floor panels with the grommet cover lids. ● The raised access floor system has grommets for power outlets. The joint line of the carpet needs to be shifted at least 70 mm from the joint line of the floor panels. ● An unusual smell might be generated in case of reaction between the plasticizer of the backing rubber of the carpet tiles and alkaline water contained in the floor panels. Ventilate the room sufficiently after installing carpet tiles. The recommended quantity of carpet bond (peel-up type adhesive) to be applied is 30 to 60g/m<sup>2</sup>. Refer to the installation specifications of the carpet manufacturer for detailed instructions. Applying too much carpet bond may damage the carpet due to excessive viscosity. ● Store panels and accessories in a place where they will not come in contact with water. ● Comply with your local regulations concerning industrial waste when disposing of floor panels.

### ⚠ Precautions on handling panels after installation

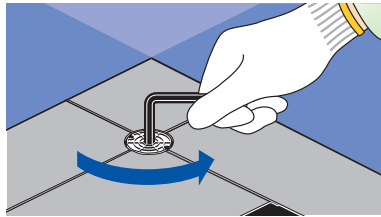
1



Pull up a corner of the floor covering (such as carpet tile) and remove the four sheets of covering that cover the floor panel to be opened and closed.

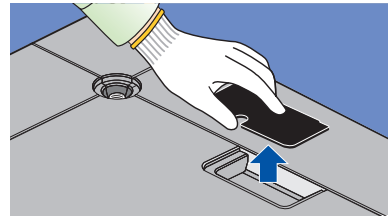
\*Since the floor covering has a specific direction, record its position and direction for reinstalling it later.

2



Remove the lock plate with a hexagonal wrench.

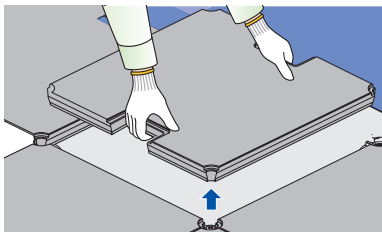
3



Remove the grommet cover lid.

4

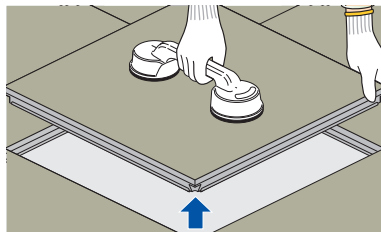
#### [Carpet tile]



Hold the panel with both hands and lift it straight up.

\*Record the position and direction of the panel for reinstalling it later.

#### [Vinyl tile]



Please choose a panel lifter with strong adsorption power. Dust the panel surface before you work. Make sure the panel lifter is located in the center of the panel and that the suction is sufficient before lifting. The removed panel lift it up with your hand. Place the removed panel beside it and then remove the panel lifter.

\*Record the position and direction of the panel for reinstalling it later.

5

If heavy objects or construction materials are carried on carts, avoid excessive localized load on floor panels by reinforcing the panels along the route with wooden board according to the following standards.

Heavy object	Reinforcing method
300 kg or less	Plywood panel or vinyl sheet about 2 mm thick
300 to 500 kg	Wooden board 9 mm thick
500 to 1000 kg	Wooden board 20 mm thick

\*Make sure the joints of the floor panels and reinforcing materials do not overlap. (The joints would be dislocated.)

\*Slowly carry carts by human power. Be careful not to cause an impact load when hydraulically operating equipment such as a hand fork-lift.

6

- ① If load is concentrated on a single floor panel, put a steel plate or frame on the panel.
- ② When equipment that generates repetitive loading or vibration such as a mobile rack or large rotary press is used, install it on a mount secured to the concrete floor to isolate the floor panels from the equipment.
- ③ If there is equipment that could topple over, secure it to the concrete floor or load-bearing walls. Do not secure the equipment to the floor panel or pedestals.

8

#### [Precautions on changing the layout]

Please contact us when modification of panels or replacement of floor materials is required due to a layout change or wiring work.

#### 7 [Maintenance of panel surface]

##### ■ Vinyl tile

- ① As a daily work, clean with a vacuum cleaner or wipe with a dry mop.
- ② As a regular work, buff or clean by the following method.

- Clean the surface with a vinyl tile cleaner.
- If the surface cannot be cleaned, remove the wax applied to the surface with a remover.
- Apply antistatic flooring wax.

\*Be careful not to let water, cleaners, removers, or wax get into the panel joints.

\*When using general wax, it may interfere with the antistatic effect.

##### ■ Carpet tile

- ① For daily maintenance, clean the carpet with a large vacuum cleaner for business use or a home vacuum cleaner.
- ② For periodical maintenance, clean the carpet using cleaning powder.

\*Be careful not to spill water or chemicals on floor panels.

\*Consult a cleaning company or surface finish material manufacturer for details on how to clean powder or remove stains.

9

#### [Other precautions]

- A heavy object falling on the floor or excessive impact could damage the panels or cause them to fall off. If the panels are used in such a situation, check that the panels are not damaged after each incident, and replace them if necessary.
- Do not open the floor panels unless unavoidable. If panels are removed, be careful not to stumble or fall.
- Be careful not to allow water to splash onto wiring equipment during cleaning.
- Please note that the temperature environment near the walls and passages is different from the standard area, and condensation may occur.



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## Overseas Factories

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#### PT. NICHIAS METALWORKS INDONESIA

### Malaysia

#### NICHIAS FGS SDN. BHD.

#### NT RUBBER-SEALS SDN. BHD.

### Vietnam

#### NICHIAS HAIPHONG CO., LTD.

### China

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### India

#### NICHIAS INDUSTRIAL PRODUCTS PRIVATE LTD.

### Czech

#### NICHIAS AUTOPARTS EUROPE a.s.

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