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solecheck

The World's 1st Smart-cleaning Solution
for your factory and indoors.



Daeshin MC Co., Ltd.

*Vacuum dust from
shoe soles and wheels!*

World 1st Cyclone function, Modular Mat!

SmartClean

solecheck



Daeshin MC Co., Ltd. SmartClean

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Vol.3

www.daeshinmc.co.kr

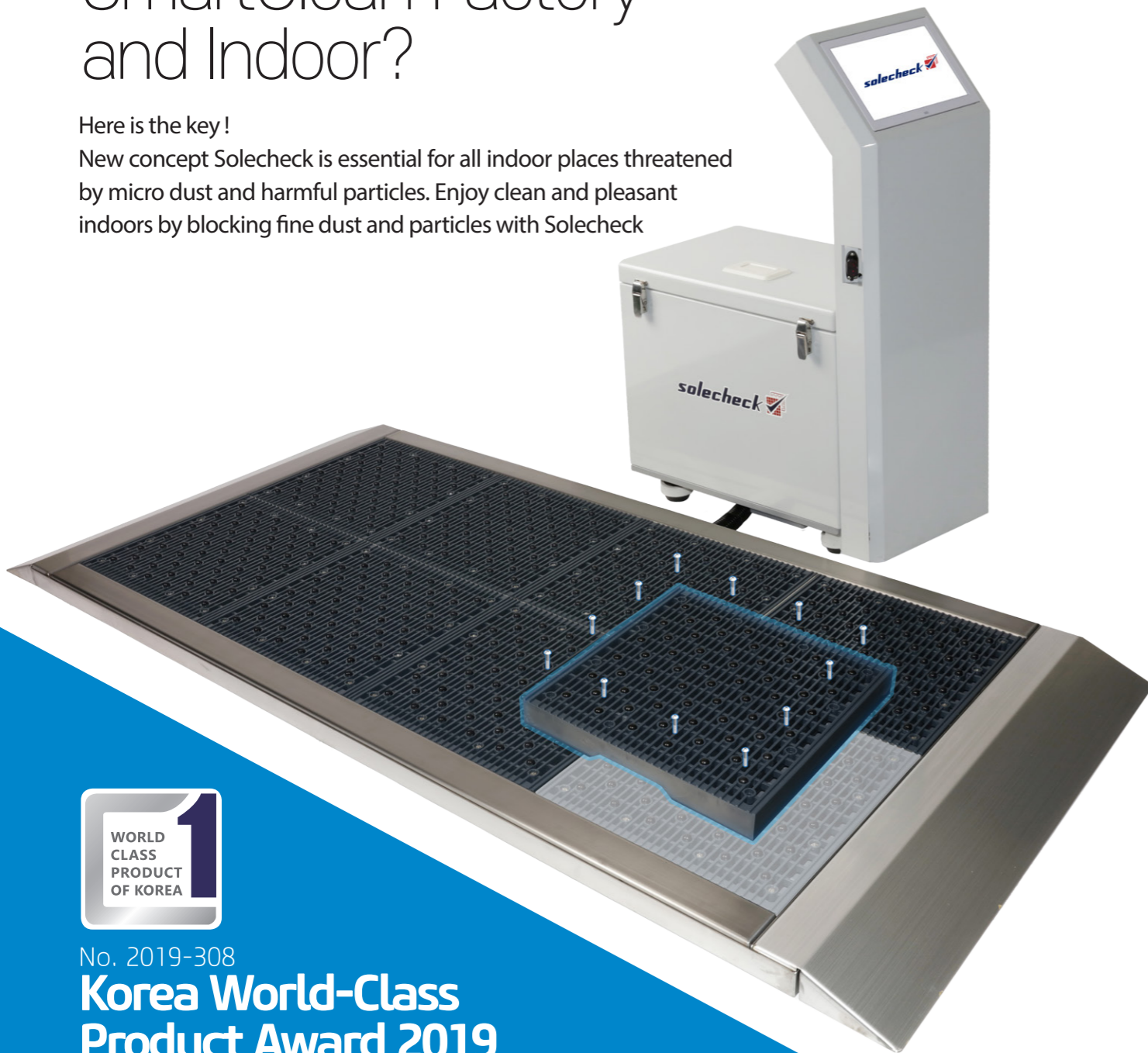


www.daeshinmc.co.kr

How to make SmartClean Factory and Indoor?

Here is the key!

New concept Solecheck is essential for all indoor places threatened by micro dust and harmful particles. Enjoy clean and pleasant indoors by blocking fine dust and particles with Solecheck



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No. 2019-308

Korea World-Class Product Award 2019

The Modular Mat, developed for the first time in the world, makes it easy for users to maintain and to use in the long-run. In addition, the cyclone suction of the existing dust collector the build-up of odor.

About Daeshin MC

Daeshin MC Co., Ltd. as a manufacturer, was founded in 1997 in Republic of Korea. We take the lead in researching, developing, manufacturing and selling new technologies related to hygiene equipment and the environment. We are developing the best quality and world's first technologies, and we will always prioritize customer satisfaction.



Certificate & Patent



Customer



Solecheck



solecheck 

| Easy to use |

Removes dust and hazardous particles from shoe soles by simply walking.

| Strong and Durable |

The polycarbonate frame and the development of modular mats ensure that the mat withstands strong shocks and heavy loads. (Durability Teste by KIMM.)

| Easy to maintenance |

The horizontal dust collector allows you to open the lid directly to replace the filters and easily discard the dust tray where the dust accumulated.



Motivation for Development

01

About 80% of indoor pollutants come from visitors' shoes

[International Association Study]

► Need to prevent pollutants through visitors' shoes from entering into indoor.

02

Inconvenience of previous One-Plate Suction Mat

► Modular Mat is developed. ► Easy maintain.

03

Cyclone Function is added

By adding Cyclone function, life of HEPA filters are extended without odor.

What is *Solecheck*?

It creates a clean and pleasant indoor environment by vacuuming micro-dust, soil, particles, and harmful substances strongly and effectively which are entering indoor through shoes.



10" HD Monitor with USB

Information transfer purpose



Automatic Sensor

Sensing and start operation



Dust Collector

- 01 Cyclone (Above 10µm)
- 02 1st Non-woven Filter (Below 10µm)
- 03 2nd Round HEPA Filter (up to 0.3µm)
- 04 3rd Square HEPA Filter (up to 0.3µm)



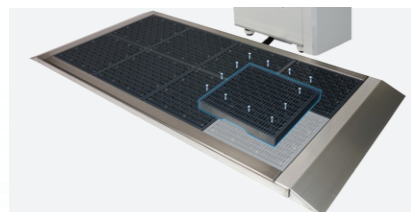
Stand

- 01 PCB Panel
- 02 Suction Power Control
- 03 USB Port



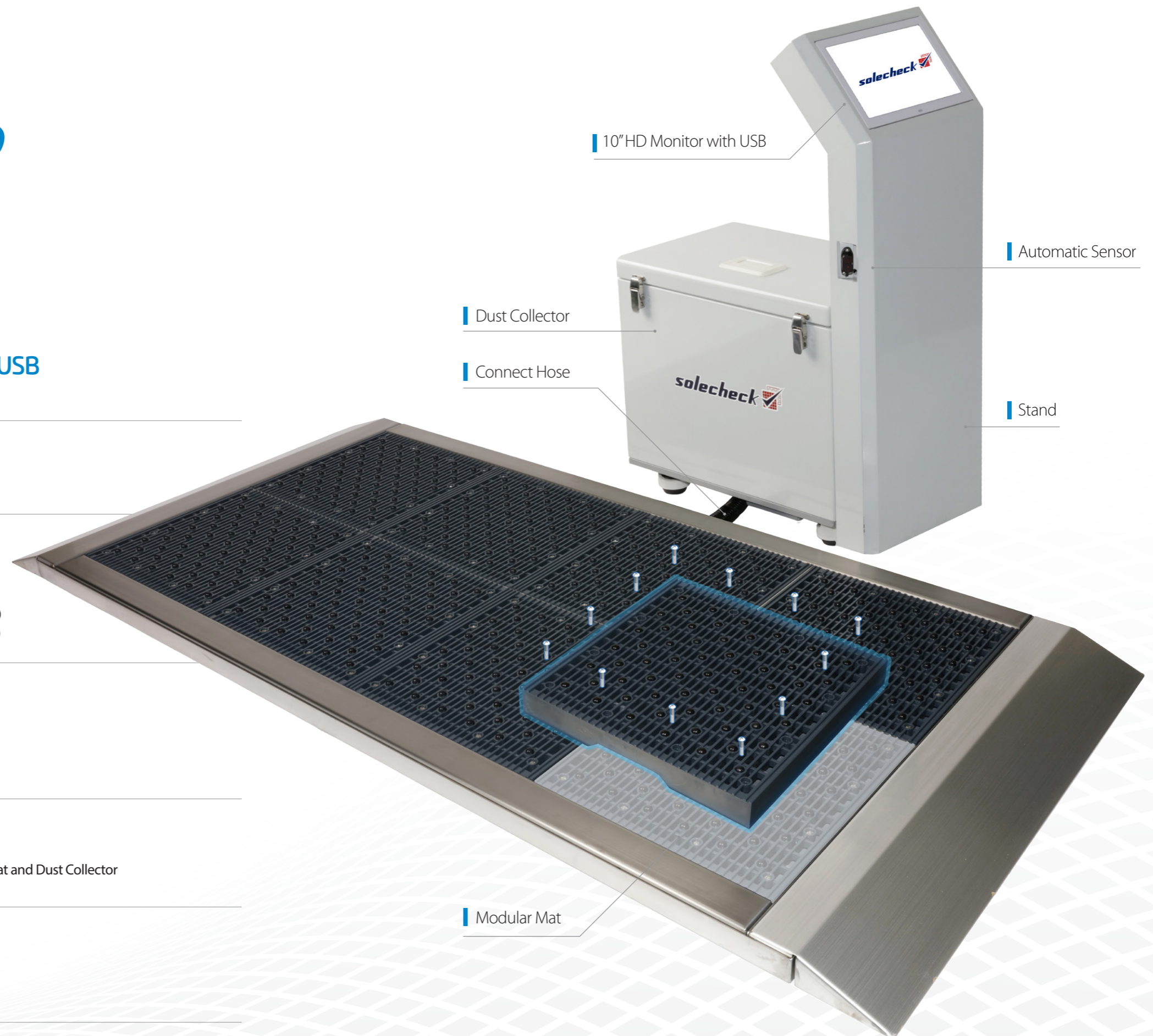
Connect Hose

Connecting hose between Modular Mat and Dust Collector



Modular Mat

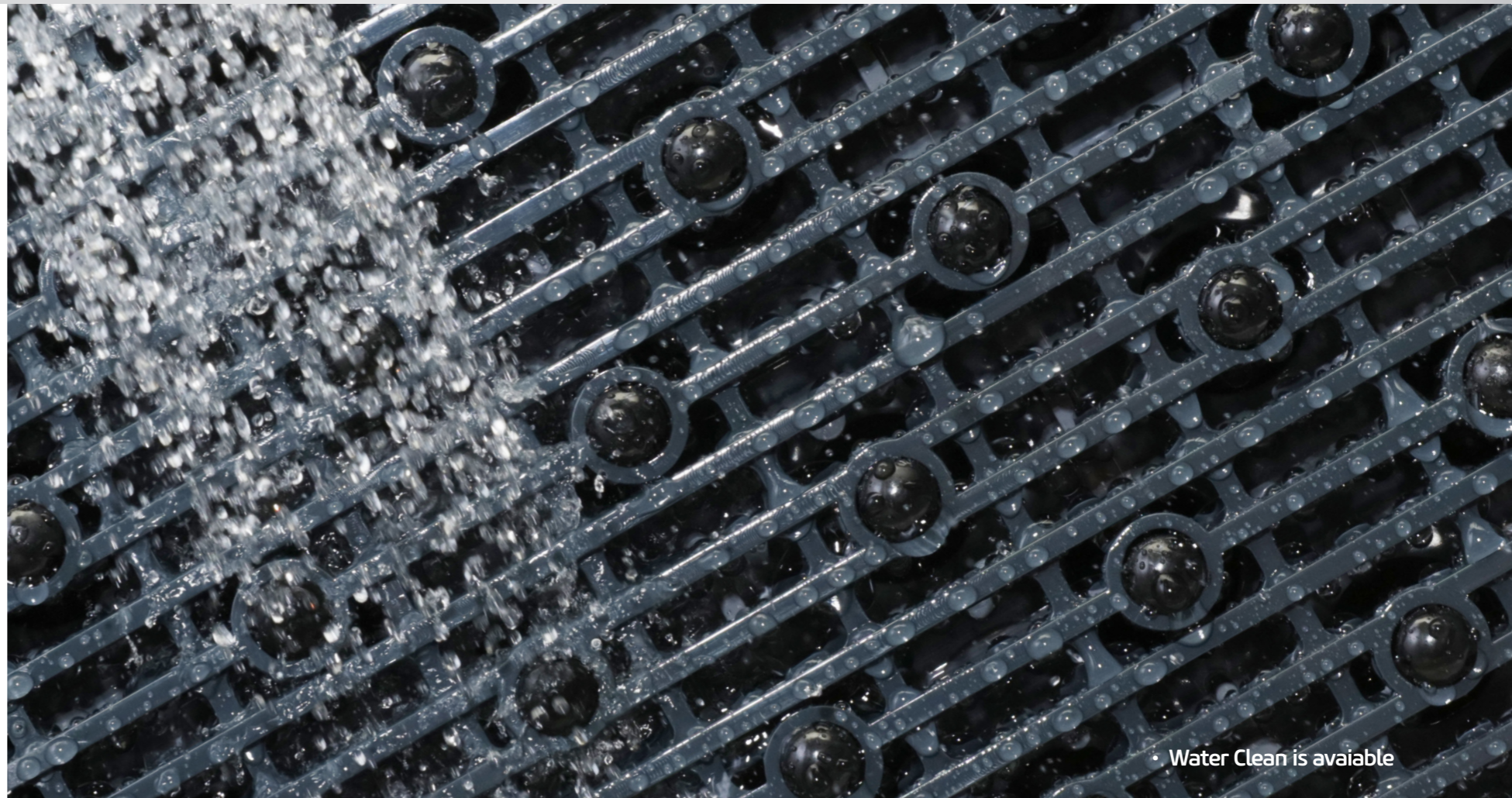
- 01 Modular cells
- 02 Moldings



Advantages

By using Solecheck

Since it vacuums dust strongly, it can be installed at every entrances of buildings, keeping indoors clean and improving the air quality. In addition, Solecheck has various advantages.



Water Clean is available

01

Create Clean and Welcome Image To visitors

At the entrance, company can give the image to visitors that values the indoor environment by using Solecheck.



02

Keep Most Pure Air Indoor Condition

In the performance tests of KTL and KIMM, only very fine dust of about 0.01 micron was discharged into the air.



03

Less Quality Complain

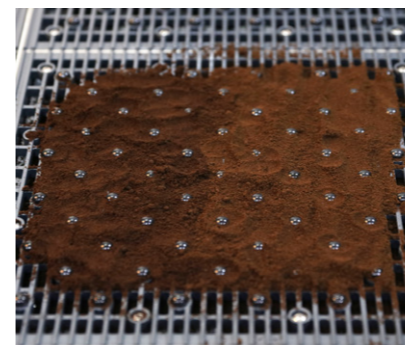
Quality is the most important thing in a factory, and quality starts with cleanliness. You can reduce quality complaints by using Solecheck.



04

Save Cleaning Cost

Once installed, it can significantly reduce the regular cleaning cost.



05

Keep Being Healthy

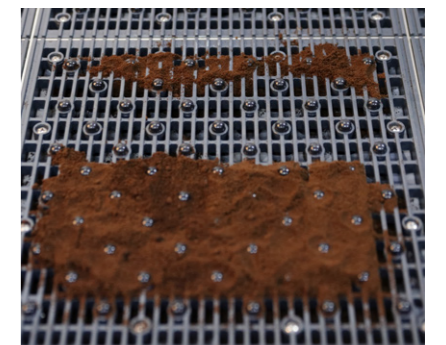
We need to pay attention to the indoor environment. Solecheck removes dust coming through the shoe sole and it maintains our health.



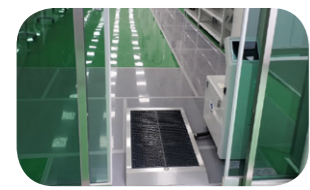
06

Make Smart Clean Factory

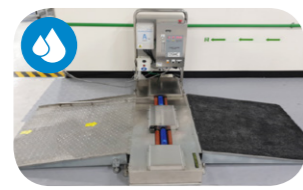
Smart Cleaning starts with smart equipment. Depending on what equipment you use, you can create a smart clean factory. Start SmartClean factory with Solecheck.



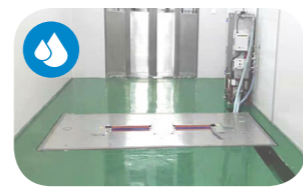
Smart Factory Map



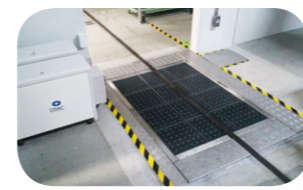
solecheck Slope Type
Before entering indoor



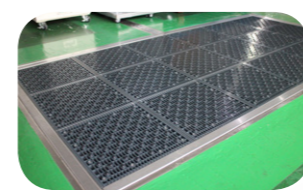
Caster Cleaner (Slope)
As wet type, Perfect clean for wheels



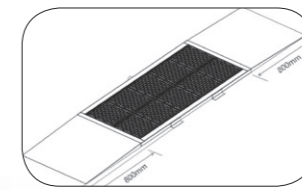
Caster Cleaner (Embedded)
As wet type, Perfect clean for wheels



solecheck Embedded Type
For vacuuming AGV Wheels dust



solecheck Embedded Type
For wheels and shoe soles



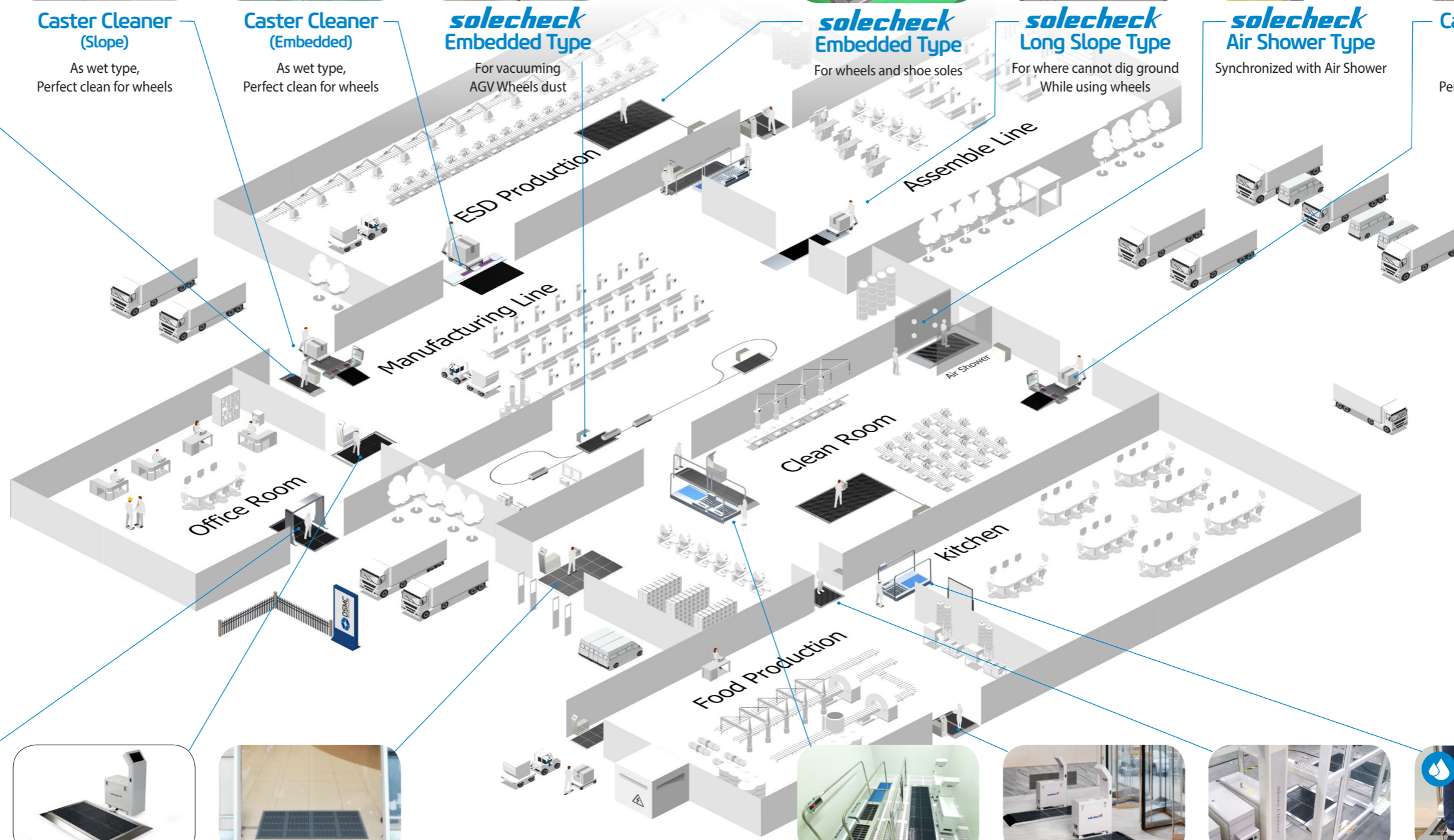
solecheck Long Slope Type
For where cannot dig ground While using wheels



solecheck Air Shower Type
Synchronized with Air Shower



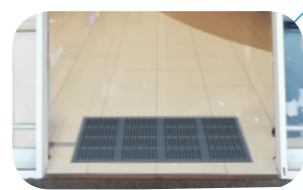
Caster Cleaner (Slope)
As wet type, Perfect clean for wheels



solecheck with 'Sanitizer Gate'
With disinfected function At gate



solecheck Cover Type
Mat full covered as slopes



solecheck Embedded Type
Full coverage of gate



solecheck with Shoe Sole Cleaner
As wet type first



solecheck Slope Type
At gate of building



solecheck Slope Type
Between Aisle



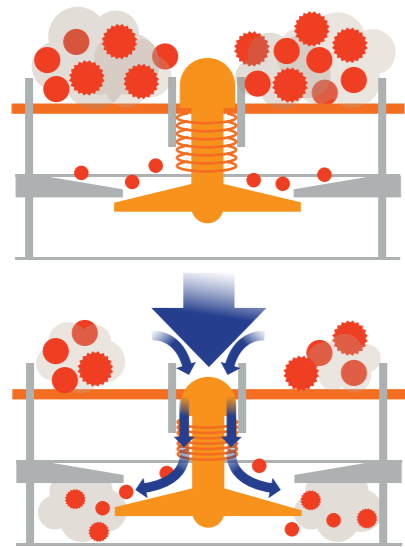
Shoe Sole Cleaner
As wet type, Perfect clean for shoe soles

Grating Structure



Non-Grating Structure (Previous Model)

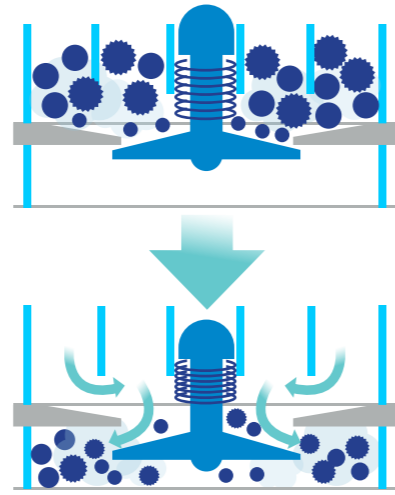
In the previous Non-Grating Structure, it can not vacuum a lot of dust. Also, dust that is not vacuumed still remained on the top plate at the edge and is delivered indoors through the shoe sole again.



VS

Grating Structure (Upgraded Model)

To vacuum dust perfectly with large amount, Grating Structure is developed. Grating walls prevent dust from rising again. It can capture huge amounts of dust. The Grating Structure completely prevents dust from scattering as dust does not remain on the top plate and falls down into the grating.

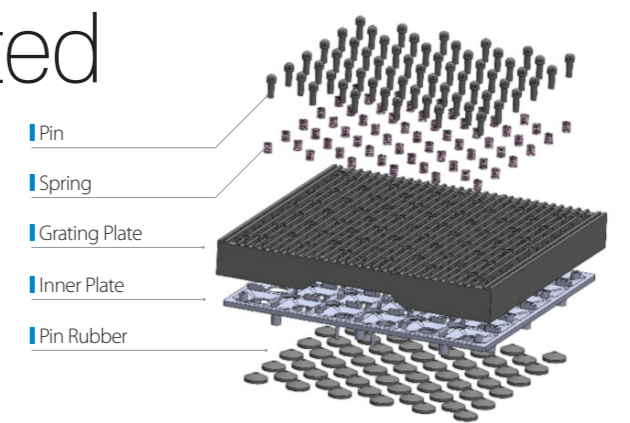


“No Dust Scattering”

The Grating Structure prevents dust from scattering because all dust falls down and is vacuumed between the gratings, even if any impact or distortion occurs on the mat.



World 1st Patented Modular Cell



Durable Suction Pin

Pass 1 million push tests with 150kg. Only 1 Suction Pin was broken.
Source : KIMM (Korea Institute of Machinery and Materials)



Convenience of Maintenance

If one suction pin is broken, only the broken pin needs to be replaced.



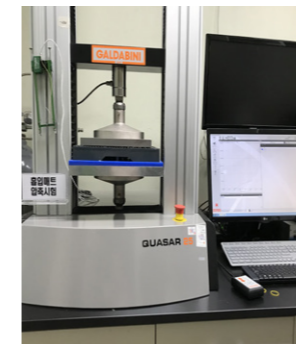
Anyone Can Assemble

Modular cells are easy to remove and assemble.



World 1st Developed

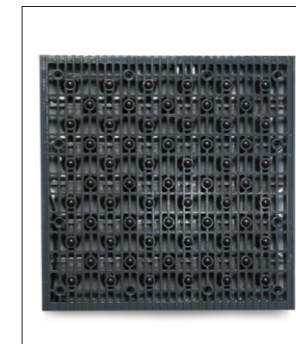
The world's first developed Modular Cell Vacuum.



Strong against Vertical Load

Withstands 500kg of vertical load with no damage.

Source : KIMM (Korea Institute of Machinery and Materials)



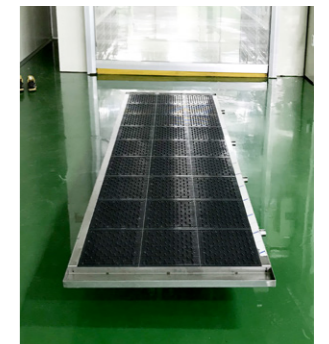
61 Pins Per Cell

Improved suction rate with 61 pins per cell.



Water Clean is Available

You can clean Modular Cell with water to rinse it.



Easy Expansion of Installation

Custom fitting of Modular Mat available.

Dust Collector

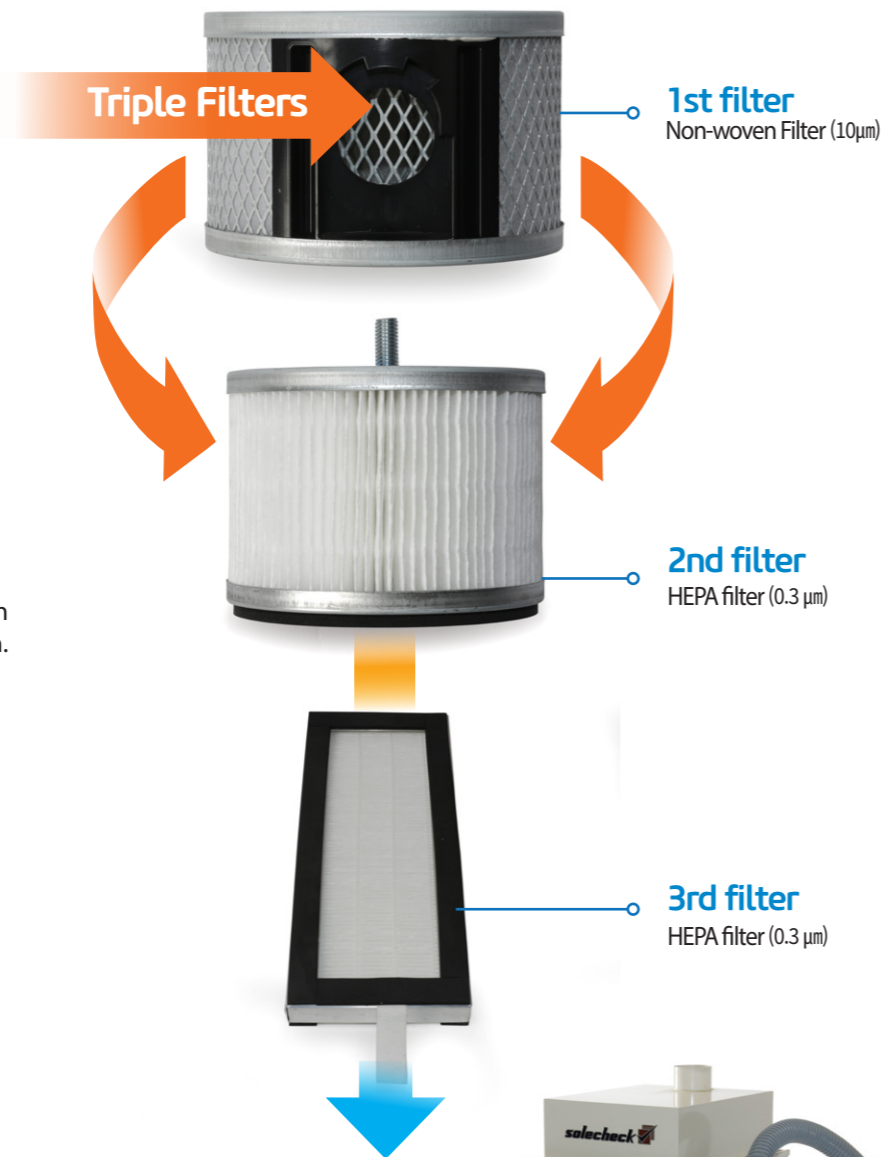
104 Type

3 Steps Filters

• With 3 steps filters, it completely blocks dust up to 0.3µm to create a clean indoors.

(Optional) Monitor with USB

• Information in the USB is being shown on the monitor to deliver information.



Dust Collector

105 Type

• 105 Type is suitable for Modular Cells
From 40~ 59 cells (1 DC)
From 60 ~ 144 cells (2 DC)



Cyclone Function

• Big particles (above 10µm) collected in Dust Tray only and is not flowing into the filters. Limiting odor build-up

104 Type is suitable for Modular Cells

• From 1 ~ 19 cells (1 DC)
From 20 ~ 39 cells (2 DC)



Capable of collecting **99.37%** of fine dust, harmful particles, molds etc.

- 01 1 week use from the entrance of PCV Factory. Dirt and dust collected after the demonstration.
- 02 Soil and dust collected after 294 hours used in indoor.
- 03 Dirt and dust collected after 3-4 months of use at a food company's air shower room.



Proved **Top Quality** and **Excellent Technology**



Electric Shock Safety

A 500V voltage test shows it has a high insulation resistance of "76 GΩ"

Electric shock rate: Low
Electric shock safety Certified

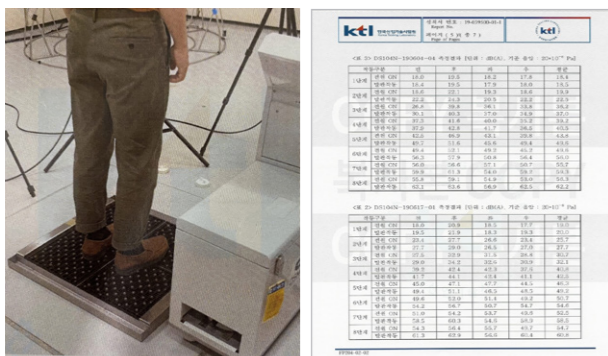
Source : KIMM (Korea Institute of Machinery and Materials)



Temperature Dependent Operation

Normal operation at Low Temperature(-7 °C ~25 °C), High Temperature(25°C ~55 °C)

Source : KIMM (Korea Institute of Machinery and Materials)



Noise

Excellent for indoor use with 62.2 dB

Comparison: Vacuum Cleaner Noise 86dB

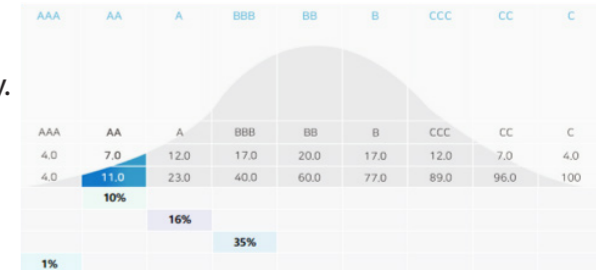
Source : KTL (Korea Testing Laboratory)

KR Patent Evaluation <Excellent>

• Solecheck has been evaluated with "excellent-AA" results in all areas of the patent for mechanical technology.

• KR Patent Evaluation Report

Source: Korea Intellectual Property Office, Korea Promotion Invention Association (December 29, 2019)



Solecheck	Total Evaluation (100%)	Rights (35%)	Technical (35%)	Usability (30%)
	AA Top 5.0%	A Top 11.5%	BBB Top 35.3%	AAA Top 1.0%

Emission of fine dust <Good> grade.

Emission of fine dust from Solecheck : **0.0175mg/m³**
It maintains the indoor condition <Good> grade.

항목	평균	Test 1	Test 2
최대흡입압력 [kPa]	142.30	143.23	141.36
공방 [L/s]	12.43	12.49	12.37
전압도 [kPa]	11.45	11.47	11.42
미세먼지 투입량 [g]	1.86	-	-
미세먼지 배출량 [mg/m ³]	0.0175	0.0149	0.0200

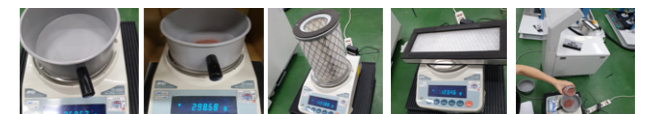
Fine Dust Forecast Grade (Source : KTL)

Section	Good	General	A little Bad	Bad	Very Bad	
mg/m ³ . Day	0~30	31~80	81~120	121~200	201~300	301~

Suction Rate

Dust Size 0.3µm ~ 100µm **99.37%**
Micro dust suction rate

Source : KIMM (Korea Institute of Machinery and Materials)



[Dust collection efficiency test]
1. Measure the weight of empty container → 2. Fine dust 30 g → 3. Measure the HEPA filter → 4. Measure the weight of sample container → 5. Nonwoven filter measurement
→ 6. Fine dust suction → 7. Measure the No.1 empty container → 8. Measure the No.1 nonwoven filter → 9. Measure the No.3 HEPA filter → 10. Measure the No.4 sample container
[Dust collection efficiency test procedure]

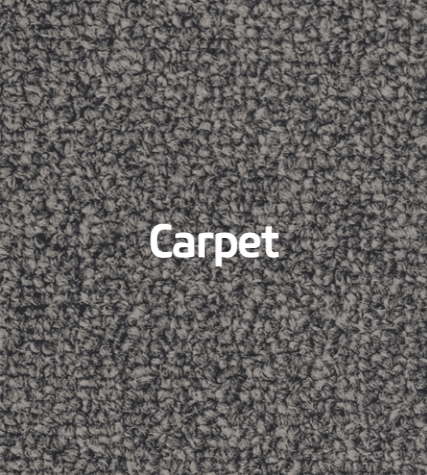


Sample number	Content	Dust collection efficiency test (Before life test 0 %)				Efficiency (%)
		Container 1	Fine dust	HEPA filter	Nonwoven filter	
1	Before the test	240.01	270.01	412.26	246.79	123.57
	After the test	240.00	-	412.37	276.49	123.57
2	Before the test	268.63	298.63	436.63	246.79	126.75
	After the test	268.63	-	436.73	276.56	126.69
3	Before the test	251.62	281.62	404.22	268.64	126.70
	After the test	251.62	-	404.19	298.36	126.68

Micro Dust (Size 0.3 µm to 1 µm) significantly reduced

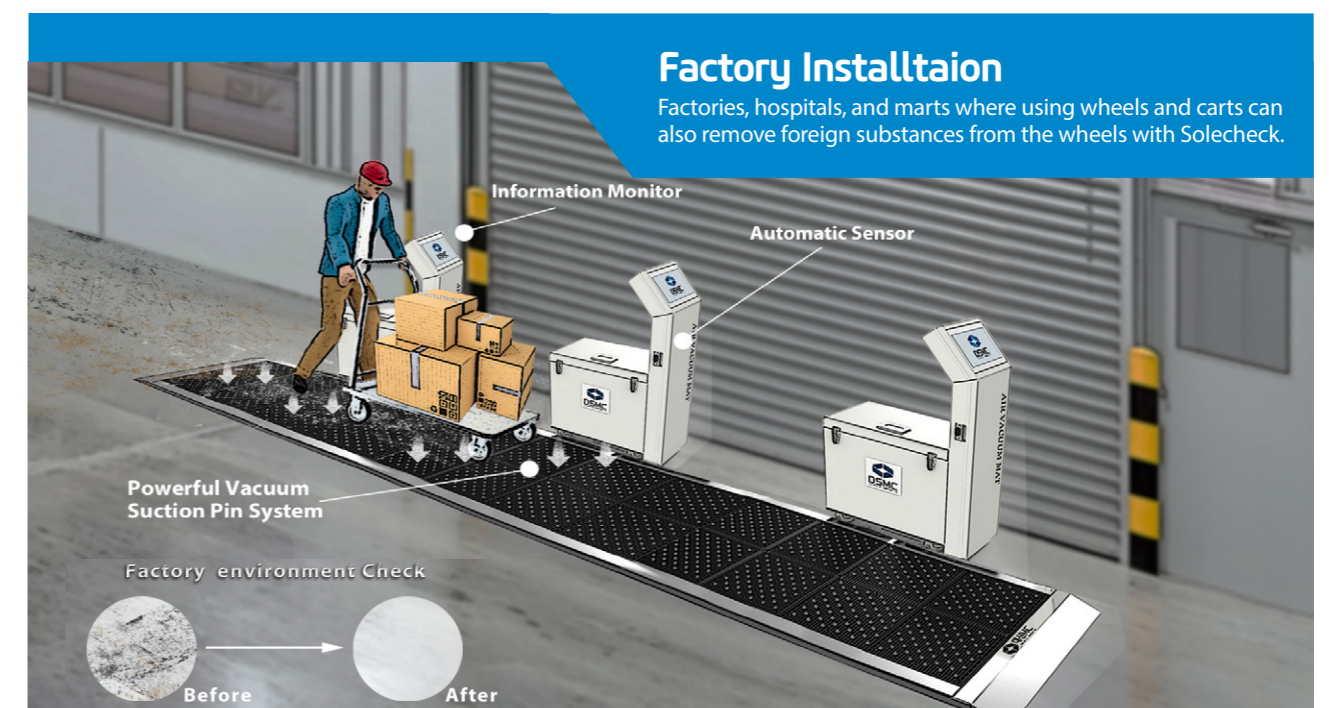
Source : KIMM (Korea Institute of Machinery and Materials)

Sample number	Content	Fine dust emission test			
		1	2	3	4
1-2	Air measurement	1,391,760	141,070	40,500	20,740
	Dust Collector operate	3,279,820	370,770	63,750	24,280
	Dust input into Dust Collector	3,176,000	439,770	81,030	28,820

Comparison with previous methods

Method	Advantage	Disadvantage
 <p>Carpet</p>	<ul style="list-style-type: none"> • Easy to install • Cheap • Absorbs water • Commonly used • Large contact area 	<ul style="list-style-type: none"> • Difficult to manage • Limited removal of foreign dust from shoe soles • Short lifespan
 <p>Sticky Mat</p>	<ul style="list-style-type: none"> • Easy to install • cheap 	<ul style="list-style-type: none"> • Needs to be replaced very often • Can not absorb moisture • Using place is limited • Waste disposal expenses incurred • Dust removal area is limited
 <p>Solecheck</p>	<ul style="list-style-type: none"> • Suction large amount of dust with instant suction method. • Strong suction upto fine dust (0.3 μm) • Easy maintenance with cell modular type • The replacement of the filters are economical with cyclone technology. • Short mat lengths are effective • Once installation, save the upcoming cost for cleaning. 	<ul style="list-style-type: none"> • There is about 60 dB of noise

Where to use

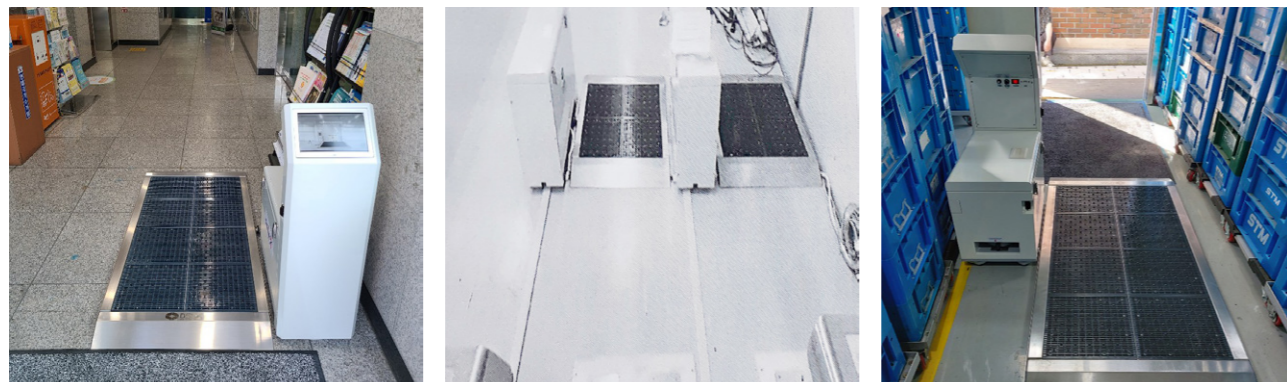


Various Usage Type

Slope Type



• In front of Air Shower Booth

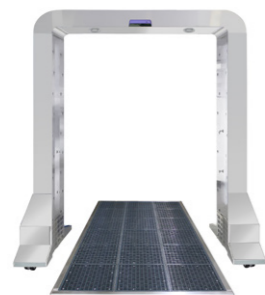


• At the gate of building with monitor

• Between aisle

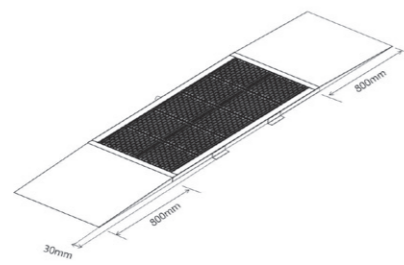
• Gate of factory

Combination with 'Sanitizer GATE' :



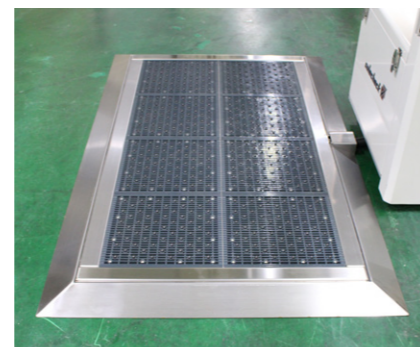
• Get sanitized by spraying liquid While you clean your shoe bottom.

Long Slope Type



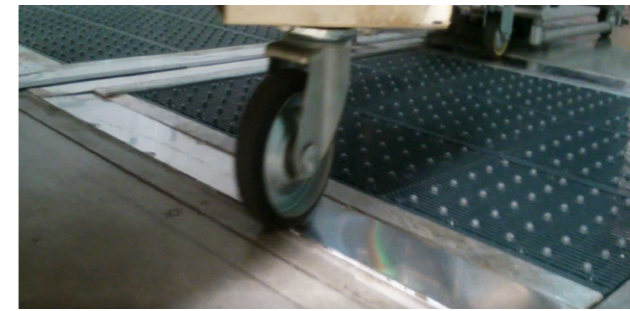
• For wheels without digging ground.

Cover Type

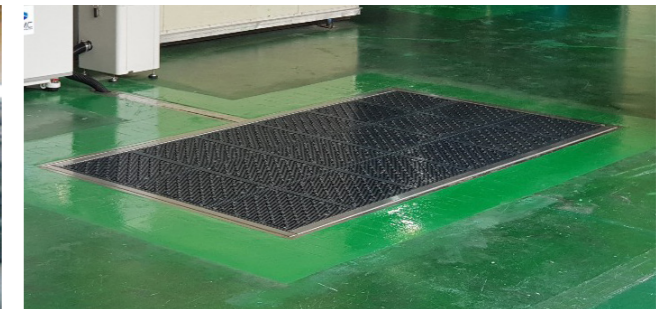


• Cover all 4 areas with slopes

Embedded type



• For wheels and shoe soles

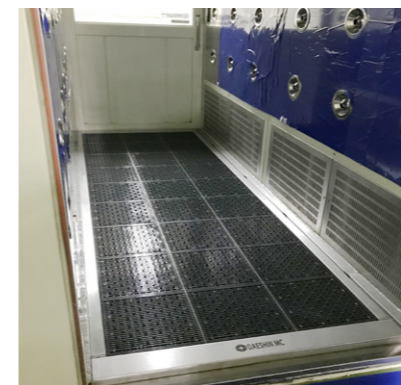


• At the gate of factory



• For AGV wheels / shoe sole

Air Shower Type



• Full cover the bottom of Air Shower Booth



• Part cover the bottom of Air Shower in embedded type



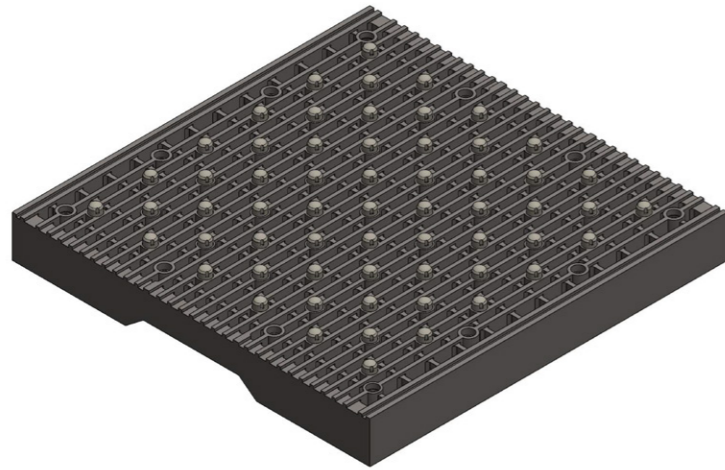
• Full cover the bottom of Air Shower Booth



• Dust Collector will be next to Air Shower Booth

Specification

Modular Cell Only



Size (mm)	300 x 300 x 35H	
Weight	1.6kg	
Durable Weight (per module)	500kg	
Pin Broken Frequency (times)	1,000,000	
Material	Pin	Polycarbonate
	Spring	Stainless
	Grating	Polycarbonate
	Inner Plate	ABS
	Pin Rubber	NBR
	Square Rubber	NBR
Pin	Pin Quantity	61 EA
	Pin Height	3 mm
	Distance	32.53 / 46 mm
	Max. Particle Size	Approx. 2.5 mm

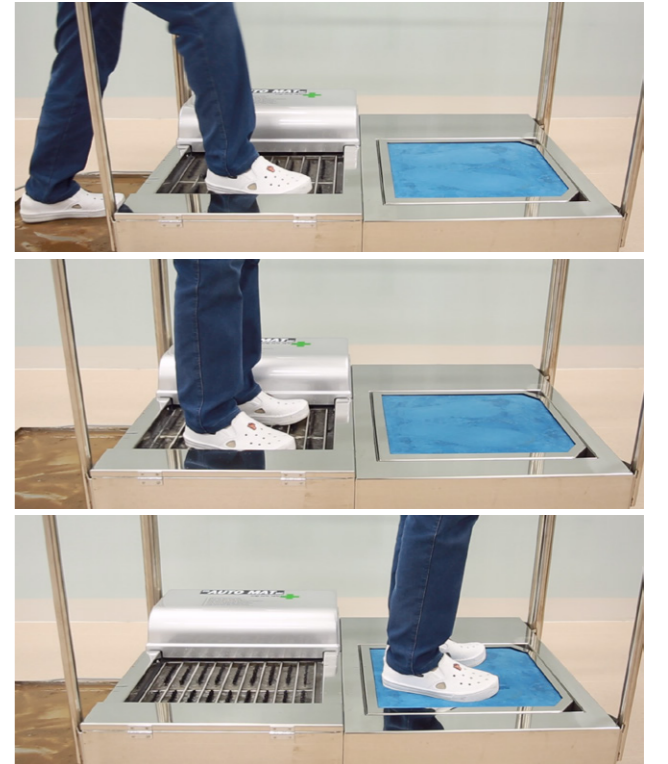
Dust Collector (DC)

Model	104A	104	104M	105
Size (mm)	606 x 300 x 490H	586 x 300 x 930H	586 x 300 x 930H	680 x 540 x 1100H
Weight	28 kg	45 kg	46 kg	80 kg
Material			Steel	
Hose Length	100 mm	100 mm	100 mm	1600 mm
Outer size			40ø	
Inner size			32ø	
Electricity	(220-240V Single, 50/60 Hz)			
Cyclone Dust Capture	Above 10 µm			
Filter Dust Capture	Upto 0.3 µm			
Suction Rate	99.37%	99.37%	99.37%	99.5%
Motor	1.35 kw	1.35 kw	1.35 kw	1.9 kw
Dust Tray Capacity	1ℓ	1ℓ	1ℓ	21ℓ = 9ℓ(Cyclone)+13ℓ(Dust Tray)
Power Cord Length	2 m	2 m	2 m	3 m
Average Noise	62.2 dB	62.2 dB	62.2 dB	69 dB
Max. Modular Cell		~19 Cells (1 DC) ~39 Cells (2 DC)		~59 Cells (1 DC) ~144 Cells (2 DC)
Monitor Screen	-	-	10"HD	-

More Smart Clean Products of Daeshin MC

Wet Type Shoe Sole Cleaner

The Perfect Cleanliness To Clean Shoe Soles



Wet Type Caster Cleaner

The Perfect Cleanliness To Clean Caster Wheels

