



Product Introduction for Automatic Fine Dust Suction Mat

AirMax CleanMat

Air Max

AirMax CleanMat



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01

Company Introduction

Company Overview and Vision

03



Your Sustainable Partner for a Clean Indoor Environment

AirMax CleanMat

About Us

Testonic is committed to creating a clean and healthy indoor environment. With the growing importance of indoor air quality management due to environmental problems such as fine dust and ultrafine dust, the importance of developing advanced technologies is also growing. Testonic has focused on solving these problems through innovative fine dust inhalation technologies.

Our products have proven their effectiveness in a variety of domestic and foreign environments. In particular, we are successfully installing systems in major public facilities, including domestic subway stations, confirming meaningful influence, and taking the lead in improving indoor air quality.

Testonic aims to continue its journey as Korea's leading environmental technology company to improve indoor air quality in the future.

CEO Kang Wook Nam

Company Overview

Annual Revenue: 8.5 billion KRW

Employees: 35

Years in Business: 14 years

Government Certifications: Excellent Product Certification, Performance Certification, KC Certification, etc.

Major Awards: Prime Minister's Award, Ministry of SMEs and Startups Minister's Award, etc.

Export Status



Korea's excellent product, AIRMAX is expanding worldwide.

Major Clients and Partners

SAMSUNG

LG Electronics

HYUNDAI

LG Chem

HYUNDAI
ENGINEERING & CONSTRUCTION

SK hynix

NAVER

POSCO

NH농협은행

KB Kookmin Bank

IBK기업은행

Panasonic

HONDA

hp

MITSUBISHI MOTORS

STARBUCKS

Nitto
Innovation for Customers

HUAWEI

KEPCO

K water

SEOUL METROPOLITAN GOVERNMENT

Ministry of Health and Welfare

Ministry of Foreign Affairs

서울교통공사
Seoul Metro



02

Product Introduction

Overview of Fine Dust Suction Mat	06
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Overview of Suction Mat

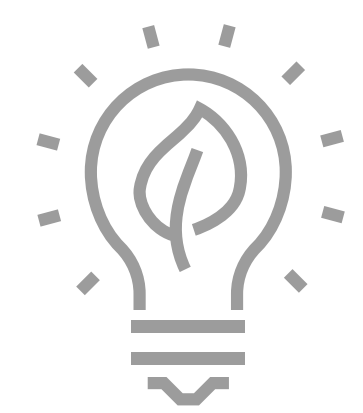
Fine Dust Inflow Prevention Solution

Fine Dust Removal Solution (Ventilation System) + Fine Dust Inflow Prevention Solution (Fine Dust Suction Mat)



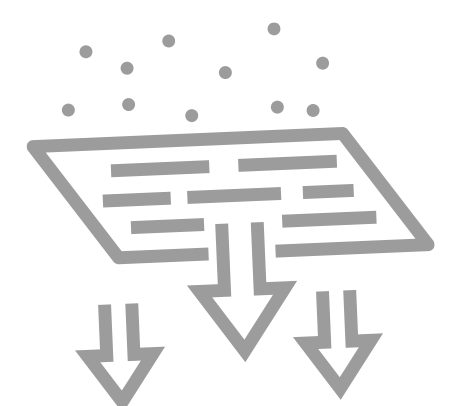
Product Performance and Advantages

Low Power Consumption



0.35 kW

Strong Fine Dust Suction Performance



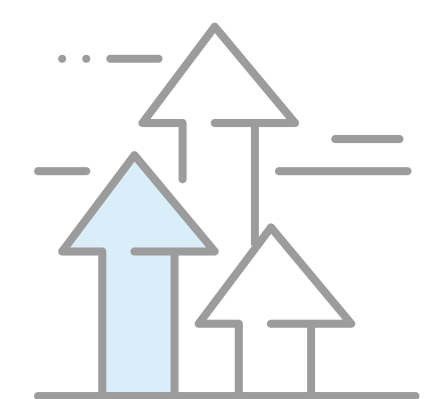
Over **30 m/s**

Low Noise



Below **55 dB**

Extensive Installation Capacity



2,000 +units

Easy to Use

Removes harmful substances from shoes as users walk over the mat

Durable Construction

Ensures robust durability by applying stainless materials to all parts of the mat

Superior Performance

Proven effectiveness through tests in data centers, subway stations, semiconductor facilities, and various other environments

Convenient Installation

Available in 185 size variations, with a thickness of just 17.5 mm, suitable for installation anywhere

Easy Maintenance

Dust tray and HEPA filters can be replaced by anyone in less than 5 minutes

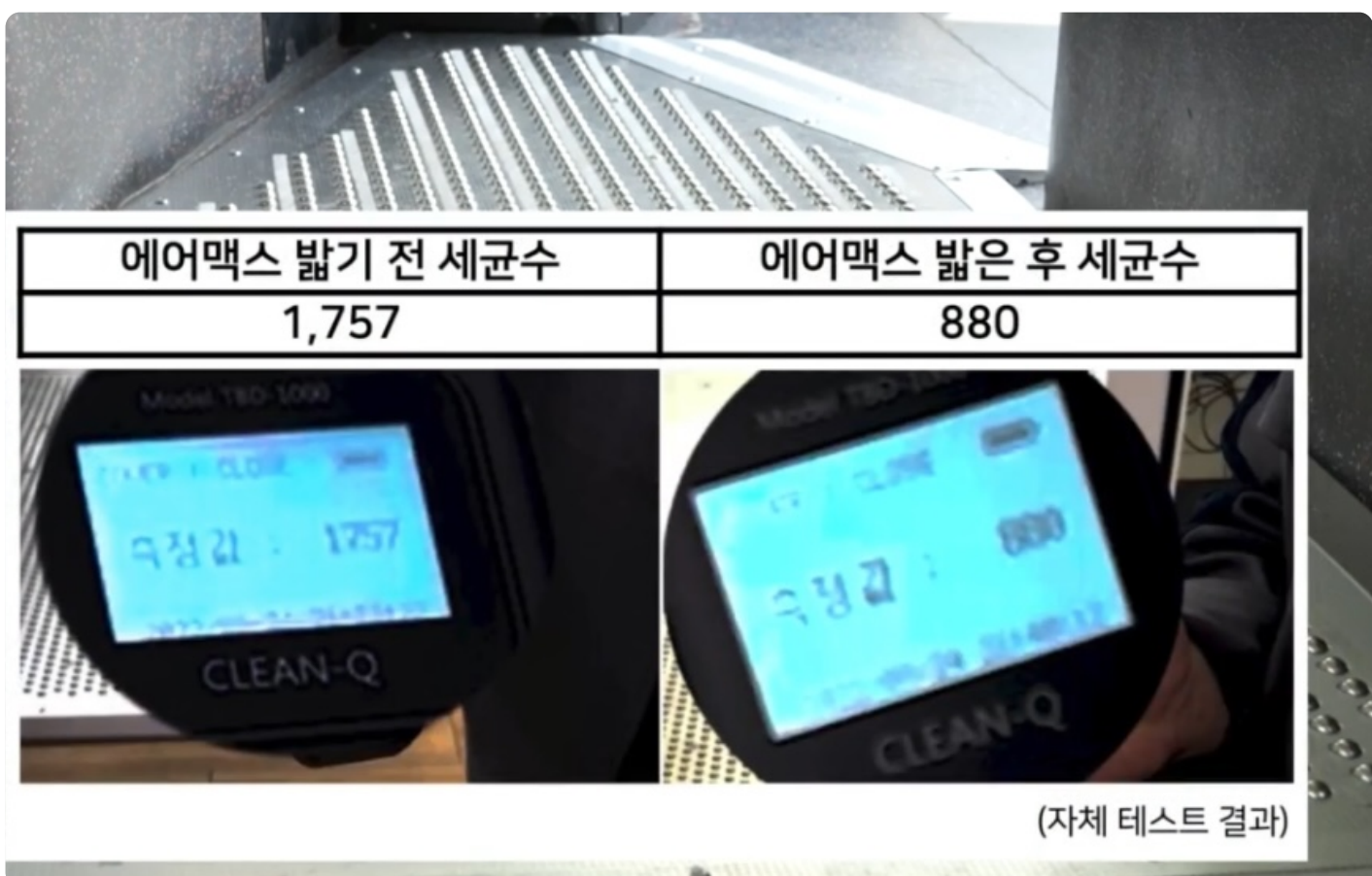
Key Features and Advantages

Improving Indoor Air Quality and Purifying Surrounding Air



Removal of Fine Dust and Harmful Particles

Testonic's suction mat effectively removes fine dust (PM10) and ultrafine particles (PM2.5) with powerful suction. Test results show PM10 levels reduced to Zero and PM2.5 levels decreased by 100, significantly lowering the concentration of harmful particles in indoor air.



Effective Elimination of Harmful Microorganisms

Results from using the suction mat show a significant reduction in bacterial count from 1,757 to 880, achieving over 50% effectiveness in microorganism removal. This contributes to a safer and healthier indoor environment by eliminating harmful microorganisms.



Purifying Surrounding Air

The air purification efficiency (tested over 25 cycles) showed 88.5% purification of PM0.5 and 85.7% for PM3.0, demonstrating high air purification performance. This significantly improves indoor air quality and ensures cleaner air.

성능 지표		측정 결과	개발 목표
흡입력		35.7 m/sec	25 m/sec 이상
배출공기 질	PM10	0 개	100개 이하
	PM2	100 개	10,000개 이하
이물질 회수율(2회 작동)		94.8%	80% 이상
공기정화능력 (25회 작동)	PM0.5	88.5%	
	PM0.3	85.7%	

Powerful Suction of Over 35.7 m/s

With a suction power of over 35.7 m/s, the mat ensures consistent performance and efficiency in blocking fine dust and harmful particles. This creates a cleaner and safer indoor environment.



03

Test Reports

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- Samyook Seoul Hospital	

Evaluation of NSF4 Pathogenic Bacteria Reduction Rate of AirMax Clean Mat

KRIBS 한국의과학연구원

Attached page

1. 시험 결과

시험항목	반응시간	시험 결과		
		반응 전 균수 (CFU/ml)	반응 후 균수 (CFU/ml)	감소율 ¹⁾ (%)
대장균 (<i>Escherichia coli</i>)	99초	4.3×10^6	$< 1.0 \times 10^4$	> 99.77
	297초	4.3×10^6	1.0×10^4	99.77
황색포도상구균 (<i>Staphylococcus aureus</i>)	99초	1.9×10^7	8.5×10^6	55.26
	297초	1.9×10^7	6.5×10^6	65.79
폐렴간균 (<i>Klebsiella pneumoniae</i>)	99초	1.3×10^7	3.0×10^6	76.92
	297초	1.3×10^7	4.0×10^6	69.23
녹농균 (<i>Pseudomonas aeruginosa</i>)	99초	2.1×10^6	1.0×10^4	99.52
	297초	2.1×10^6	4.0×10^4	98.10

Evaluation Results on *Escherichia Coli* Reduction Rate

반응시간	결과 사진	
	반응 전	반응 후
99초		
297초 (99초 x 3회)		

Evaluation Results on *Staphylococcus aureus* Reduction Rate

반응시간	결과 사진	
	반응 전	반응 후
99초		
297초 (99초 x 3회)		

Evaluation Results on *Klebsiella Pneumoniae* Reduction Rate

반응시간	결과 사진	
	반응 전	반응 후
10초		
30초		

Evaluation Results on *Pseudomonas aeruginosa* Reduction Rate

반응시간	결과 사진	
	반응 전	반응 후
99초		
297초 (99초 x 3회)		

Antibacterial Copper Filter

99.9% Reduction of Mold & Bacteria



(48732) 부산광역시 동구 중앙대로 248 번길 14
Tel : 051-463-5462~4 Fax : 051-462-8803

TEST REPORT



의뢰자 : (주)테스토닉

주소 : 경기도 안산시 단원구 산단로 49, 2 층(원시동, 광성벤처타운 1)

품명 : 원단

의뢰자제시시료명 : AIRMAX TSTN-AF1

접수번호 : B270-21-01210

접수일자 : 2021-02-24

발급일자 : 2021-03-10

용도 : 납품용

쪽번호 : 1/4

의뢰하신 시료에 대한 시험결과는 아래와 같습니다.

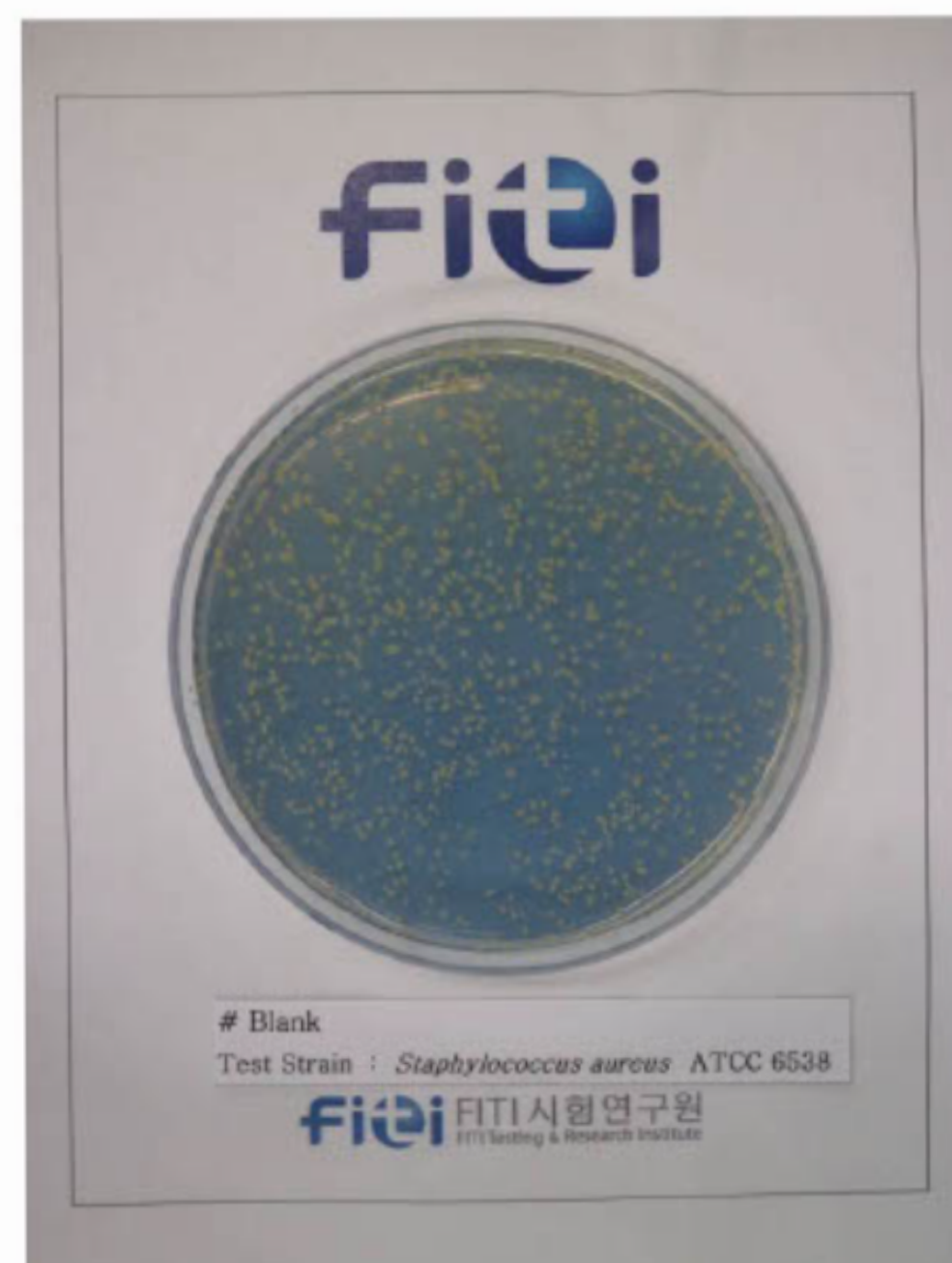
■ 시험결과 ■

01. 항균도 (KS K 0693 : 2016) : 세균수/mL, 정균감소율(%)

		BLANK	#1
균주 1	접종직후 균수	1.7×10^4	-
	18 시간 후 균수	9.3×10^6	< 10
	정균감소율	-	99.9
균주 2	접종직후 균수	1.7×10^4	-
	18 시간 후 균수	2.8×10^7	< 10
	정균감소율	-	99.9



균주 1 : #1



균주 1 : BLANK



균주 2 : #1



균주 2 : BLANK

Installation & Performance Report

– Samyook Seoul Hospital

Installed Area: Main Entrance, Main Building

Installation Date: September 3, 2020

Product Installed: AirMax CleanMat

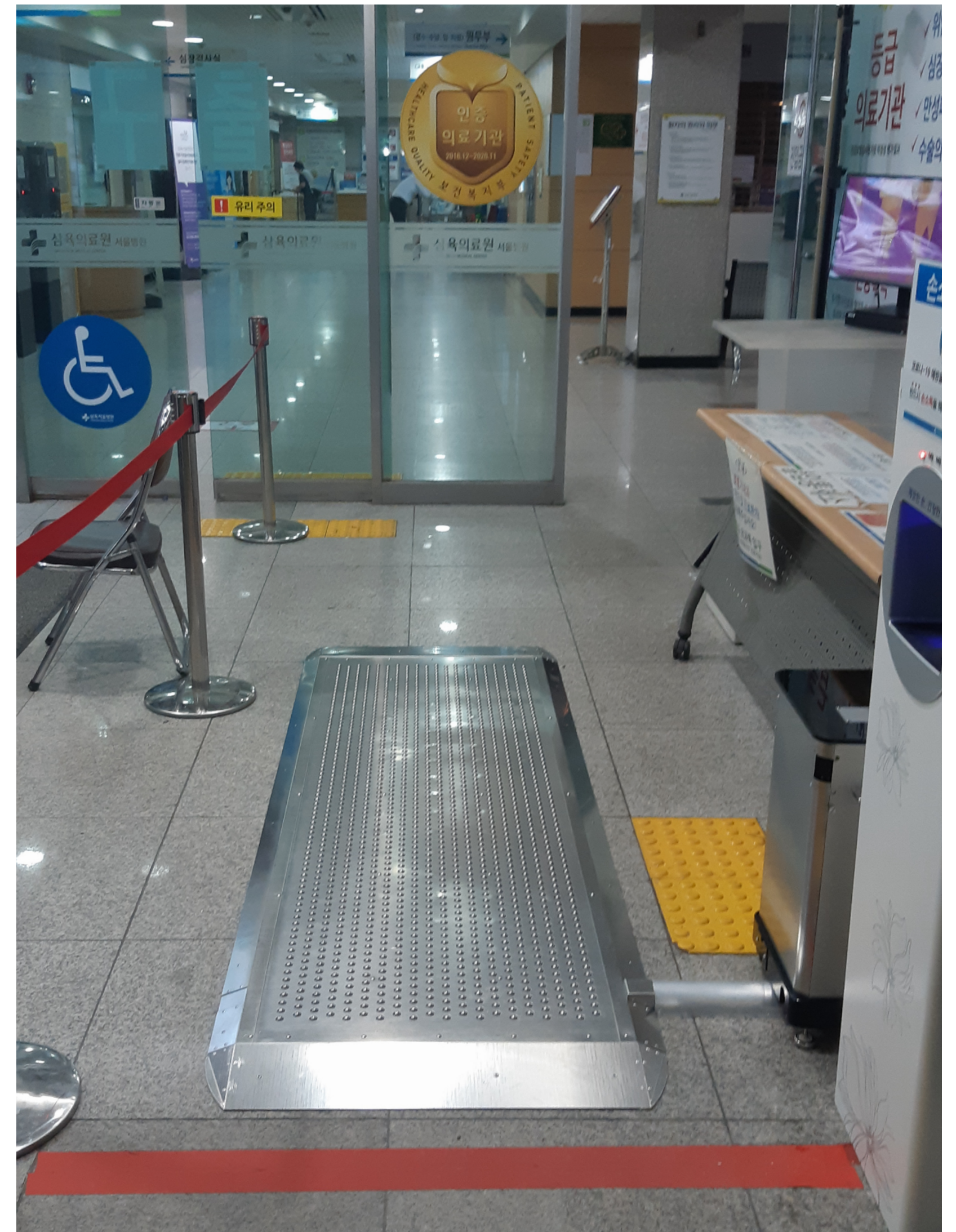
Mat Size: 2000 x 700 x 20 mm

Features: BLDC Motor (350W)

Performance Highlights

Fine Dust Collection (Over 3 Months)

- ✓ 4 separate dust bags collected (over 12–29 day intervals)
- ✓ **Total weight of captured dust: 1,313.9g**



20.09.03~20.09.14
(12 days dust collection amount)



285.5g

20.09.15~20.10.06
(20 days dust collection amount)



319.9g

20.10.07~20.11.02
(25 days dust collection amount)



379.4g

20.11.03~20.12.01
(29 days dust collection amount)



329.1g



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Case Studies

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- Demonstration at Korea Railroad Corporation 15
(Seoul Forest Station)



<Samsung Electronics' Vietnam Plant and Japan's Nitto Group Demonstrate>

AIRMAX Demonstration Details – Samsung Electronics

Details

Background	Promotion of manufacturing line contamination management standards based on advanced equipment and technology.	
Purpose of Demonstration	Demonstration Details	Demonstration Method
	Verification of efficiency in preventing contamination inflow.	Conducted tests based on Samsung Electronics' internal standards.
Results	Cleanroom level improved from 87,000 Class to 64,000 Class, achieving a 26.5% reduction in dust.	
Post-Demonstration Outcome	Adoption in production lines across overseas factories of Samsung Electronics and its affiliates, including in Vietnam, Thailand, the Philippines, China, Brazil, and Mexico.	

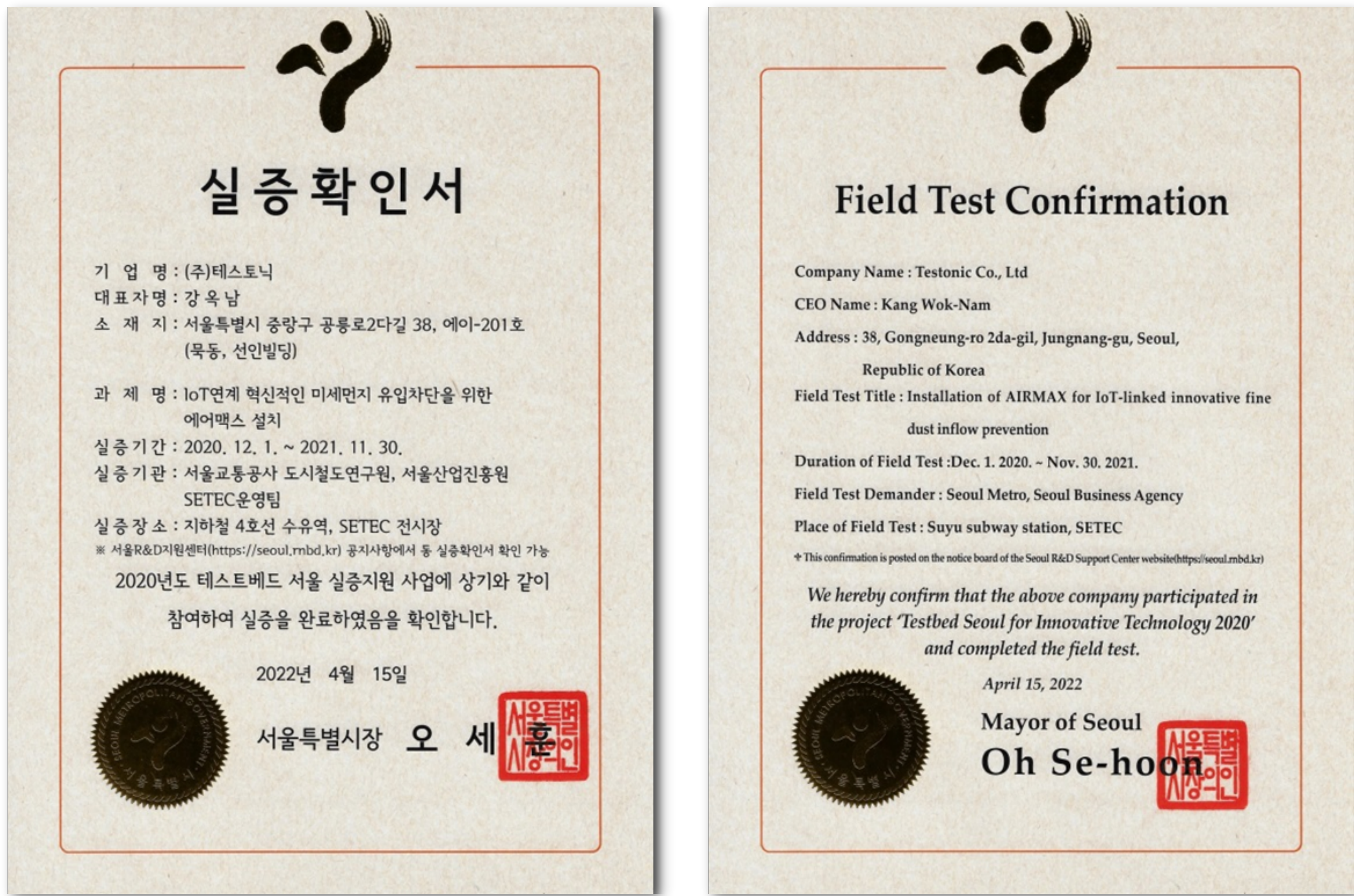
AIRMAX Demonstration Details – Japan Nitto Group

Details

Background	Application of contamination prevention measures to address issues caused by particles entering manufacturing facilities.	
Purpose of Demonstration	Demonstration Details	Demonstration Method
	Measurement of particle removal effectiveness on shoe soles.	Comparison of the number of Particle Counter foreign substances before and after stepping on the mat
Results	Removal of up to 80% of particles, verifying the device's efficiency in reducing contamination.	
Post-Demonstration Outcome	Selected as an Action Item for Contamination Prevention in 2024, with plans for product expansion in Nitto Group factories in Japan.	



AIRMAX Demonstration Details - Seoul Metro (Suyu Station)



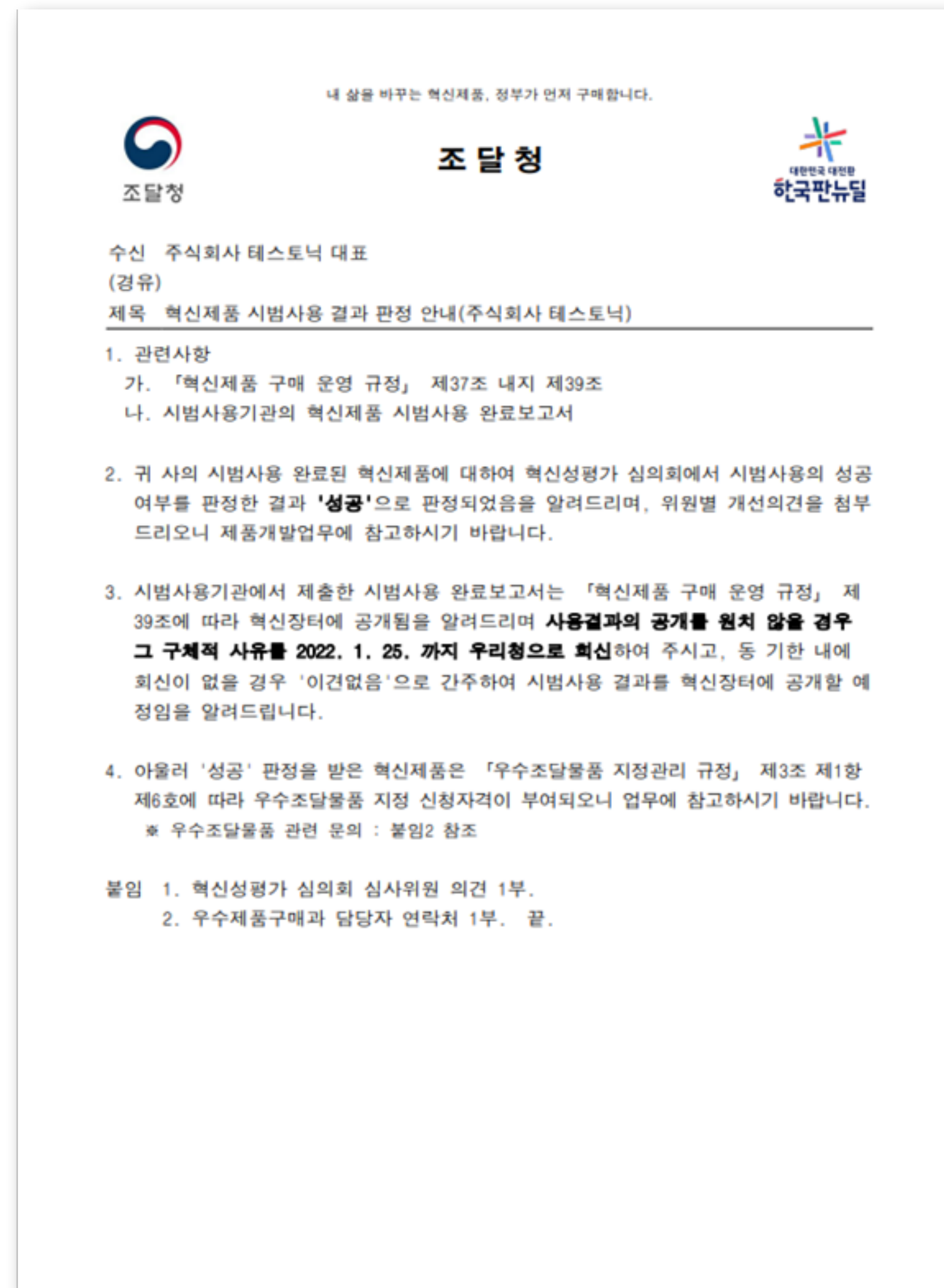
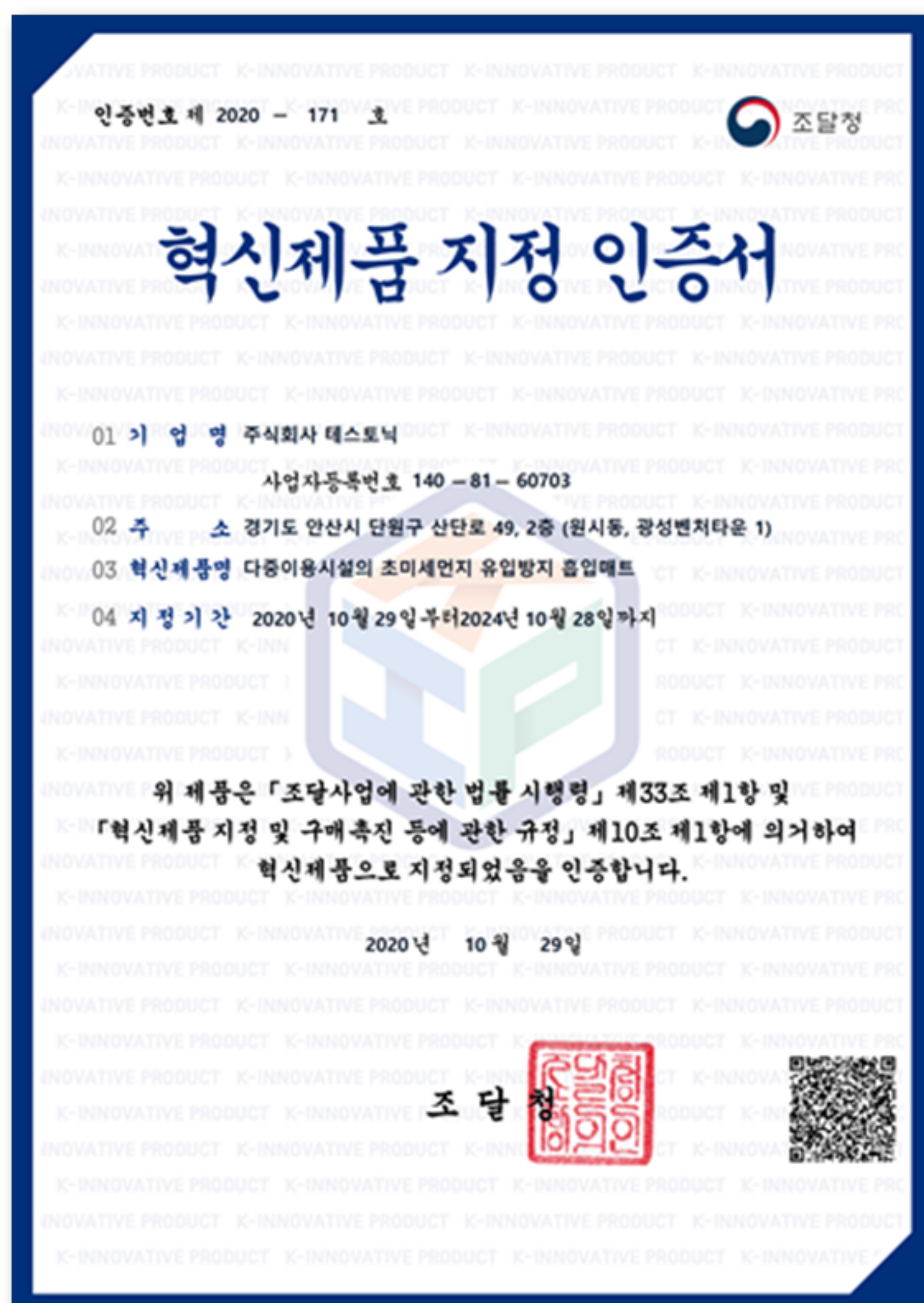
<Confirmation of Demonstration in Seoul Testbed Project>

Details

Background		Validation of fine dust suction mat efficiency through Seoul's Testbed Program in subway stations.
Installation Site		Suyu Station (Line 4) with a daily average of 60,000 users.
Purpose of Demonstration	Demonstration Details	1) What percentage of fine dust is removed from the total collected dust? 2) How much is the concentration of fine dust reduced? 3) Do hazardous substances stick to shoe soles? 4) Does the quality of air emitted outside remain clean? 5) Are there solutions for various types of viruses?
	Demonstration Methods	1) Analyze the size and ratio of removed dust. 2) Measure PM2.5 and PM10 concentrations before and after installation. 3) Conduct compositional analysis of removed dust. 4) Analyze fine dust levels in the emitted air. 5) Test the application and performance of HEPA filters.
Demonstration Results	1) <u>Over 6 months, a total of 17kg of dust was removed</u> , with approximately 15% of PM10 particles removed, equating to 2.55kg of fine dust . This verified the product's efficiency in removing fine dust and particles.	
	2) PM10 levels at Suyu Station were reduced by an average of 54.13%, while PM2.5 levels were reduced by 67.2% after three installations .	
Post-Demonstration Outcome	3) Analysis of removed substances found 48g of heavy metals (such as chromium, lead, and nickel)	
	4) Fine dust concentration in emitted air measured at 9.79 µg/m ³ , showing excellent performance.	
	5) Dust trays and HEPA filters achieved a purification efficiency of 99.9%.	
	Selected as a designated fine dust suction mat for 10 subway stations in the first half of 2024 .	



AIRMAX Demonstration Details - KORAIL (Seoul Forest Station)



<Certification for Innovative Product Designation & an official notice of success>

Details

Background	Application for trial use by KORAIL to verify the fine dust reduction performance and efficiency of the suction mat, designated as an innovative product by the Public Procurement Service.		
Installation Site	Seoul Forest Station (Bundang Line) - Daily average of 20,000 users.		
Purpose of Demonstration	Demonstration Details		Demonstration Methods
	1) How much dust is removed from shoe soles?		1) Compare the amount of dust removed during operation.
	2) How much is the concentration of fine dust reduced?		2) Measure PM2.5 and PM10 concentrations before and after installation.
	3) Do shoe soles carry hazardous substances?		3) Conduct a compositional analysis of removed dust.
	4) Are there any safety concerns with installation in multi-use facilities?		4) Check for potential accidents (slipping, falling, etc.).
Demonstration Results	5) Is the product durable for outdoor use?		5) Examine product durability (corrosion, wear resistance, etc.).
	6) Are there any user complaints or inconveniences?		6) Survey users for feedback on product performance, satisfaction, and convenience.
	1) <u>Approximately 3kg of dust removed from shoe soles over two weeks</u> , proving high performance in particle removal.		
	2) PM levels before installation: PM10 34.5, PM2.5 20.2. After two months: PM10 21.3, PM2.5 13.7, achieving 38% reduction in PM10 and 32% reduction in PM2.5.		
	3) Analysis of removed substances revealed 87g of heavy metals (chromium, lead, nickel, etc).		
Post-Demonstration Outcome	4) Ensured zero accidents related to safety issues such as slipping or wear, with high user satisfaction.		
	Designated as a excellent product among suction mats by the Public Procurement Service after a successful evaluation.		

05

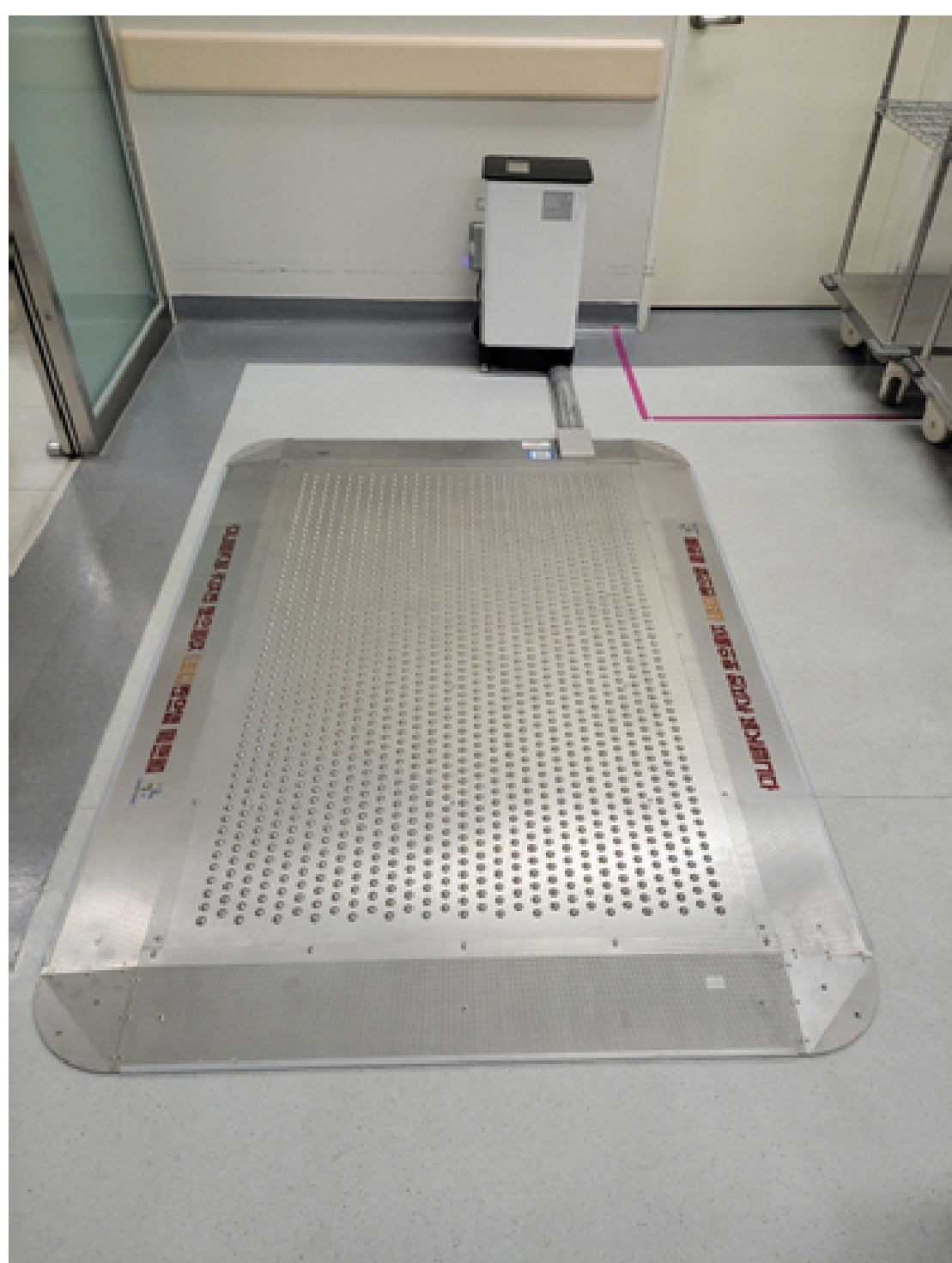
Installation Cases and Achievements

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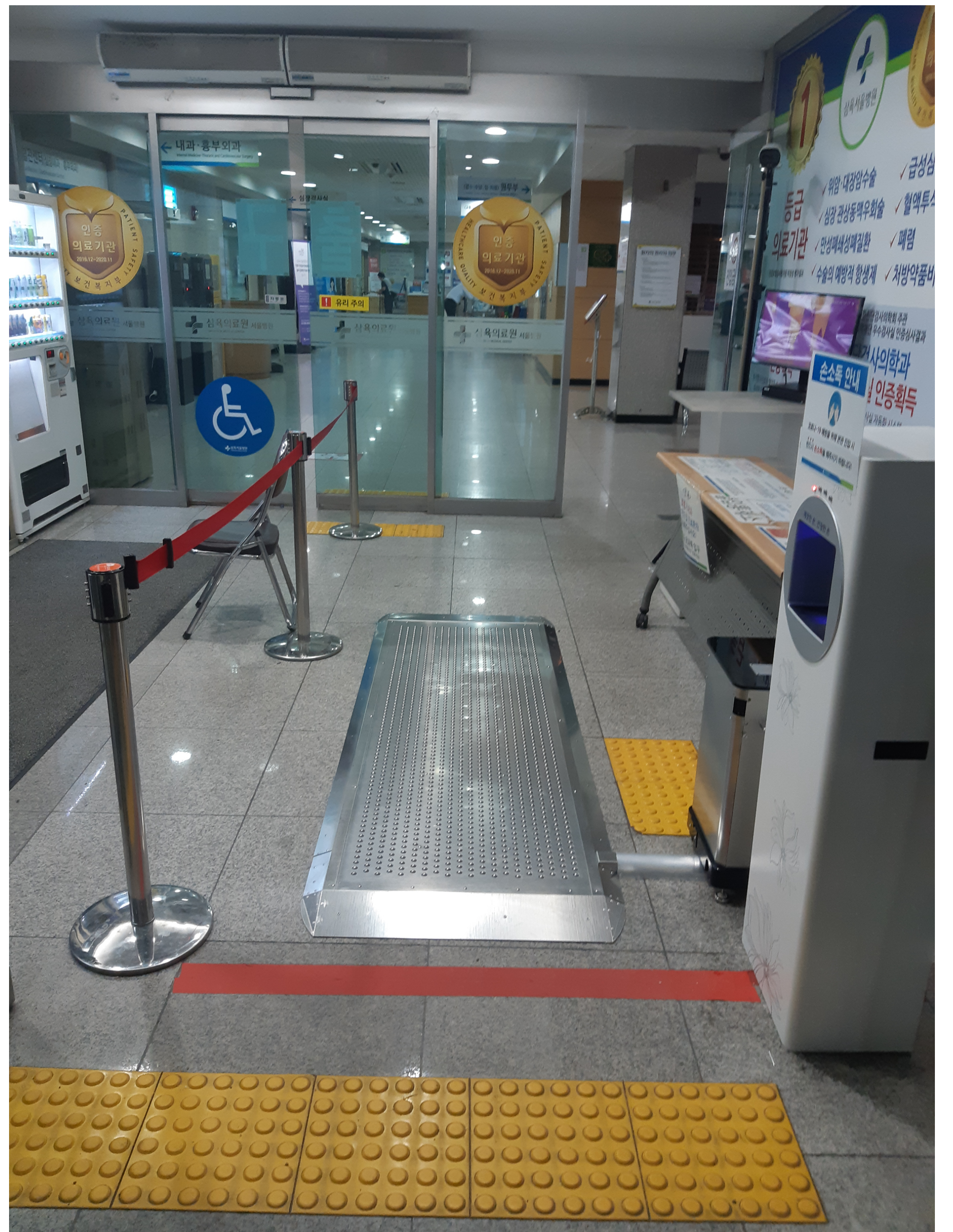
National Assembly	Samsung Electronics	Korea Gas Corporation
Ministry of the Interior and Safety	Samsung Heavy Industries	Korea Investment Corporation
Ministry of Economy and Finance	Samsung SDI	Dongdaemun Design Plaza
Ministry of Environment	Naver	Korea Hydro & Nuclear Power Co., Ltd
Ministry of National Defense	LG Chem	Korea Southern Power Co., Ltd
Ministry of Education	LG Display	Korea Southeast Power Co., Ltd
Ministry of Health and Welfare	LG Innotek	Korea Central Power Co., Ltd
Ministry of Science and ICT	LG Household & Health Care	Korea Western Power Co., Ltd
Ministry of Culture, Sports & Tourism	SK Hynix	Korea East-West Power Co., Ltd
Ministry of SMEs and Startups	SK Broadband	Korea District Heating Corporation
Seoul Metropolitan Government	Hyundai Motors	Seoul Waterworks Headquarters
Anyang City	Hyundai Mobis	Korea Venture Investment
Siheung City	Hyundai Construction Equipment	Panasonic
Hwaseong City	National Pension Service (NPS)	HONDA
Guri City	NongHyup Bank	MITSUBISHI
Pyeongtaek City	Shinhan Financial Group	HP
Asan City	Kookmin Bank Integrated IT Center	HUAWEI
Busan Metropolitan Government	Seoul Museum of Art	HISENSE
Daejeon Metropolitan Government	Seoul Metropolitan Office of Education	UMTC
Jeju Special Self-Governing Province	Ansan Education Center	POSCO
Korea Land and Housing Corporation	Korea Aerospace Research Institute	DAELIM
KORAIL	National Science Museum	Kumho Petrochemical Co., Ltd
KEPCO	National Institute of Forest Science	LS Industrial Complex
Korea Expressway Corporation	Seoul Agricultural and Marine Products Co.	Sk Broadband
Shinbundang Railway	National Tax Service	Starbucks
Incheon Port Authority	National Assembly Library	Seoul National University Hospital





Hanyang University Seoul Hospital

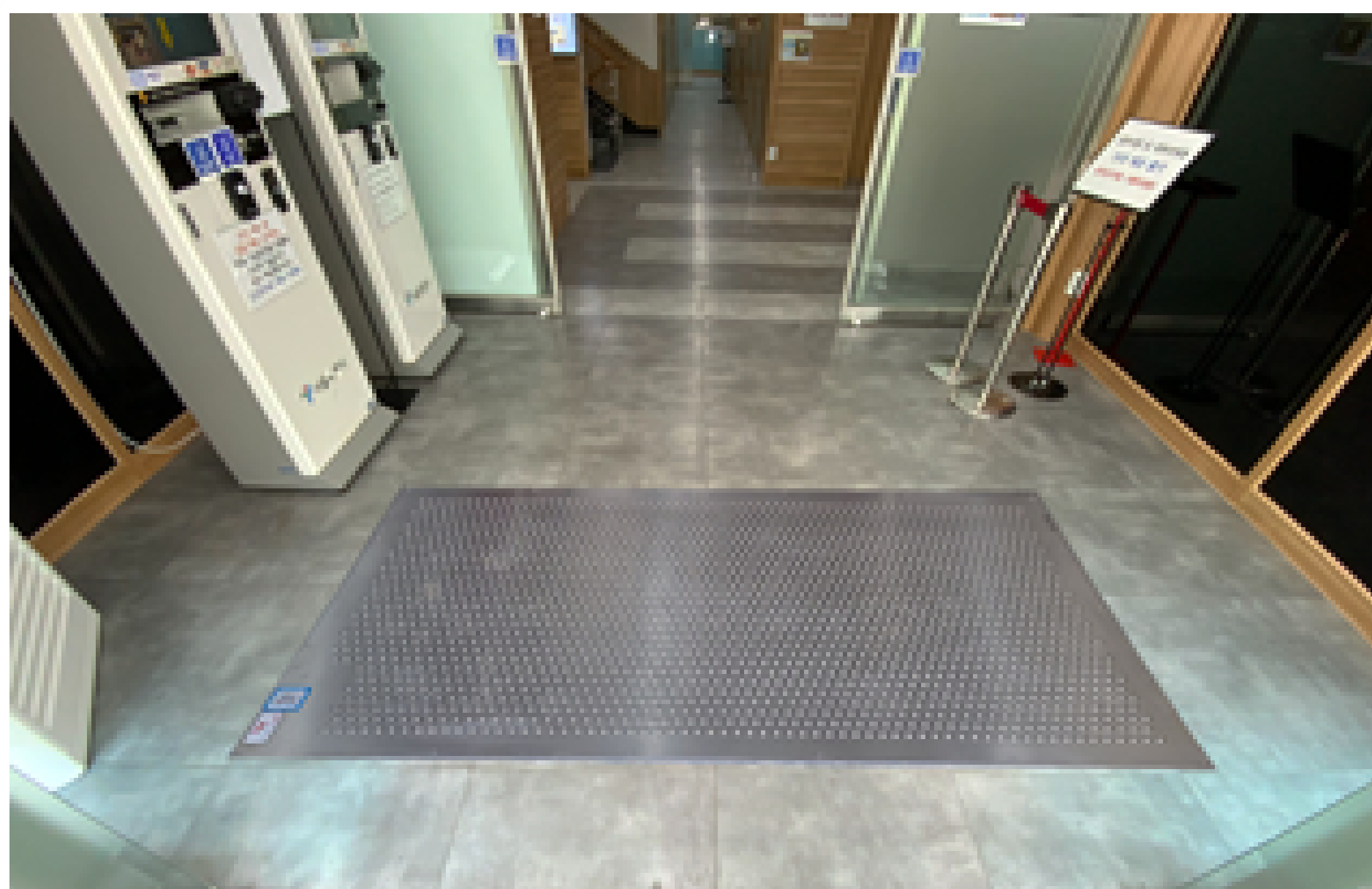








Seoul Metropolitan Government





LG Household & Health Care



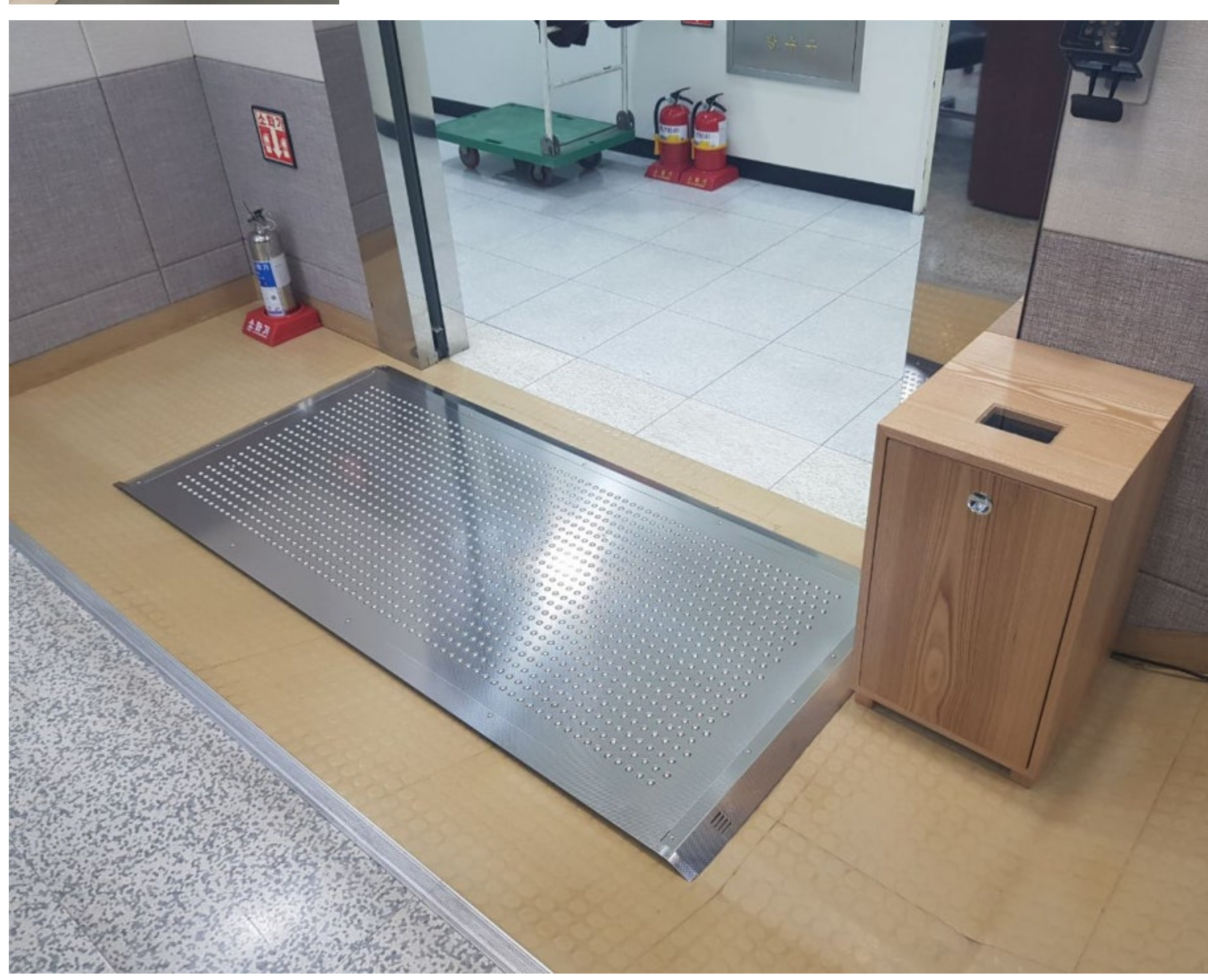
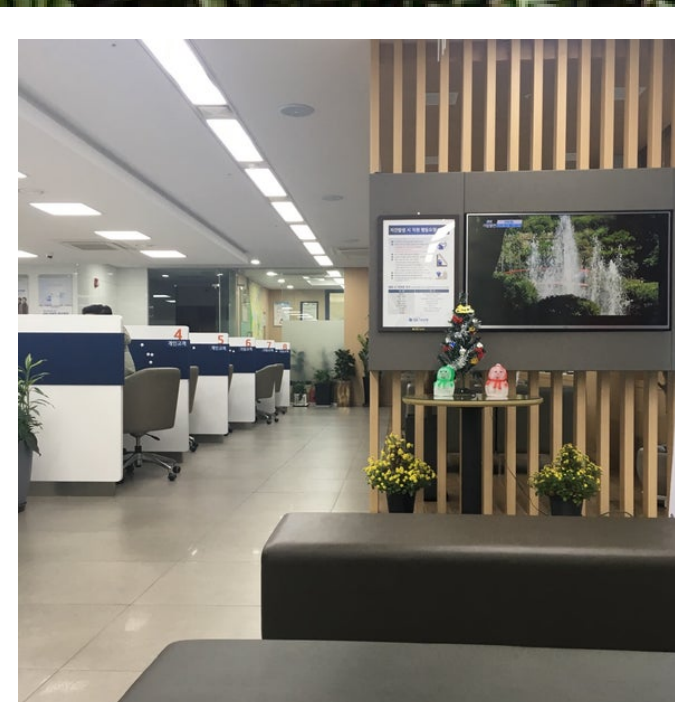


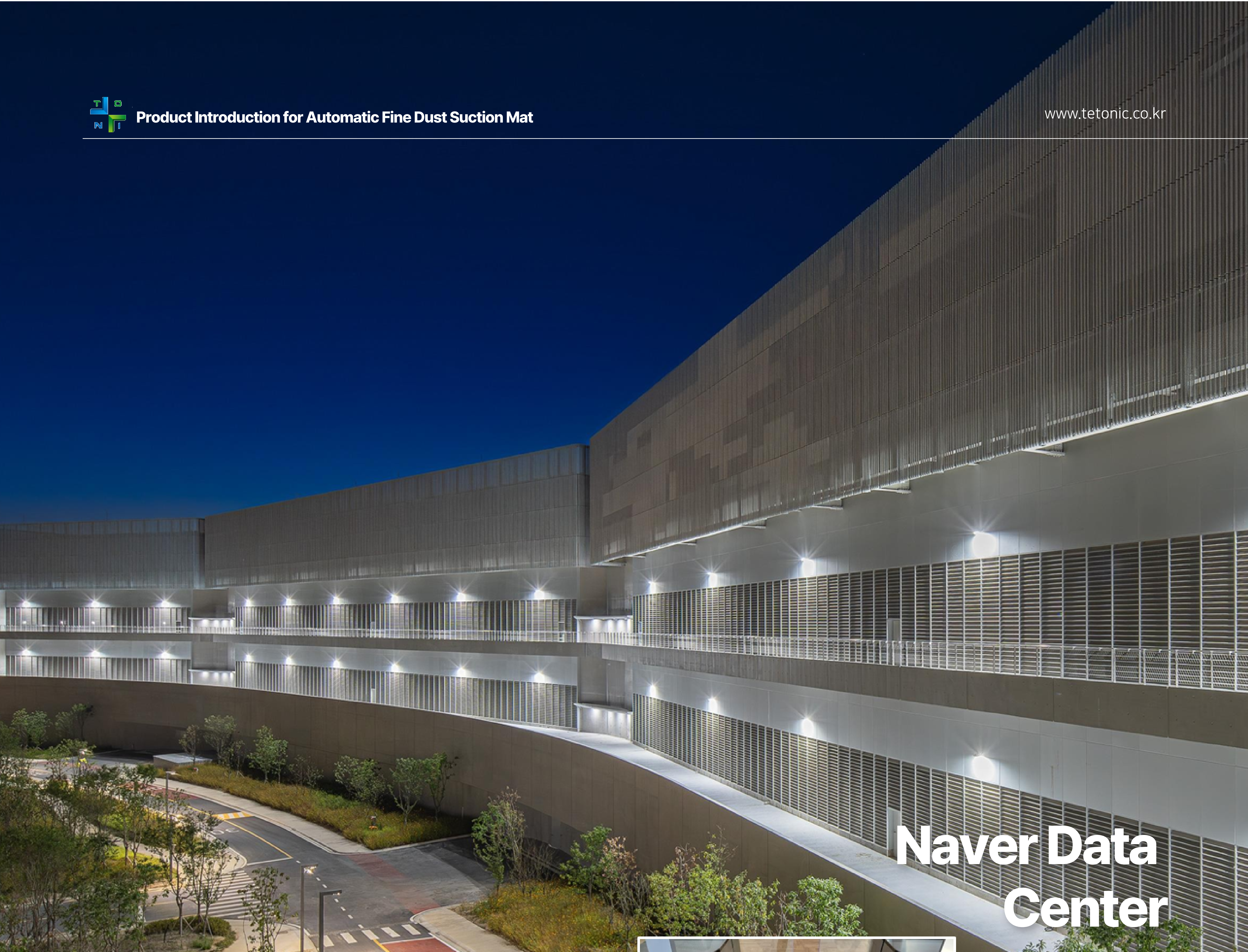
Kookmin Bank IT Center

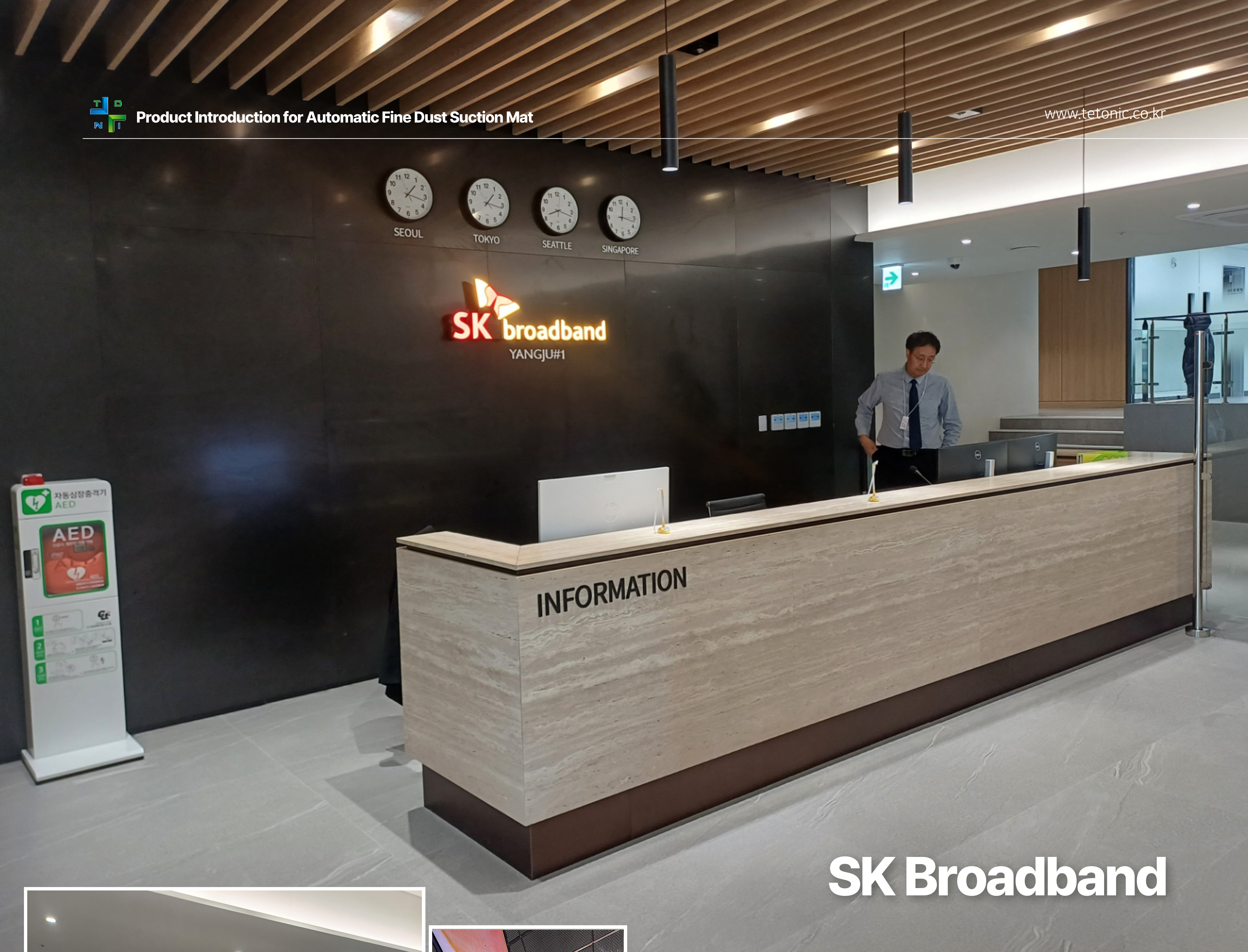




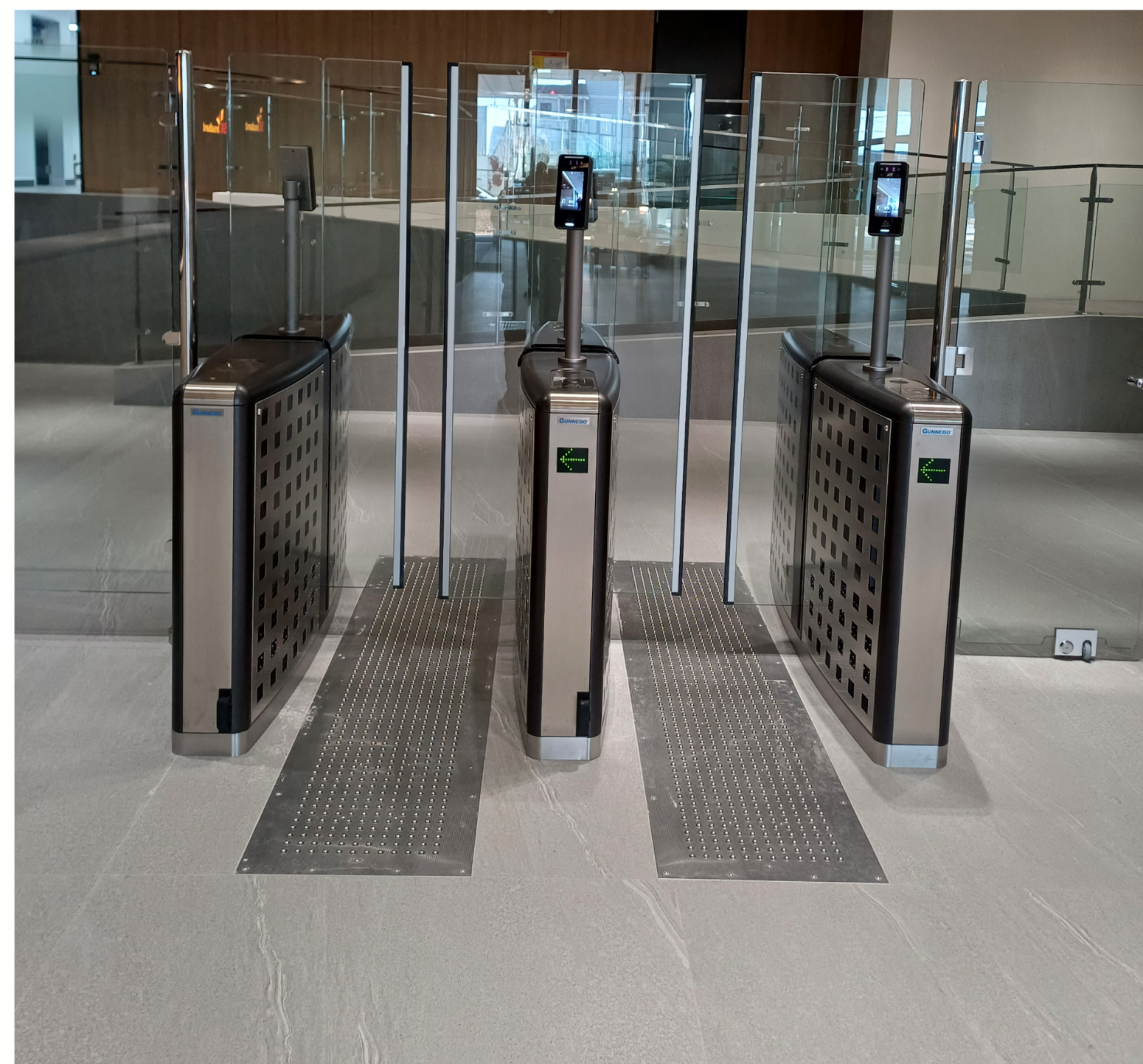
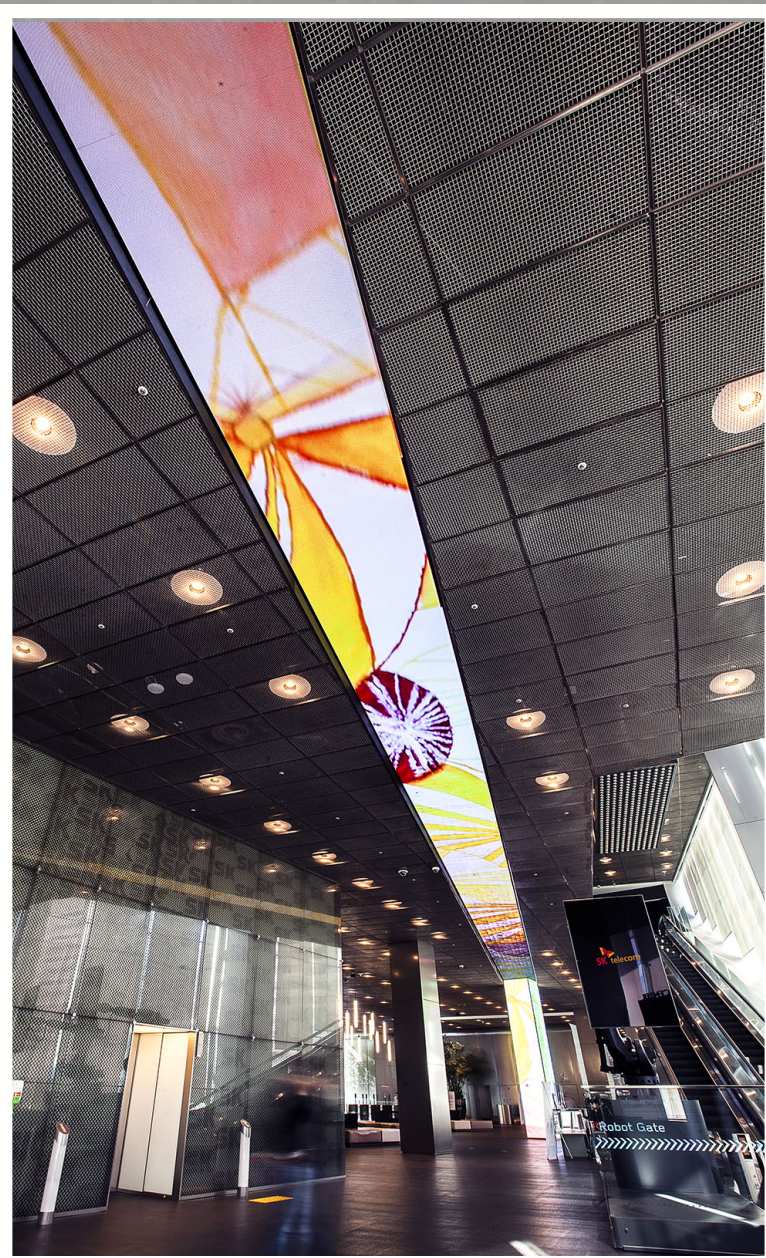
Industrial Bank of Korea Computer Center

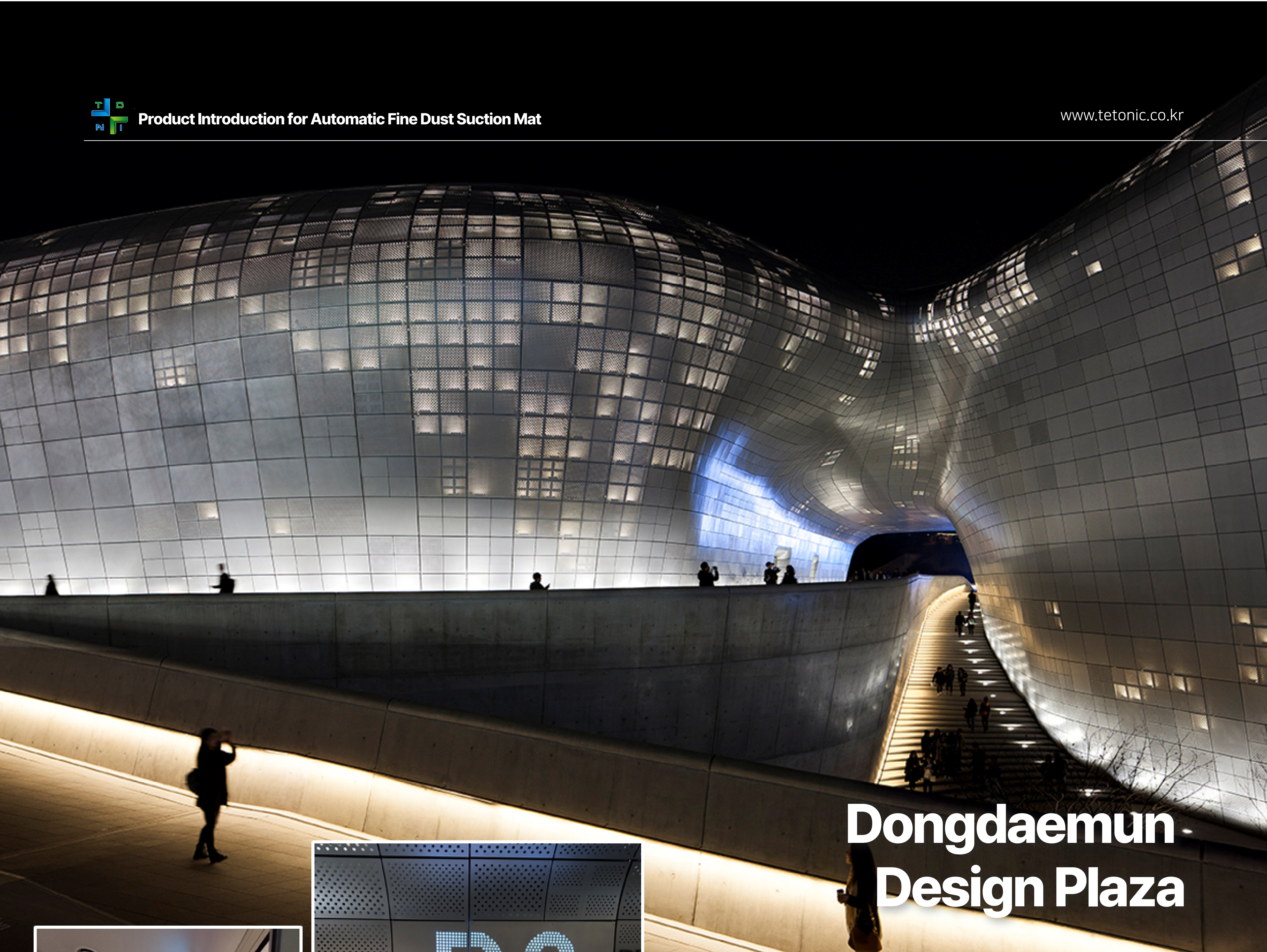






SK Broadband



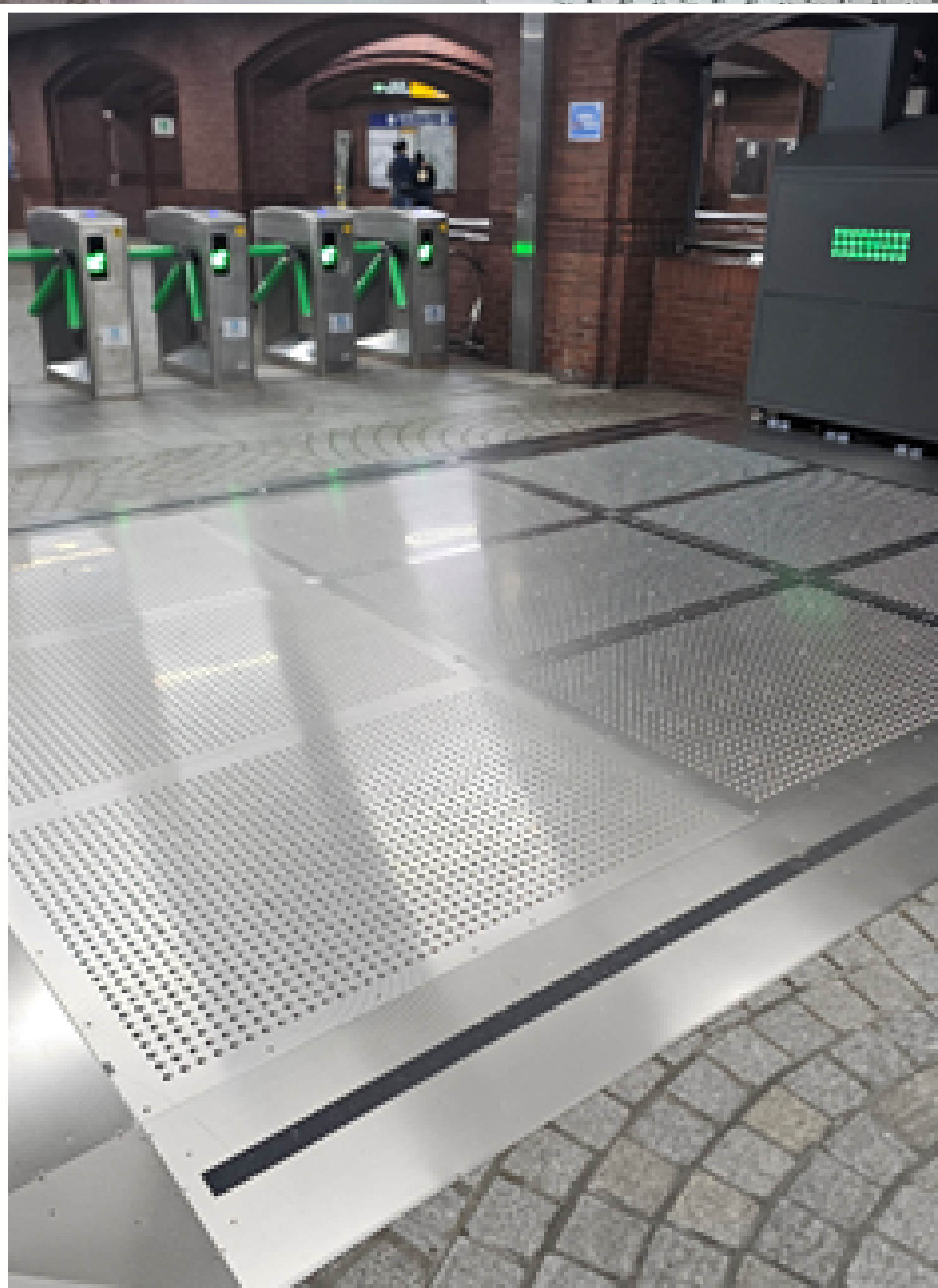


Dongdaemun Design Plaza





Seoul City Hall Subway Station





Jongro 5-ga Station Subway Station





AirMax CleanMat

The first step to
reduce fine dust
begins with
Testonic
