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*The safety
for the better Living*



KICM a Reliable Partner in
Construction Materials Technology.



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Korea Institute of Construction Materials makes a reassuring difference in your life. With our highly advanced technologies, we offer our customers superior construction-materials testing and research services. Our experience and expertise help us ensure that products used in the construction industry meet the highest standards for safety and reliability.

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Institute Overview

As an industry leader, we provide a wide array of services to satisfy our customer needs. These include product testing and evaluation, planning and implementation of R&D projects, product quality certification, as well as comprehensive construction-materials educational programs for industry members to stay up to date on the latest technologies.

- 2007 03 Daegu · Gyeongbuk branch was recognized by Korea Laboratory Accreditation Scheme (KOLAS)
- 2006 11 Gyeonggi branch was opened.
- 2005 07 Daegu · Gyeongbuk branch was designated as general quality inspector by the government.
- 2004 12 Designated as a product safety testing organization by the government.
- 2003 03 Designated as official inspector of products procured by the government.
- 2002 01 Designated as educator of "GQ" marks for small & medium businesses.
07 Designated as chemical materials testing lab under the Special Law on Parts and Materials Manufacturers.
07 Incheon branch of KICM was recognized by the Korea Laboratory Accreditation Scheme (KOLAS)
08 Designated by Korean Agency for Technology and Standards as educator for product liability.
- 2001 02 Jeonbuk branch was opened.
- 2000 06 Designated as KOLAS educator to provide national calibrator agencies with programs on quality control and in-house compliance.
11 Gangwon branch was opened.
- 1999 08 Designated by the Ministry of Environment as material inspector for sewage treatment facility and wastewater treatment tank.
- 1998 03 Daegu · Gyeongbuk branch was designated by the Ministry of Construction & Transportation as quality test agencies.
05 Designated by Korean Agency for Technology and Standards as KOLAS educator.
09 Chungcheong branch was designated by the Ministry of Construction & Transportation as the special agency for the quality test.
10 Honam branch was designated by the Ministry of Construction & Transportation as a special agency for quality test.
- 1997 01 Designated by the Ministry of Labor as educator and trainer under the Law on Employment Insurance.
05 Incheon branch was opened.
06 Designated by the Ministry of Construction & Transportation as the special agency for the quality test
- 1996 10 Designated as the Ministry of Construction & Transportation as general quality inspector.
10 Designated by the Patent Administration as patent technology evaluator.
- 1995 06 Designated by the Small & Medium Businesses Administration as KOLAS.
08 Busan · Ulsan · Gyeongnam branch was opened.
08 Daegu · Gyeongbuk branch was opened.
08 Honam branch was opened.
08 Chungcheong branch was opened.
- 1994 07 Established as KICM.

Our key objective is to ensure the safety of people in homes, offices and factories constructed of new and traditional building materials. To achieve this, we have leading-edge technologies and equipment as well as a broad team of highly qualified personnel. These specialized resources allow us to perform construction-materials testing and research to the most exacting standards on a continual basis. Such outstanding practices have earned us international certification as a leading materials-testing organization.



Test & Inspection

KICM conducts tests and inspections in accordance with international standards and is committed to promoting construction safety.

Institute Recognized by KOLAS

KICM was established testing systems in line with international standards to provide reliable testing and customer credibility.

Fundamental Materials

Aggregates used in structure are tested and analyzed. Such findings are supplied to related companies to produce durable and harmless aggregates.

Vibration Related Products

Tests are undertaken to analyze basic and physical traits of products with KS recognition such as secondary concrete products, stone and ceramics, and tiles.

Concrete Products

Physical property tests are carried out on concrete mixing formula, concrete mixing agent chemicals, setting accelerator, cement waterproof agent, penetrating interface waterproof agent, curing agent, repair agent, and grout agent.

Bitumen Mixes and Fillers

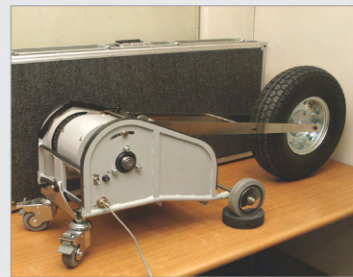
Comparison and maturity tests are undertaken on construction materials and bitumen compositions.

Polymer Materials

Various tests are undertaken on polymer products such as waterproof materials, rubber products, water cleaning facilities, and etc.

Interior/Exterior Materials

Interior and exterior materials are tested for overall property, sound absorption, heat insulation and the quality of new materials are assessed.



Building Acoustic & Impact Sound Analyzer System / Bang Machine



U·T·M

Major Areas

Testing of Construction Materials and Products

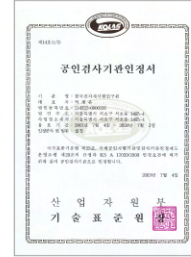
- Concrete products
- Bitumen mixes and fillers
- Macromolecular materials
- Interior/exterior materials
- Metals and steels
- Glasses
- Cements and lime powders
- Bedrocks and aggregates
- Timbers
- Paints and finishing materials
- Clays and their products
- Gypsum and its products
- Waste water treatment tanks and water tanks



International Accredited Examination Organization Certificate

Testing of Environmentally-friendly Construction Materials

- Insulation materials
- Acoustic environment
- Fire safety
- Hazards and functions



Accredited Examination Organization Certificate

Chemical Analysis

- Analysis of organic & inorganic compounds
- Wastes harmful to the environment
- Heavy metals

Paints and Finishing Materials

Products such as paint and thinner are tested. Various projects are underway to develop new products and technologies.

Timbers

Reliable test results can be acquired on a variety of wood products thanks to KICM's advanced test equipment.

Metals

With regards to metal products and mechanical elements related to construction, technical advice and reliable tests are given to promote safe construction and improve product quality.

Glasses

Property tests are undertaken on all kinds of construction glasses such as float glass, enforced glass, and marked glass.

Cements

A variety of tests are undertaken to analyze physical and chemical traits of all cement-related products used for construction.

Chemical Analysis

Ingredient tests are carried out on construction materials, natural mineral, inorganic material, and steel & metal material, and harmful material leakage tests for construction waste.



Taber Type Abrasion Tester



Waving Tester



I.C.P

Fire Safety Test

KICM tests and evaluates fire-retardant materials in construction, shipbuilding and railways according to international standards, thereby contributing to the overall safety in building and transportation.

Evaluation of Heat Release and Flame Propagation

Using the heat release ratio and flame propagation rate, KICM determines the amount of heat and mass reduction as well as critical amount of thermal flow. This enables us to analyze the fire characteristics of the materials.

Toxic Gas and Smoke Density Analysis per International Standards and Code

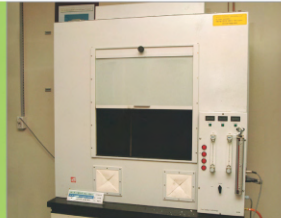
Smoke and toxic gases are the main cause of fire injury and death. Using mouse and simulated testing facilities, KICM determines the toxic level of gases. These data are collected, analyzed and then provided to the industry, so that they can develop the products having improved fire safety.

Emerging as a World-class Testing Laboratory

KICM is equipped with internationally approved testing methods and equipments such as Cone-calorimeter, Flame spread tester, Smoke density tester, Combustion tester, Oxygen ratio tester, Non-flammable tester and Incombustibility tester. KICM has also various advanced facilities as well as many trained researchers, and cooperate with other International Testing Laboratories through the mutual recognition and verification of testing protocols. Our testing is thus reliable and satisfies customer, leading to improved products with superior fire safety.



Smoke Density Chamber



UL 94 Horizontal / Vertical Flame Chamber



Dual Cone Calorimeter



Incombustibility Tester



Flooring Radiant Panel

Testing and Inspection of Environmentally Hazardous Substances



HPLC



ATD-GC/MS



Clean Room System



Small Chamber & Incubator

Analysis of Indoor Air and Construction Materials

KICM is equipped with testing and inspection systems to analyze Volatile Organic Compounds (VOCs) and Formaldehyde (HCHO) as well as indoor air quality according to international standards such as ISO, EN, ASTM and JIS etc.

Odor Test and Inspection

KICM is also capable of testing and analyzing for Ammonia, Hydrogen Sulfide and Trimethylamine (TMA) as well as 22 other compounds listed in the Odor Regulation Act of February, 2005.

Heavy Metal

KICM is goal is to support industries to improve the quality of life by analyzing heavy metals and other toxic substances in common building materials such as paints, plastics and wall papers through International Procedures such as RoHs and WEEE and ELV regulations.

Quality Testing

Construction Quality Inspector Designated by the Ministry of Construction & Transportation

KICM controls and ensures the quality of in-process construction by means of field surveys and inspection, and construction material testing.

Variety of Services in Support of Business and Industry

Civil Engineering Materials

Testing of construction base supports and granular adjustment base including abrasion ratio, sand equivalent value of soil/fine aggregate, stability, interior CBR, etc.

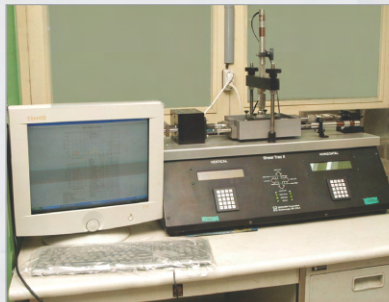
Soil Quality

Testing of physical and mechanical properties and mixing formula of foundation soil, waterproof reclamation materials used on the construction sites.

Bedrock

Surveying, checking and testing of the bedrocks at the stage of preliminary and detailed design, as well as during construction.

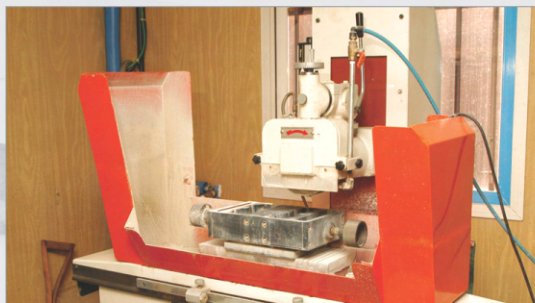
(Details of bedrock classification and testing : specific gravity and water absorption ratio, elastic modulus and Poisson's ratio, uni-axial compressive strength and tri-axial compression strength, joint shear strength, point load, elastic wave velocity, etc.)



Polishing Machine of Rock Specimen



Triaxial Compression Machine



Pile Dynamic Analyzer

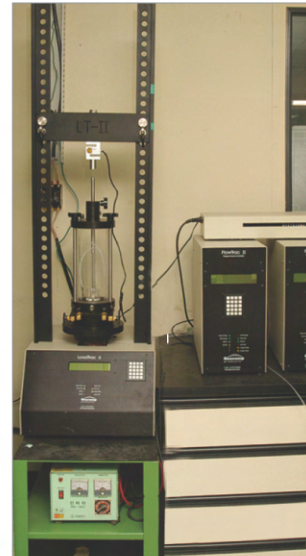
KICM a lab specializing in quality testing, as designated by the Ministry of Construction & Transportation. Provides its clients with accurate, reliable data through a variety of quality testing services.



Direct Shear Apparatus



Particle Size Analyzer



Triaxial Compression Apparatus

Variety of Services in Support of Business and Industry

Construction Materials

Testing of the mixing formula of the concrete used for structures at the stages of preliminary and detailed designs, and testing of concrete products, asphalt concretes and their application at the construction site.

In-Situ Test

From construction site it confirms the condition of fundamental ground it does pile under static axial compressive load test, pile dynamic test, plate bearing test, in-situ C.B.R and in-place density with the examination for.

Geotechnical Engineering

Surveying of the sub grade, testing of its mechanics, and numerical analysis of the results.

Weathering Test & Evaluation

Almost all industrial materials, products and structures will be weathered by climate and environment in some manner. 'Weathering' refers to the capacity of a material to resist such degradation.

KICM is equipped with diverse facilities and equipment to assess the weather ability of any material, being supported by MOCIE.

Outdoor Natural Exposure Testing

KICM was the first lab in South Korea to establish a 53,000m² outdoor natural exposure testing lab in Seosan, Chungchongnam-do. This site is currently testing the ability of various industrial materials and structures to resist the effects of natural weathering.

[Outdoor Testing]

Monitoring Of Climatological Data

KICM offers climatological data such as temperature, humidity, solar radiation amount, UV radiation amount, rainfall etc

Direct Exposure Testing

KICM offers a variety of direct or indirect exposure testing options to meet international and manufacturer specific test programs and to simulate end-use conditions.

Specialized Exposure Testing

KICM offers a variety of specialized exposure testing options to concentrate sunlight onto test specimens and to determine durability and/or colorfastness of materials used for automotive interiors. In addition, KICM offers the laying test under ground and submergence test in seawater to simulate the corrosion environment of special materials.



Salt & CASS Spray Test



Xenon Arc Weathermeter



Sunshine Carbon Arc Weathermeter



Seosan Outdoor Exposure Test Site



Direct Exposure Rack

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[Indoor Testing]

Artificial Accelerated Testing

Simulated extreme weathering conditions are achieved by exposing specimens in controlled chambers to Xenon and other artificial light sources ; as well as elevated and cyclic temperature and humidity. Such tests degrade the subject materials much more rapidly than outdoor exposure. KICM is equipped with weathering instruments that are able to conduct numerous test methods on a variety of materials.



Combined Cyclic Corrosion Test

Artificial Corrosion Testing

KICM is capable of testing materials that degrade under other exposure conditions. To this end, metals and concretes can be subjected to artificial marine or industrial conditions. Specialized apparatus allow simulation of exposure to sea water, toxic and corrosive, corrosive solution, and submerging/drying test methods.

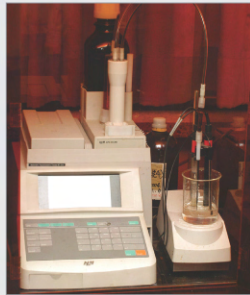


Concrete Combined Deterioration Tester

Evaluation & Analysis

KICM has various instruments that allow analysis and evaluation and analyzing of the degradation in materials that have been subjected to tests under outdoor natural exposure and/or artificial accelerated testing.

Waterproofing · Repair · Reinforcement



Automatic Titration Unit



Creep Tester



Water Permeability Tester

Quality Test

Waterproofing Technologies : Painted film, seat, permeability, polymer families, bentonite, primer, etc.

Maintenance Technologies : Crack filler, section recovery agent, grout, expansion material, etc.

Protection Technologies : Anti-corrosive agent, concrete surface protection agent, reinforced coating agent, steel skeleton protection agent, etc.

Reinforcement Technologies : FRP, Aramid fiber reinforcement agent, steel fiber reinforcement agent, fiber glass reinforcement agent, etc.

Concrete Material Technologies : ordinary and special concrete mixing designs, chemical compounds for concrete, inorganic materials, etc.

R & D

Research Collaboration with Private Companies : KICM supports private companies in their technological development, or conducts researches with them jointly, and evaluates new technologies and products.

Research into Core Technological Challenges of Small & Medium Businesses

: KICM supports small & medium businesses through joint research projects.

Assessment of Patent Technologies

: Level, utility and spread of patent technologies and their availability for production.

Research into Standardization

: Recommendations for enactment and revision of KS specifications.

Research in Construction Technologies

: KICM conducts national research projects to help foster standardization in the development of construction materials and engineering techniques in Korea.

Technical Support

KICM provides its clients with information about advanced foreign technologies.

KICM facilitates seminars and technical exchange programs among clients.

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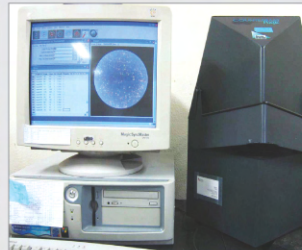


Length Comparator
(Dial gauge method)

Wellbeing Materials · Product Test & Evaluation



FT- IR Spectrometer



Colony Counter



ION Counter



Mark Quality Warranty

'원' mark declares that the functional products tested by KICM using far -infrared rays must be warranted for their quality. This mark certifies not only construction materials but also various life necessities.

Quality Test

- Measurement of far -infrared ray emission rate and emitted energy
- Anti-bacterial and anti -fungal test
- Deodorization test
- Measurement of degradation caused by infrared rays
- Measurement of anions
- Photocatalytic performance test
- Analysis of other properties

Research Projects Applicable for Far-Infrared Ray Applied Tests

Evaluation of the commodities relevant to far-infrared rays, development of new materials and products relevant to far-infrared rays, etc.

Seminars

Cases of technical guidance and research are publicized, while the results of far-infrared ray applied analysis are reported together with domestic and foreign cases and applications.



This mark is a quality assurance mark for far-infrared ray applied and functional products.



Dust Cleaning Efficiency Chamber

Quality Assurance

Review of KS Certification

KICM is designated as the deciding authority for KS certification of construction materials according to Industrial Standardization Code.

- KS certification
- Regular review for KS certification
- Regular review of KS products

Areas of Certification

- Civil engineering (KS F)
- Ceramics (KS L)
- Metals (KS D)
- Machines (KS B)
- Chemicals (KS M), etc.



KICM has a history of certifying construction materials with the impartiality and integrity essential to a fair certification authority.

Quality Certification for Product Excellence of Small & Medium Businesses

KICM explores model small & medium businesses reputed for their outstanding quality and service, as well as their sound management, and certifies their products so that consumers may confidently purchase their products.

- **Certifier : Administration of Small & Medium Businesses**
- **Categories of the items certified**



- + Chemicals : 24 items including admixtures and water-proofs
- + Metal construction materials : 118 items including water pipes, drain pipes, flooring materials, door/window sets, hinges, floor tiles, gabions and welded steel wire nets
- + Processed glass : 7 items including sealed (double) glass
- + Sanitary equipments : 15 items including sanitary wares, tubs and fiber-glass reinforced plastic waste water treatment facilities
- + Paper : Roofing stencil paper
- + Sound-proof materials: 13 items including sound-proof panels
- + Non-metal construction materials : 223 items including ready-mixed concretes and concrete bricks
- + Ritual equipment and non-metal hinges : 4 items including charnel chests and floor hinges

건 Mark Quality Certification

'건' marked products are ensured by KICM for their quality. KICM only warrants excellent construction materials with its '건' mark.

- **Categories of the products eligible for '건' mark**
- **All construction materials :**

KS F (building and civil engineering materials), KS B (machines), KS D (metals), KS L (ceramics), KS M (chemicals), and so on.



Reliability Test & Evaluation

Reliability Test & Evaluation & Certification 'Reliability' means that a part, material, product or system can maintain its initial quality and performance without significant change for a certain period of time (hours, miles, cycles, etc.,) under specified conditions (uses, environmental conditions). A reliable product will provide problem-free, use or operation for an extended period, and thus consumers will be satisfied with it.

KICM was designated by MOCIE (No.: 2002-17, July 1, 2002) as chemical material (coating) assessor according to the Special Law for Parts and Materials Manufacturers. Since then, KICM has developed reliability assessment criteria whereby parts and materials are certified.

Items Certified

- Heavy duty coatings
- Traffic paints
- Electro-magnetic interference shield coatings
- Photocatalytic coatings
- Fire-proofing coatings

Major Instrumentation

- Complexed cyclic corrosion test instrument
- Complexed Thermal-Shock environmental equipment
- Measurement system of electromagnetic waves shield effectiveness
- FT-IR spectroscope
- Surface Measuring machine
- Spectrophotometer
- Haze -Gloss meter
- VOCs Decomposition Test System of Photo-Catalytic coatings
- Ultra -Microhardness Measuring System
- Adhesion test machine for coating films

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FT-IR Spectrometer With Microscope



Electro-Magnetic Interference Shield Effect Measurement System



Complexed Thermal Shock Environmental Test Instrument



Spectrophotometer

Research & Development

Major R & D Areas

Standardization

- Research into enactment & revision of such codes as KS and GR.
- Research into enactment & revision of various construction association standards.

Pavement Materials

- Research into and evaluation of the asphalt mixes for pavement.
- Research into recycled asphalt concretes.
- Research into permeable pavement materials.

Environmentally-friendly Materials

- Research & development of environmentally-friendly construction materials.
- Research into the technologies that reduce the compounds contaminating indoor air.
- Research into recycling of wastes.
- Research into the technologies making use of recycled aggregates.

Cements & Concretes

- Research into functional concretes.
- Development of functional concrete products.

Major Research Initiatives

Trust Research Projects

- R & D of various construction materials.
- Evaluation of performances of new technologies and products.

National Policy Research Projects

- Development of industrial technologies (Ministry of Commerce, Industry and Energy: MOCIE)
- Development of clean technologies (MOCIE)
- Research into industrial competitiveness (MOCIE)
- Development of construction and transportation technologies (Ministry of Construction & Transportation)
- Frontier projects for the 21st century (Ministry of Science and Technology)

Evaluation of Patent Technologies

- Evaluation of patents and utility models relevant to construction materials.

KICM has been engaged in diverse R & D projects, including development of building and civil engineering materials and development /evaluation of construction products conducive to the stable growth of domestic construction-material markets.



Microscope



Comparator

Education & Consulting



Education

KOLAS Education Programs

- Construction specialists for international certified test and inspection labs, KOLAS assessors, internal auditors, KS A 17025/17020 codes, precise measurement, sampling, validation of test methods, etc.

Professional Technical Training

- Concretes, Asphalt concrete and other areas

Professional Courses for Construction Engineers

- Professional education for construction engineers according to Construction Technology Management Law
- Training courses for construction (building, civil engineering) quality test

Education on ISO 9000

- A training course for ISO certified auditors and ISO quality control

GQ Education

- A training course for GQ auditors and managers for product excellence among small & medium businesses

PL Education

- A basic training course for PL Code compliance

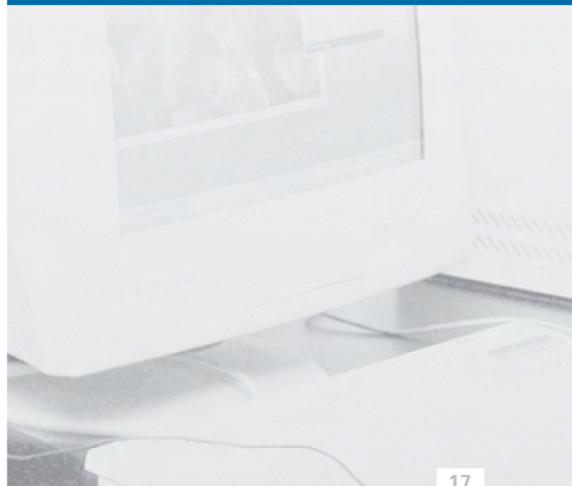


In the interest of promoting improved standards overall, KICM assists in the ongoing education of construction specialists, systematic development of construction technologies and the introduction of advanced foreign construction technologies. This is achieved, in part, by providing responsive educational programs and diverse consulting services to clients amenable to voluntary standards implementation.

Consulting

Consulting for Certification by the Public Test / Inspection Lab (KOLAS)

- Diagnosis and guidance for certification by KOLAS






Branch Institute

Busan · Ulsan · Gyeongnam Branch Institute

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Daegu · Gyeongbuk Branch Institute

277-5, Jukjeon-dong, Dalseo-gu, Daegu-city
Tel : 82-53-557-6681 Fax : 82-53-557-6695

Honam Branch Institute

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Tel : 82-62-973-1133 Fax : 82-62-973-5665

Chungcheong Branch Institute

60-4 Jang-dong, Usung-gu, Daejeon-city
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Incheon Branch Institute

1011-1 Mansu-dong, Namdong-gu, Incheon-city
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Gangwon Branch Institute

(5F, Small and Medium Sized Enterprises Support Center, Kangwon-do) 405-29 Usan-dong, Wonju-city, Gangwon-do
Tel : 82-33-743-9986 Fax : 82-33-743-9987

Jeonbuk Branch Institute

552-2, Yeoui-dong, Dukjin-gu, Jeonju-city, Jeollabuk-do
Tel : 82-63-271-9944 Fax : 82-63-271-9941

Gyeonggi Branch Institute

709-6, Idonggyo-ri, Soheul-eup, Pocheon-si, Gyeonggi-do
Tel : 82-31-544-3463 Fax : 82-31-544-3465

Gunpo Lab.

802-807 village , Hyundai i-Valley, 14-1, Dang-dong, Gunpo-city, Gyeonggi-do
Tel : 82-31-389-9150 Fax : 82-31-389-9199

Seosan Outdoor Exposure Test Site

463-4 Dokgok-ri, Daesan-eup, Seosan-city, Chungcheongnam-do
Tel : 82-41-667-9430~1 Fax : 82-41-667-9432



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