Company Catalog

DOWELLENG

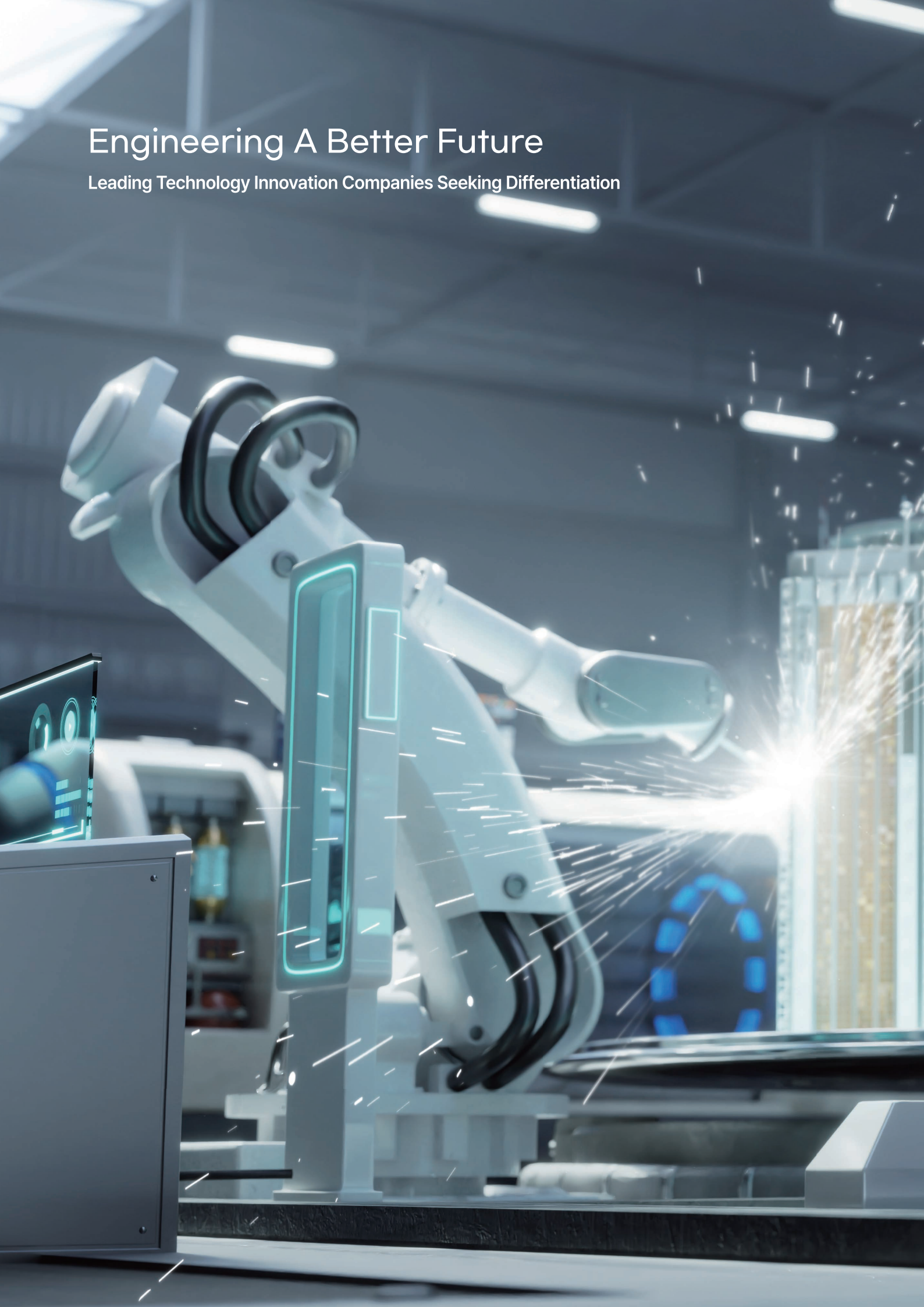
DOWELLENG Co.,Ltd.

Engineering A Better Future

A company specializing
in materials, parts, and equipment

Engineering A Better Future

Leading Technology Innovation Companies Seeking Differentiation

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DOWELLENG

COMPANY OVERVIEW

DOWELLENG Co., Ltd., established in November 2023, is
a specialized manufacturer of precision parts based on dissimilar material compounding,
under the vision of **"a technology innovation leader that pursues differentiation."**
We possess extensive technological capabilities in dissimilar material bonding and high-precision machining, composite material manufacturing based on powder processes, and mass production and commercialization of components. In addition, we hold core proprietary technologies and intellectual property rights in these fields.
DOWELLENG Co., Ltd. **provides optimized technical solutions for various industries**, including high-efficiency heat dissipation components, bimetal electrodes, precision machining, and reliability support.

Company Name	DOWELLENG Co.,Ltd.
Establishment Date	November 2023
Industry	Manufacturing (Electronic components, Industrial machinery, Automotive parts, Plastic parts, Other metal processing), Technical services and testing services
CEO/Representative	Hong Sang-hui
Homepage	https://dw-e.com
Major Business Areas	Copper/Aluminum dissimilar material joining, Heat dissipation materials, Bimetal electrodes, Heat dissipation housing, Precision machining, Reliability/ Durability/Environmental testing, Testing equipment, etc.
Certifications/Registrations	Venture company certification, Specialized company for materials, parts, and and equipment

COMPANY HISTORY

2025

- **2025. 10** — **Establishment of a Corporate Research Institute**
- **2025. 06** — **Certified as a Specialized Company for Materials, Parts, and Equipment**
- **2025. 04** — **Certification as a Venture Company (Innovation Growth Type)**
- **2025. 04** — **Attracted investment from EcoPro Secondary Battery Venture Investment Association**
  - recognized for outstanding technological capability and growth potential

2024

- **2024. 11** — **Completed the 1st round of paid-in capital increase**
  - Capital expanded from KRW 30 million to KRW 100 million
- **2024. 11** — **Grand Prize Winner in the "Welcome to TIPS" National Finals**
  - Officially recognized for technological excellence
- **2024. 10** — **Regional Grand Prize Winner in the "Welcome to TIPS" Daejeon–Gyeongbuk Area**
  - Proven capability in technology commercialization
- **2024. 07** — **Change of CEO**
  - Transition to a technology-centered management system

2023

- **2023. 11** — **Establishment of DOWELLENG Co., Ltd.**
  - With an initial capital of KRW 30 million
  - A technology-convergence company specializing in dissimilar and composite material applications

VISION&CORE BUSINESS AREAS

DOWELLENG

Vision

A leading technology innovator pursuing differentiation

Connecting technology, building trust

CORE BUSINESS AREAS

MATERIALS

Dissimilar Material Bonding/Joining Materials

High Heat Dissipation Materials

COMPONENTS

Bimetal Electrodes

Heat Dissipation Housing

Heat Sink, Cooling Cooler

PRECISION MACHINING

Precision Components/ Parts

Jig Fixture

Carbon Composite Machining/ Processing

EQUIPMENT

Hoop Ring Tester/ Testing Machine

Custom-Made Testing Machine

TESTING SERVICES

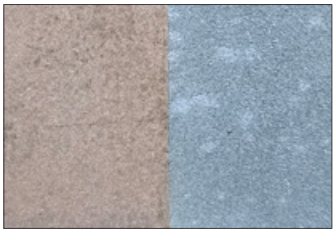
Vibration, Durability, Environment

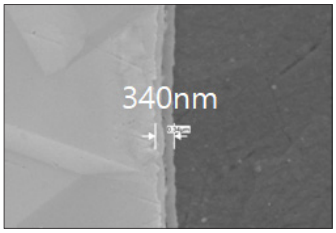
Fundamental Properties, Reliability

MATERIALS

Dissimilar Material Joining/ Bonding Materials

- Copper-Aluminum Dissimilar Material Joining/Bonding Materials
- High Conductivity / High Stiffness / Lightweight
- Applied to Bimetal Electrodes, Heat Dissipation Components

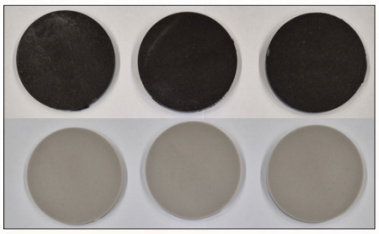




Item	Unit	Performance
Tensile strength	MPa	100
Conductivity	%IACS	74
IMC Thickness	nm	340

High Heat Dissipation Materials

- MgO-based High Heat Dissipation Engineering Plastic
- Thermal Conductivity level of 1.5 W/mK (PP [Polypropylene] level: 0.05 W/mK)
- Includes EMI Shielding performance



COMPONENTS

Bimetal Electrodes

- Manufacturing of energy-saving, lightweight components based on dissimilar material joining technology

Precision 3D Vision Technology

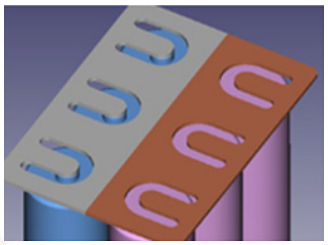
High-Precision Spindle Control

Enhanced Productivity based on High-Performance Spindle Tool

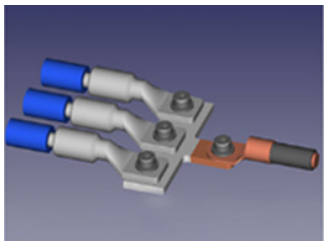
Secondary Battery Busbar

Electrode Component/Part

Cu/Al Thin Sheet Electrode



Next-Generation Bimetal Electrode for Secondary Batteries

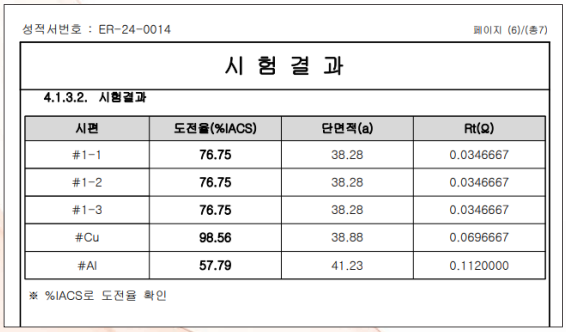


Cu/Al Industrial Terminal

- Achieved Electrical Conductivity of over 74% IACS
- Secured reliability for physical properties applied to automotive parts

시 험 성 적 서

(재)경북자동차임베디드연구원장



성적서번호 : ER-24-0014

페이지 (6)/(총7)

시 험 결 과

4.1.3.2. 시험결과

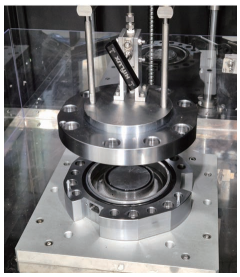
시편	도전율(%IACS)	단면적(a)	Rt(Ω)
#1-1	76.75	38.28	0.0346667
#1-2	76.75	38.28	0.0346667
#1-3	76.75	38.28	0.0346667
#Cu	98.56	38.88	0.0696667
#Al	57.79	41.23	0.1120000

※ %IACS로 도전율 확인

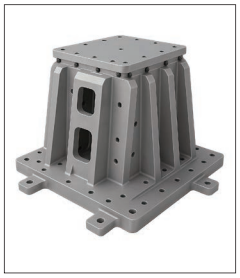
PRECISION MACHINING

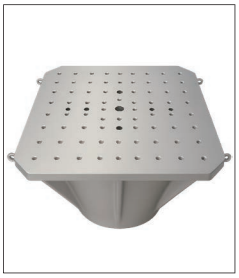
Precision Jig and Fixture

- Design and Manufacturing of High-Precision Jigs and Fixtures for Testing



Hoop ring test Jig



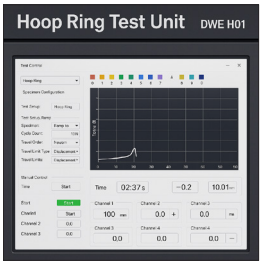


Vibration test Jig

EQUIPMENT

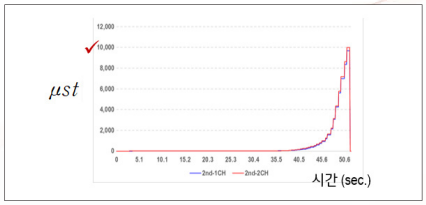
Ring Type Pressure Endurance Testing Equipment

- Capable of securing physical properties for Ring-shaped structures made of carbon fiber composite material used in applications such as hydrogen storage tanks, underwater drones, and lightweight structural missiles



Hoop ring test Unit

Ring type specimen



Result of Strain

Result of Pressure

TEST SOLUTIONS

Customer-Oriented Customized Service

- Performance of testing and evaluation based on technical understanding, consulting on testing/verification methods, and operational know-how.

Manufacturer

- Reduction in infrastructure investment
- Shortened testing procedure

Testing Institution

DOWELLENG

Consumer

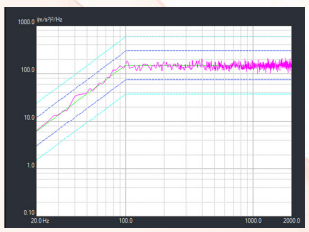
- Guarantee of safety and reliability for products

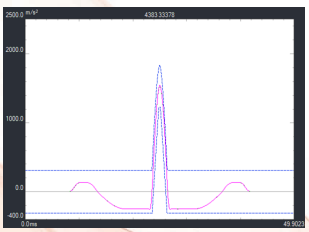
Owned Network

- Reduction in infrastructure investment
- Increase in specialists by field

Vibration Testing

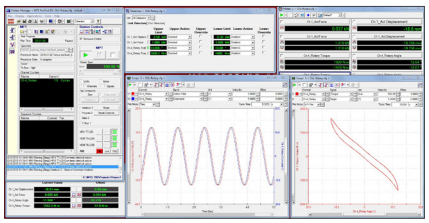
- Resonance Search Test, Vibration Endurance Test, Shock Test, Combined Environment Vibration Test
- Standards : KS R 1034, IEC 60068-2-6/27/64, MIL-STD-810F, etc.
- Major Application Fields
  - Automotive parts, Electronic modules, Defense parts, Electrical/Electronic parts, etc.





Durability Testing / Endurance Testing

- Mechanical Fatigue Test, Repeated Load Test, Simultaneous Multi-Axis Load Test
- Major Application Fields
  - Automotive parts, Aerospace parts, Shipbuilding parts, Defense parts, etc.



Performance & Environmental Testing

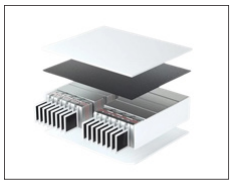
- Material and Component Strength/Stiffness Testing (Tensile, Compression, Shear, etc.), Component Shock/Impact Testing
- Verification of product operation and durability under conditions of temperature and humidity changes
- Verification of performance and durability under conditions of salt spray/gas/solution corrosion
- Verification of resistance and durability against dust and water spray
- Standards: ASTM D7136, IEC 60068-2-1/2/14/38/52/60, etc.
- Major Application Fields
  - Automotive parts, Electronic modules, Defense parts, Electrical/Electronic parts, etc.

NETWORK TECHNOLOGY

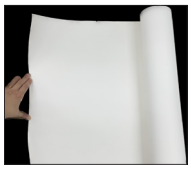
Insulation & NonCombu -stible

AERODGEL FOAM ENERGY SAFTY SHIELD

- Combination of nano-porous aerogel and inorganic fiber material
- Excellent insulation and fire resistance
- Ideal for EV battery packs for thermal runaway prevention and insulation in confined spaces



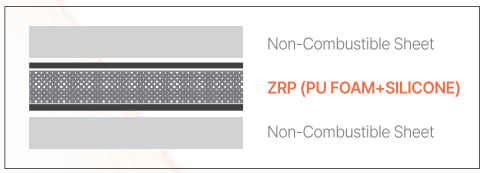
NON-COMBUSTIBLE SHEET

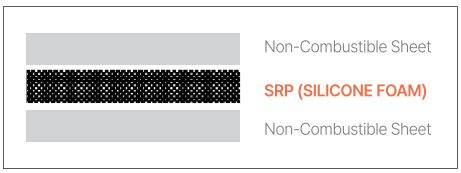


- Inorganic halogen-free material
- Flame Retardancy (UL-94-5VA)
- Increased product density for a smooth surface
- Minimization of volatile gas emissions

NON-COMBUSTIBLE PAD

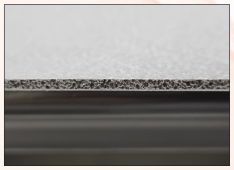
- Low specific gravity and lightweighting
- Hybrid product combining Non Combustible Sheet and Foam
- Capable of achieving various physical properties (Compression force set, deflection, hardness, specific gravity, etc.)
- Excellent price competitiveness
- Excellent insulation and heat resistance performance





HYBRID FOAM

- Possesses patents related to process and manufacturing technology
- Open Cell/Closed Cell structure
- Excellent price competitiveness (Compared to Silicone Foam)
- Possesses superior heat resistance compared to PU Foam(-50 ~ 120°C)
- Capable of achieving various physical properties (Specific gravity, hardness)
- UL94-V1

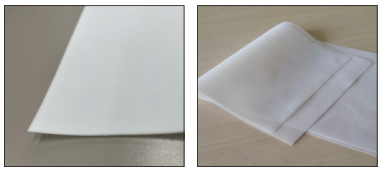


SILICONE FOAM

- Excellent cold and heat resistance (-50 ~ 200°C)
- Closed Cell structure
- Self-extinguishing property
- Capable of achieving various physical properties (Specific gravity, hardness, cell size, etc.)
- UL94-V0

CERAMIC SILICONE FOAM

- Felt made by blending ceramic and foam as base materials
- Hydrophobic, flame retardant, eco-friendly, insulating, flexible, and soft
- UL94-V0 and low thermal conductivity



EQUIPMENT

Owned Equipment

Equipment	Specifications
Universal Testing Machine (UTM)	50kN
Powder Blender	5L
Polishing Machine	250mm
Ball Mill	Φ50 × 300mm
Cutting Machine	400mm x 400mm
MCT	1,500*670mm / 8,000rpm
CNC	Ø490*50mm, 4,000RPM
3D Printer	350*320*325mm

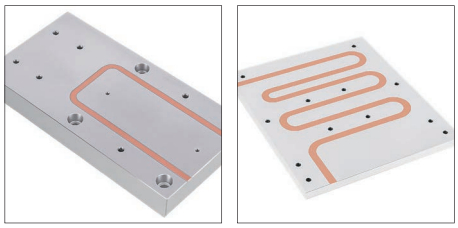
Major Networked Equipment

Equipment	Specifications
Combined Environment Vibration Tester	54kN, ~2,600Hz, -70~200°C, ~98%R.H., W1 x D1 x H1 (m)
Vibration Tester	45kN, ~2,600Hz, 600kg Max.
Thermal Shock Tester	-65~200°C, 3Zone, 150kg Max., W1.45 x D1 x H0.75 (m)
Thermal Shock Tester	-70~200°C, 3Zone, 50kg Max., W0.63 x D0.69 x H0.46 (m)
Rapid Environmental Change Tester	-90~180°C, ~98%R.H., 25°C/min
Salt Spray Tester	W1 x D0.6 x H0.5 (m), 0.07~0.17MPa
Multi-Axis Durability Tester	25/ 50/ 100kN, 5650Nm, 8ch
High-Speed Tensile Tester	40kN, 20m/sec
Material/Component Property Tester	2,500kN, 300mm

Newly Expanding Business Areas

Heat Sink

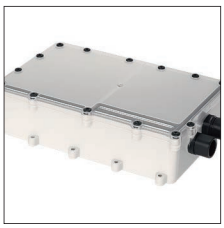
- It is possible to maximize heat dissipation performance through a Cu/Al dissimilar material cooling panel, which applies Cu to the core heat generating area of the cooling panel.



Secondary Battery Cooling Panel

Heat Dissipation Housing

- Maximization of heat dissipation performance in local areas through Cu/Al dissimilar material joining/bonding.



ICCU Housing

Battery Pack Housing

Cooling Cooler

- Inverter Cooler based on Friction Welding

Cooling Cooler

Carbon Fiber Composite Machining/ Processing

- Maximizing machining quality through Electrical Discharge Machining (EDM)

Carbon Composite Hole Machining/Processing

COOPERATIVE FIRM

DOWELLENG Co.,Ltd.

KITECH 한국생산기술연구원

High functional materials and components

Development and commercialization

technical collaboration

Institute for Advanced Engineering IAE 1992 고등기술연구원

Development of process equipment

technical collaboration

경북테크노파크 하이브리드부품연구소

Verification of reliability

technical collaboration

AMTC (재)한국첨단제조기술연구원 Advanced Manufacturing Technology Center

International marketing collaboration

COOPERATIVE FIRM

Testing/Evaluation and Standard Review

- Tel : 010-3013-4356
- E-mail : hmd@dw-e.com

Materials, Components, and Manufacturing/Processing

- Tel : 010-4531-8211
- E-mail : wyh@dw-e.com

Technology Development and Research Services

- Tel : 010-6435-9554
- E-mail : hsh@dw-e.com

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