

# Evaluation of Vacuum Insulation Panel Using HF-01S Sensors

## Optimizing Thermal Performance in Laminate Materials

### The Challenge

Nantong Ecotherm Insulations Co., Ltd. sought a precise numerical evaluation method to enhance the thermal performance of their Vacuum Insulation Panel (VIPs). The primary objective was to analyze and mitigate thermal bridges occurring within the laminate materials of the panels currently under development.

### The Solution

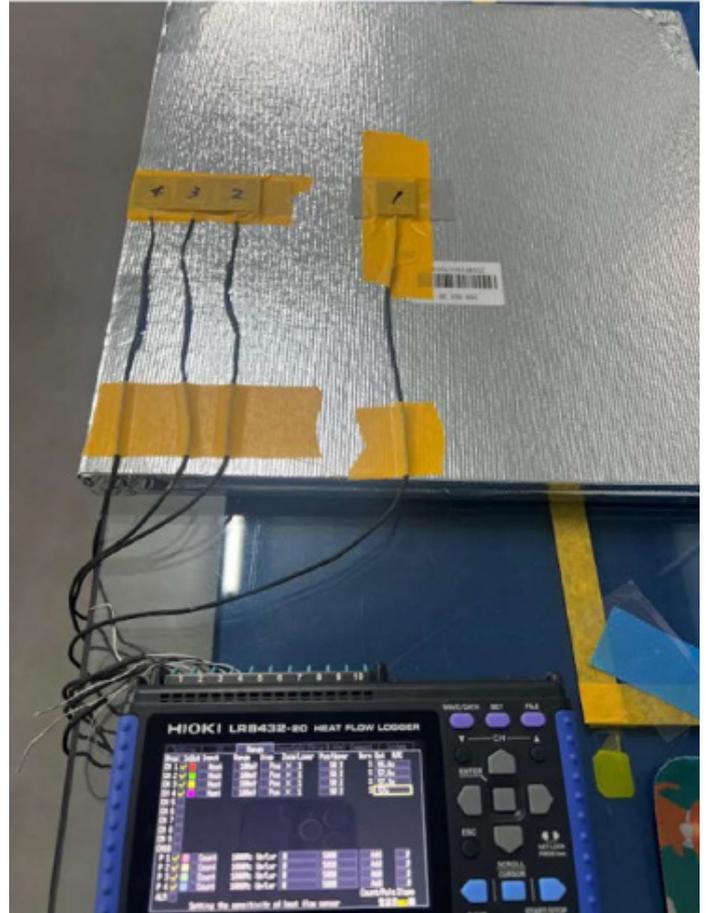
Ecotherm implemented EKO heat flux sensors HF-01S to evaluate heat transfer dynamics across their laminate materials. The methodology for this evaluation was based on research presented in EKO's paper at the Architectural Institute of Japan (AIJ) 2025 Conference.

By applying these specialized sensors, Ecotherm conducted rigorous experiments to determine the viability of a numerical approach to thermal bridge assessment.

### The Results & Future Outlook

The study successfully confirmed the feasibility of numerically evaluating thermal bridges in VIP laminate structures. Following these positive results, Ecotherm plans to:

- Continue the acquisition of empirical data to refine their modeling
- Leverage these insights to drive the development of next-generation, high-quality VIPs



### About Nantong Ecotherm Insulations

Founded in 2018, Nantong Ecotherm Insulations Co., Ltd. is a leading Chinese manufacturer specializing in the research, development, and production of nanoporous insulation materials. Their core expertise includes:

- High-temperature nano insulation boards
- Silica core materials
- Vacuum Insulation Panels
- Insulation box, container

As a certified high-tech enterprise, Ecotherm is recognized as a professional innovation leader and a science and technology-based SME within the Jiangsu Province.



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