



Case Study: GORE® Thermal Insulation for Foldable Smartphone

Conquering Thermal Challenges in a Foldable Smartphone



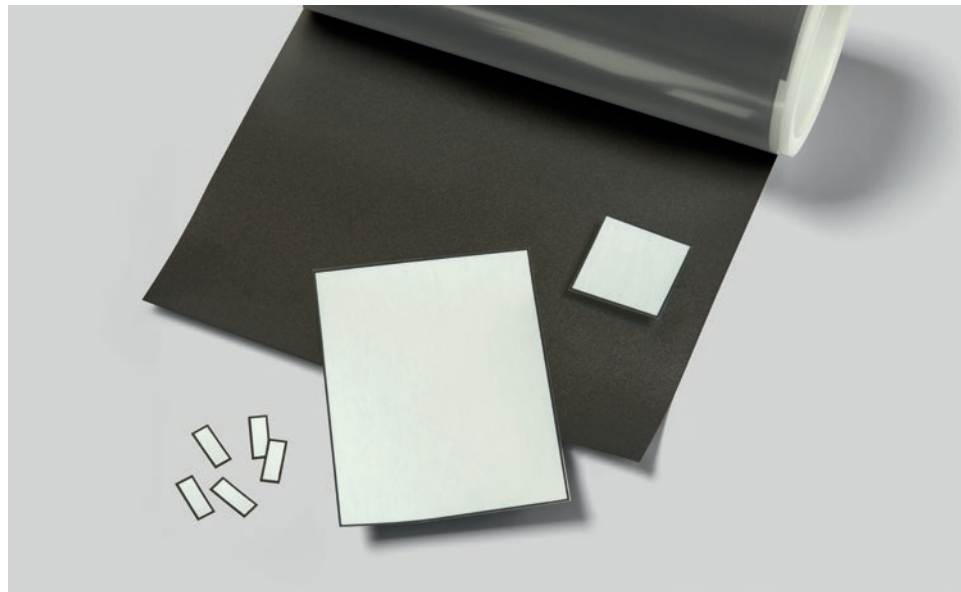
? CHALLENGE

When developing their foldable smartphone, a leading manufacturer aimed for a large screen while **maintaining a slim profile**. However, this design significantly impacted the thermal management within the device. To **ensure the device's optimal performance** and market position, our customer sought to find a suitable solution as quickly as possible. Fortunately, Gore knew exactly how to help.

"Developing a thinner device also means reducing the space available to dissipate heat. Such circumstances make it nearly impossible to properly handle the heat without integrating additional technology for thermal management."



Yan YU Heo, Market Development



GORE® Thermal Insulation for Mobile Devices



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SOLUTION

As the phone's foldability made the space for thermal insulation even smaller within its already slim form, our engineers proposed GORE® Thermal Insulation: A product that enables low thermal conductivity in a thin form. While our solution has never been used by the manufacturer before, a **series of tests conducted on their previous flagship smartphones** demonstrated impressive results and convinced our customer. Yet, the product's performance was not the only factor we considered.

To provide a fit-for-use solution, we needed to tailor some form factors to the manufacturer's needs. Such significant changes to the product's design can take up to 12 weeks to develop. Thanks to **high efforts among our team**, we could do it in three. Furthermore, our engineers also collaborated closely with the contract manufacturers of our customer's supply chain and provided **extensive local support**. As they are the ones to process our solution, it was crucial to brief them on how to handle GORE® Thermal Insulation in the production line.

THE TECHNOLOGY BEHIND THE SOLUTION: GORE® THERMAL INSULATION

To achieve optimum heat management within the device's slim design, our engineers chose GORE® Thermal Insulation. For specifications and more detailed installation information, please visit gore.com/thermal.

"To answer all the contract manufacturers' questions, I visited each of them and thoroughly introduced our solution to their engineers. That way, they were ready to go when mass production began."



SY Kwak, Application Engineer



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★ RESULTS

The outstanding performance of GORE® Thermal Insulation and the unparalleled pace in the development process exceeded our customer's expectations. Here are the key accomplishments of the project:

- A reduction in the device's surface hotspot temperature by 0.5 °C
- Our customer was able to start mass production on time
- A strengthened relationship with our customer, paving the way for further application of GORE® Thermal Insulation in foldable smartphones and other flagship models

"This collaboration led to a better understanding of each other's capabilities. It opened the door for further projects: Now, our customer automatically considers Gore solutions for their developments."



Yan YU Heo, Market Development

WANT TO KNOW MORE?

To learn more about GORE® Thermal Insulation, visit our website: gore.com/thermal

Or check out more of our case studies: gore.com/mestories



Why Choose GORE® Protective Vents for Your Electronic Devices?

Leading OEMs have specified over 5 billion GORE® Portable Electronic Vents because they know our products and services can help accelerate their development of innovative and differentiated devices in fast-paced, highly competitive markets.

PRODUCT AND APPLICATION LEADERSHIP

Grounded in a deep understanding of material science and acoustics, Gore can provide the optimum venting solution. We balance trade-offs between diverse problems such as adverse operating environments, immersion events and acoustic performance.

RELIABLE PERFORMANCE

To ensure products are “fit for use”, every Gore product must adhere to the highest standards of quality, performance and reliability. Through a comprehensive understanding of end-use applications and requirements, our products do what they say they will do.

FAST DEVELOPMENT

The mobile electronics industry develops and releases new products quickly. Our fast response to customer requests during the development process sets us apart. Gore supports this need for quickness with designs and prototypes to ensure engineering teams can meet their project timelines and their application requirements.

SUPPLY SECURITY

Leading OEMs specify Gore because we have consistently proven our ability to quickly ramp up to supply vents for projects of over 10 million devices per year and to continue to supply high quality products on-time without disruption.

MATERIAL SCIENCE

Gore is a global materials science company dedicated to transforming industries and improving lives. Gore develops materials with microporous structures that provide desirable attributes and performance characteristics to engineer vents and other products used in a variety of markets and industries.

GLOBAL SUPPORT

Our global teams of sales associates, application engineers, manufacturing engineers, and research personnel enable us to provide agile and robust support to customers around the world.

Interested in Testing Our Products or Talking to Our Experts?

For additional assistance, please contact a Gore representative.

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