

OrthoLite's Lightweight Aerogel Insoles Protect Against Cold

By *Chuck Dobrosielski*



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OrthoLite's latest thermal [insole](#) technology attempts to tackle the perennial problem of cold feet.

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Unveiled Thursday, OrthoLite O-Therm uses an aerogel-infused, open-cell polyurethane foam to create a thermal barrier that the insole maker says "is unrivaled in any other footwear offering."

"OrthoLite's proprietary aerogel is O-Therm's secret sauce," Rob Falken, vice president of innovation at OrthoLite, said in a statement. "Our advanced aerogel traps micro-pockets of air without the need for loft, and it won't lose its effectiveness when compressed under foot."



By placing nano-porous aerogel inside a multiporous solution, the O-Therm insole acts as a "supreme" thermal barrier that can block both cold and heat, Falken said. "Exceptionally hydrophobic," the aerogel additionally [repels water](#) and moves moisture away from the foot to provide a drier, more comfortable shoe environment, OrthoLite said.

The company also touted the insole's light weight. According to Falken, the silica aerogel powder used in the O-Therm is just three times the weight of air.

The insole company worked with third-party thermal test laboratory Vartest Laboratories to quantify the thermal performance of O-Therm aerogel [insoles](#) under extreme cold conditions. According to OrthoLite, the third-party test results showed the O-Therm to be 54 percent more effective on average in comparative testing to other thermal insoles when tested at minus 108 degrees.

O-Therm consists of a 2 mm base-layer thermal foam that can be combined with a wide range of OrthoLite top-layer foams to create custom insole solutions. These can be tailored to a broad range of footwear categories, including outdoor, casual, ski and snowboard, work and fashion, OrthoLite said.

"We are proud to introduce this new thermal innovation to the footwear industry," John Barrett, president of OrthoLite, said in a statement. "We see tremendous potential in the market—in cold weather footwear applications and beyond."

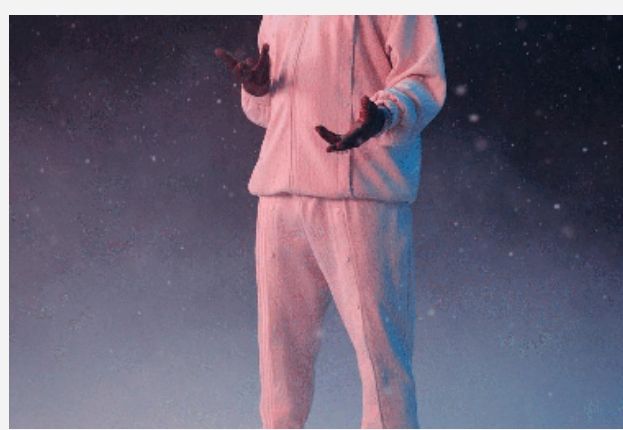
OrthoLite supplies open-cell foam technology for more than 500 million shoes each year, including those from brands like Adidas, Asics, Bata, Clarks, Cole Haan, Converse, Danner, Ecco, Everlane Jordan, Kenneth Cole, Lacoste, New Balance, Nike, Reebok, Rothys, Sanuk, Timberland, Toms, Wolverine and Vans.

Elsewhere in the fight against frigid feet, [Ororo Heated Apparel](#) launched its second heated sock on Kickstarter last November. By the time the campaign ended in December, the heated apparel purveyor had raised more than \$150,000. Instead of blocking out the cold like OrthoLite's O-Therm insoles, the "Redwood" Carbon Nanotube Heated Sock uses small, chargeable batteries to power carbon nanotube elements, thereby directly heating the foot.

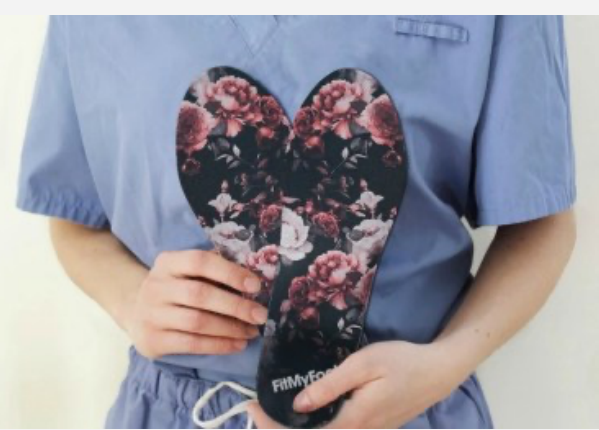
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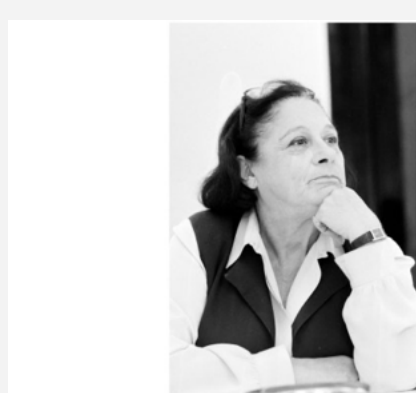
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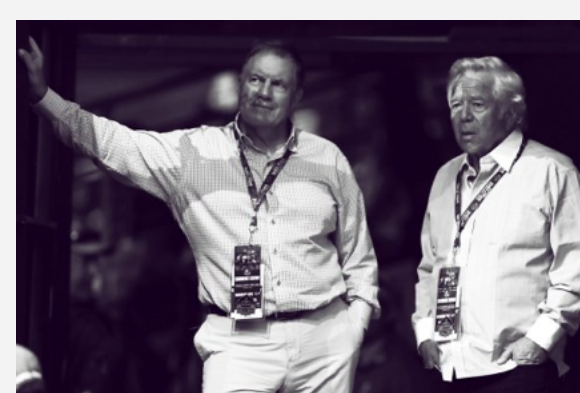
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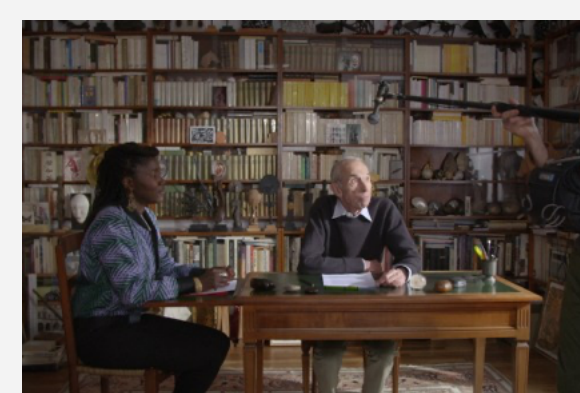
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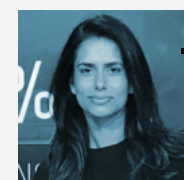
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