



INSULON® THERMAL BARRIER FROM CONCEPT GROUP BLOCKS HEAT WITH HYPER-DEEP VACUUM™

*New Insulon Shaped-Vacuum Technology Allows
Incredibly Thin Thermal Insulation Designs - in Almost Any Shape.*

December 15, 2011 West Berlin, NJ Ask any thermal engineer and you'll get the same answer: "When it comes to insulation, thinner is better." But they'll also tell you thin isn't enough. It has to insulate. That's why engineers are particularly interested in the novel Insulon® thermal barrier. It is amazingly thin, yet provides a better barrier to thermal energy than conventional insulators.

Concept Group recently introduced the Insulon shaped-vacuum technology. The Insulon barrier is a new kind of small-scale thermal insulator. It uses an extremely deep, shaped vacuum to block the conductive transfer of thermal energy.

The result? An Insulon shaped-vacuum barrier allows 60 times less thermal conduction than nylon insulation. 8 times less than polyethylene foam. In fact, it allows 5 times less thermal conduction than even a completely empty air gap. Insulon barriers have already been designed and manufactured down to the width of a human hair – with no loss of their extraordinary insulating power. And even thinner applications are possible.

Amazingly, the vacuum inside an Insulon barrier is actually deeper than that of the vacuum furnace in which it is manufactured. According to Arne Reid, President and CEO of Concept Group, the barrier's internal design is somewhat like the surface geometry of a stealth aircraft, which causes radar pulses to bounce off the aircraft at a high angle rather than returning to the adversary's radar receiver. "In a similar way," said Reid, "an Insulon barrier's internal shape causes molecules still present during vacuum heating to tend to bounce out of the barrier, and the barrier's external shape makes re-entry unlikely." According to Reid, this geometry produces a Hyper-Deep Vacuum™ inside the barrier, even deeper than that of the vacuum-furnace chamber in which it is manufactured.

"The Insulon barrier is a tremendous insulator," said Reid. "When conductive heat hits the vacuum, it stops. There are simply no molecules to carry the energy forward."

Concept Group, Inc. (800-424-7325) is an AS9100C-certified developer and manufacturer of advanced technology hermetic seals, vacuum-insulated products, and numerous other precision assemblies. Its products can be found in the skies on commercial and military aircraft, in spacecraft circling the globe, in the human body during cryoablation surgery, and even deep underground in oil/gas exploration.