



[Insulating ceramic paint distributor falls for his own grifter tale](#)

Edited By [Peter Wray](#) • July 28, 2011



Mechanical engineer Curt Freedman modified a foam drink cooler to make a courtroom apparatus to demonstrate heat flow and measure the extent to which ceramic-containing “insulating paint” provided the R-values advertised. It didn’t. Credit: Curt Freedman.

Shortly after I joined the ACerS staff (early 2008), I received a call from a reporter investigating the purported benefits of a type of paint that was being touted as having a high R-value because its maker had added “insulating” ceramic particles. The reporter’s too-good-to-be true antennae had him on alert that something was fishy and that the distributor of the high-priced product had been playing something of a Three-card Monte game on him, swapping terms like insulation, reflectivity and emissivity as if they were peas under walnut shells.

The reporter sent me a copy of the distributor’s promo piece and the URL of the company’s website. Eventually, I was able to provide a brief explanation of the three terms and why the paint’s claims were outlandish and bogus.

But, I still get inquiries about “insulating” paint several times a year, usually from people connected with architecture, wondering what the official verdict is regarding the insulative value of ceramic-containing paint. So, I know the hucksters are out there still looking for suckers.

Thus, I was filled with glee when a family member forwarded me [this story](#) by Martin Holladay about how a distributor of [SUPERTHERM](#), Alton King, was hoisted on his own petard: King directed workers to apply SUPERTHERM paint to multiple surfaces: the underside of the roof sheathing, the roof rafters, the exposed ceiling joists in the attic, and both sides of the ceiling drywall facing the attic. The worthless paint was also applied to the interior side of the wall sheathing and the exterior side of the Sheetrock on the walls. King

claimed that the SUPERTHERM paint would provide an overall insulating value of more than R-19 for the walls and more than R-38 for the ceilings. Since the stud bays and joist cavities of King's home were empty, however, the actual R-value of his wall assembly was about R-2.9, while his ceilings had an R-value of only R-1.7.

... Soon after his new home was completed in June 2004, King moved in. Almost immediately, King began complaining of comfort problems. The temperature in the second-floor room was often above 90°F, even though the air-conditioner was running full tilt.

During the winter, the situation worsened. According to Associate Justice Robert Fields, who adjudicated the resulting lawsuit, "Believing the HVAC system responsible for the temperature problems, King contacted Dee. ... After a multitude of complaints and repair requests, ... Dee determined that the temperature problems in the home were not related to the HVAC system. Rather, Tetro informed King that the temperature problems were caused by inadequate insulation."

At that point King contacted Curt Freedman, a mechanical engineer, and asked him to figure out why his house was so hard to heat and cool. Freedman later wrote, "During one of my site visits, with outside temperatures of 28°F, temperatures in the home were noted only to be in the 48°F to 60°F range."

... With his heating and cooling problems still unresolved, King decided to build an addition to his new home, increasing the size of his home from 7,291 square feet to 9,563 square feet.

This time, the town building department insisted that the walls and ceiling of the new addition had to include insulation. King complied, although he didn't install any insulation in the older part of the house.

King decided to solve his comfort problem by installing a bigger boiler. "He installed a new 400,000 Btuh boiler, at a cost of over \$100,000, even though he had previously submitted that the design heat load was 50,000 Btuh," said Freedman. "The cost of the new HVAC system was much more than it would have cost to insulate the house."

A disinterested observer might imagine that it was time for King to sue the manufacturer of SUPERTHERM for false claims. But King had a different idea: he sued the HVAC contractor ... King's lawsuit was heard by Associate Justice Robert Fields, presiding without a jury. Freedman ended up testifying for the defendant - that is, the HVAC contractor. To demonstrate that SUPERTHERM is ineffective at slowing heat flow, Freedman brought a modified beer cooler to court. The cooler included a 50-watt heater and a computer fan to maintain an evenly distributed temperature. "He had cut out a window in the foam box," Harley recalled. "He had plugged the window with a film of dried paint. He peeled the dried paint off a paint roller tray. He didn't try to make a quantitative measurement of the R-value of the paint. He just pointed an infrared scanner at the box and showed the difference in temperature between the outside of the insulated box and the window covered with dried paint film. It wasn't an ASTM test, but the demonstration was valuable."

Freedman helped convince the court that the HVAC contractor was not at fault. On June 8, 2011, the judge ruled in favor of the HVAC contractor. "Based on the evidence presented, I find it entirely plausible that had King's house been insulated with traditional material, that a significant portion of the heat generated by the boiler and the cold air generated by the air conditioner would have remained in the home," Justice Fields ruled. "Based on the foregoing, judgment shall enter in favor of the defendant, Dee Services, Inc."

As straightforward as all of this might seem from a science and engineering point a view, Freedman told me that his testimony took over eight hours. (Also, Freedman laughed when he mentioned that because his apparatus, pictured above, could appear to be "alarmingly dangerous" to courthouse security officials, he had to give plenty of advanced warning to court staff and his personal assurance to the judge.)

I highly recommend reading Holladay's whole story. As he notes, there is some poetic justice here. But this story makes me wonder, if this guy could afford to build a 9,500-square-foot home, it suggests that he was quite good at spinning his tales and finding gullible buyers for the \$200-per-gallon paint.

With all the great things happening in ceramics and glass, it's unfortunate to have our field be stained by apparent hucksters, such as King and SUPERTHERM.