

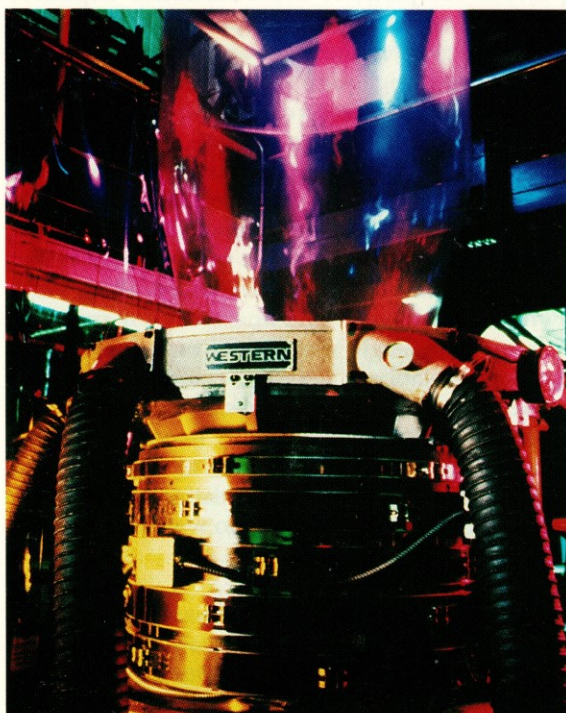
Insulation Means Improved Air Ring Efficiency

Egan Davis-Standard supplies blown film systems, and Poly America blows film; both find improved quality with Pyropel insulation from Albany International High Performance Materials.

Egan Davis-Standard boasts one of the larger installed bases of blown film extrusion equipment in the world. The company offers everything from extruders, spiral mandrel dies, and simple monolayer low-density polypropylene machines to sophisticated high-speed LLDPE stretch wrap, multilayer barrier packaging, and polyvinylidene chloride (PVDC) film lines.

In spite of all this expertise in blown film ex-

Pyropel insulation increases the cooling efficiency of the air ring, reports Egan Davis-Standard. It also improves bubble stability by reducing the buffeting effect that occurs when plant air is drawn in through the gap between the die and the air ring.



trusion, until not too long ago there existed one small, nagging problem: The company had been using a white mineral hardboard insulation on its high-performance WesJet air rings. Because of the difficulty in machining it, the insulation was purchased precut to size and shape. Extremely brittle, the insulation cracked and fell apart easily, in many cases during shipping. This was the experience of Richard King, tooling engineer for Texas blown film producer Poly America.

“Most of the time, the customer would simply remove the damaged insulation, throw it away, and never bother to replace it,” says Duncan Heyes, Egan Davis-Standard senior design engineer.

Not replacing the cracked insulation is a major mistake because it’s there to seal the critical gap between the die and the air ring, prevent heat transfer, and improve both cooling performance and bubble stability, Heyes explains. “Without some form of insulation to seal it, the gap between the die and the air ring draws in the plant air. This not only reduces the bubble cooling efficiency of the air ring, it also causes a buffeting effect that reduces bubble stability.”

The Customer is Right

It was Poly America, a Grand Prairie, TX, customer of Egan Davis-Standard, that recommended Egan begin using Pyropel®, supplied by Albany International High Performance Materials.

Poly America had just taken delivery of an air ring with the typical cracked insulation. “They suggested we stop using that brittle type of insulation and start using Pyropel,” says Heyes. “We took his advice and tried it. We’ve been using it ever since.”

Pyropel insulation, says Heyes, is a light-weight polyimide fiberboard with superior insulating properties across a broad temperature range. He adds that it was developed by Albany to provide superior insulating capability, rigidity, durability, chemical resistance, and ease of use. According to Heyes, Pyropel was engineered as a high-performance alternative to conventional mineral board and batt insulation for applications such as plastics and rubber processing, heat treating, food processing, metals production, cryogenics, and OEM products. He adds that it is self-supporting, dimensionally stable, tough, and durable, yet it is easy to cut, machine, and fabricate.

Pyropel has turned out to be just the thing Egan Davis-Standard engineers were looking for. Heyes says that this unique insulation has the dimensional stability to withstand the compression of the air ring, yet enough resiliency to very effectively seal the gap between the ring and the die. "We can tighten down the air rings on the Pyropel to get a positive seal. We don't have to worry about it cracking or breaking."

Egan Davis-Standard buys Pyropel in 4x8-ft sheets and cuts as many insulators as possible out of each sheet. Rick Keller, industry director of film systems for Egan Davis-Standard, comments, "It's very easy to work with. We cut it with a band saw or hand-held saber saw. It cuts like Balsa wood."

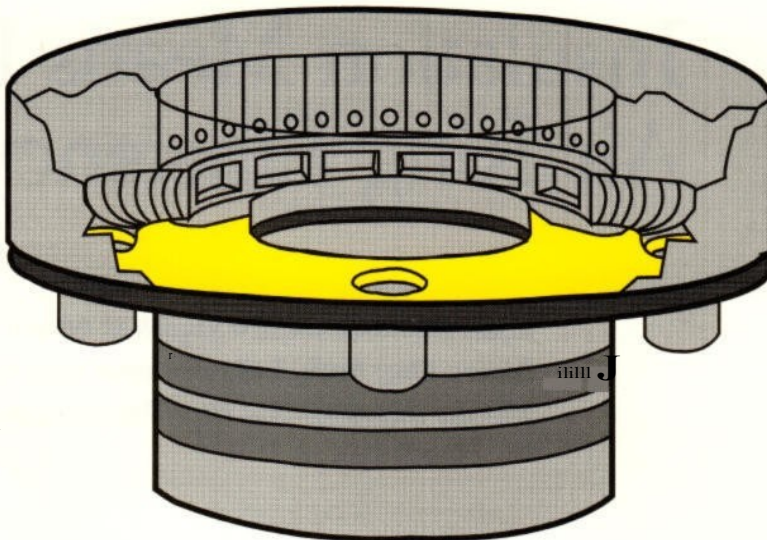
The Converter's Story

Poly America, the converter that introduced Egan-Davis Standard to Pyropel, blows film to make heavy-duty industrial trash can liners and trash bags. Since Poly America first suggested Egan Davis-Standard incorporate the insulation into the converting equipment it sells, the converter has found many other uses for it.

"Poly America uses Pyropel anyplace we're trying to insulate heat, and heat is inherent to the blown film process," says Richard King. Pyropel is available in a range of different densities, from a fluff-like, 6-lb material to a noncompressible, solid polyimide, 85-lb sheet. Poly America uses a version that's right in the middle of the product line, called MD30.

Explains King, "We use MD30 to insulate the die from the die cart it rests on. We actually set the weight of the die right on top of the insulating material, and the insulation does not deform.

"We also use Pyropel to insulate the internal bubble cooling units on our blown film lines. These aluminum cooling units are located inside the die and are constantly exposed to 300-



Egan Davis-Standard uses Pyropel rigid polyimide insulation to seal the gap between the die and the air ring on all its WesJet air rings.

400-degree temperatures. The aluminum cooling units behave like a heat sink, absorbing heat and in turn heating the cooling air rushing through, in effect defeating its purpose. By using Pyropel we insulate the cooling units from the hot air, making them much more effective at cooling the bubble."

Worth the Expense

Egan's Duncan Heyes acknowledges that Pyropel is more expensive than the insulation it replaced. He justifies the additional expense, however, on the basis of improved product performance and reduced warranty costs.

"These are high-performance components and systems we manufacture, ranging in price from \$100,000 to more than \$1,000,000. Our customers expect them to perform consistently and reliably at very high production rates. It does not make sense for us to save a few dollars on insulation if it adversely affects the performance of our products. In the three years we've been using Pyropel, we haven't had one order for spare insulators or a single service call or complaint related to insulation."

Heyes sums up, "The decision to use Pyropel was really a 'no-brainer.' We need to insulate our air rings, but we don't want to spend a lot of time worrying about the insulation itself. Pyropel works great. No hassles, no worries." C

Supplier Information:

Pyropel Inc.
20 Howard Ave.
New Bedford, Massachusetts 02745
ph. 508-273-2628; www.pyropel.com