



# What will you make today?

## Corporate Case Study



### Filtering out the hard parts

A case study glimpse that exemplifies and underscores the Pexco proposition to customers

#### Challenge:

A leading OEM for industrial filtration systems wanted to develop a new filtration cartridge using an unfamiliar, advanced engineering material.

#### Solution:

Leverage an existing die to work with a custom application and untested material choice that saved the customer time and money.

#### Innovative Thinking:

For over 40 years, Pexco has supplied one of the world's largest membrane system providers with filtration cartridges. Back in 1971, Pexco was asked by the customer to create a 3" diameter extruded filter housing with a matching injection molded end cap that required extremely tight tolerances for solvent welding. The entire procedure was to be run with the unfamiliar material, polysulfone. The material polysulfone describes a family of thermoplastic polymers that are known for their toughness and stability at high temperatures.

Back then, the Plaistow, NH facility within Pexco worked mostly with commodity resins, not advanced materials like polysulfone. In efforts to launch the program, President, Dave Hallett reached out to the local manufacturing community to learn more about this complex material. Dave learned that filter cartridges made from polysulfone membranes offer extremely high flow rates at very low differential pressures when compared with nylon or polypropylene. Additionally, filter cartridges made from polysulfone can be sterilized with in-line steam or in the autoclave without loss of integrity. The drawbacks for this material are the cost and the difficulties that come with processing this material which include high temperatures, long cooling times and slow runs.

Eventually, as a result of several meetings and trials with polysulfone, Dave was able to accept the project with confidence. The customer of Pexco's was soon impressed by the knowledge and advice that Dave was able to suggest. At that time, Pexco was running a PVC extruded filter housing with a similar diameter for a different application which also had a matching end cap. This seemed like the perfect opportunity to save the customer money – by suggesting running a trial with the existing tooling using polysulfone for both the extruded housing and injection molded end cap.



Pexco's success in the custom extrusion of top quality, high performance, low stress polysulfone tubing exemplifies confidence in our ability to meet and exceed even the toughest project requirements.



Over the years, Pexco has invested in secondary services such as hole drilling, facing, notching and punching to enhance the form, fit and functionality of the polysulfone end product.



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The trial was successful and ended up saving the customer over \$20,000 in the new tooling investment alone. Since Pexco was able to leverage the existing tooling, the lead time on the parts was only 3 weeks compared to the initial 12 weeks that new tooling would have then required.

Stories like this one demonstrate Pexco's reputation as a trusted plastics advisor and manufacturer. Dave Hallett's creative approach and core, fundamental knowledge are emblematic of the entire company's methodology in plastic processing manufacturing. Pexco is a business that prides itself on decades of integration of small, hands-on plastic manufacturing companies with specific core capabilities. These companies all bring institutional knowledge and when combined have uniquely transformed Pexco into the solutions provider and trusted specialty plastics resource it is today.

Today, Pexco runs over 100 different tools using polysulfone and has become one of the industry-leading material experts of polysulfone within the Filtration market.

### Key Takeaways:

- Engineering expertise
- Unique material choice
- Tight tolerances

## About Pexco:

Based in Atlanta, Georgia with several manufacturing plants across the United States and Mexico, Pexco is a North American leader in the design and fabrication of specialty plastics products. It provides standard and custom products and components to manufacturers and end-users for a broad range of market applications, including the Aerospace, Medical, Filtration, Lighting, and other Industrial sectors. Pexco offers a full range of design, engineering and fabrication services. It operates six Class 7 & Class 8 medical clean rooms. Pexco meets the requirements of ISO 9001:2008, and holds ISO 14001, ISO 13485, 21 CFR 820, OHSAS 18001, GMP, AS9100C, ITAR and other registrations and/or certifications for its manufacturing operations. Pexco is your trusted plastics advisor for specialty plastic products and solutions. For more information, visit [www.pexco.com](http://www.pexco.com) or contact 404-564-8560.