

# Business Magazine

The Right Mix

 **Corry Rubber Corporation**

Ernie B. Ferro  
President

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Vice President Jeff Ferro, CEO Ernie D. Ferro and President Ernie B. Ferro oversee the production of the multimillion-dollar Corry, Pa.-based corporation.



## Rubber manufacturer modernizes the way it mixes, molds and extrudes elastomer and elastomer composite solutions

**U**nder the hood of your car.  
In your doctor's office.

At the nearest high-rise.

Or football stadium.

Maybe at your house or your neighbor's next door.

Chances are you've come across a rubber component made by Corry Rubber Corporation.

From automotive body mounts to blood pressure cuff tubing to the lining used for water expansion tanks in high-rises and stadiums, the Corry, Pa.-based company

has stretched its product line over its 43-year history. Its 142,000-square-foot facility at 601 W. Main St. mixes, molds and extrudes the rubber components supplied to the automotive, aerospace, medical and plumbing industries.

"We're like a miniature Goodyear here," quips founder and CEO Ernie D. Ferro. "Except we don't make tires."

The family-run business begun in 1961 is, today, a privately held multimillion-dollar corporation producing millions of units of product per month. To maintain this high-volume production, the company employs 45 workers and operates three shifts, five or six days a week, year-round.

The operation is considerable and poised for growth given the big picture of the rubber industry. Statistics by the International Rubber Study Group show world rubber consumption in 2004 was about 20 million tons, and it's expected to rise.

Corry Rubber's management team led by the Ferro family — including Ferro's sons President Ernie B. Ferro and Vice President Jeff Ferro — says its one-stop shop is the key to its success. The company mixes its own compounds onsite, which gives it a competitive edge in pricing and also allows it to meet customer schedule and material changes more quickly.

"We think that's advantageous to our customers because we've got lower

costs and overhead than somebody who doesn't mix onsite. So, we can provide monetary savings for them," explains Ernie B. "Also, it gives us the ability to react to changing customer needs on a more timely basis."

The state-of-the-art, onsite lab, testing and development facility features Auto-Cad Mechanical Desktop and Pro Engineer for mold and part design. In addition, the company utilizes a software package to model the injection molding of rubber.

Engineers use these tools to model both the manufacturing process and finished parts via computer, thus creating designs for customers before any production begins. Customers don't need to spend money on molds and tooling until the engineers are sure the product they've created has a good chance of exceeding customer expectations.

At the same time, modeling the molding process allows the company to minimize waste and cycle time providing customers with a price advantage. Failure Mode and Effect Analysis (FMEA) enables the company to evaluate the likelihood of a problem in the manufacturing process causing a bad product to be made and limits the chance for a defective product to be shipped. In effect, customers don't have to worry about getting defective products and their costs go down.

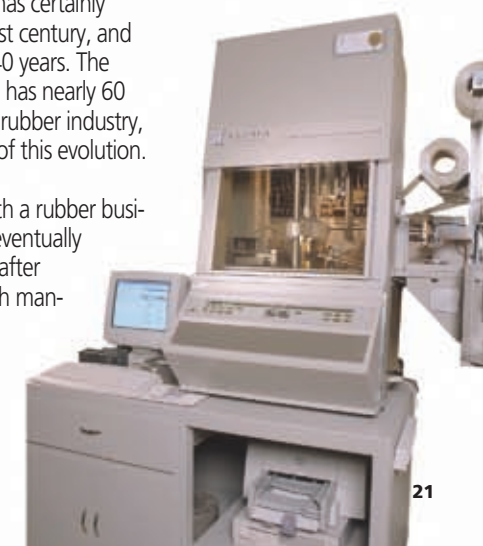
According to the company, a machine called a rheometer coupled with a Hertzler Systems' Gainseeker SPC software program is the first step to making sure batches have been compounded and mixed correctly. Lab technicians compare data from the rheometer and software to a "fingerprint" for each batch, which can tell the engineers whether it is a good mix or not. Identifying problems early, the Fer-

ros say, is critical in rubber manufacturing, where the plant can mix between 8,000 and 12,000 pounds of rubber on a given day, or nearly 250,000 pounds per month.

**R**ubber manufacturing has certainly come a long way in the last century, and for the Ferros, in the last 40 years. The semi-retired Ernie D., who has nearly 60 years of experience in the rubber industry, has been an integral part of this evolution.

The elder Ferro started with a rubber business in Girard, Ohio, but eventually worked his way to Corry, after striking up discussions with manufacturers' representative Albert Xander. The two met with the Corry Area Industrial Development Corporation and soon

*A Rubber Processibility Analyzer tests developmental compounds for the aerospace, automotive, medical and plumbing industries.*



acquired the weed and seed money needed to get the plant up and running.

By August 1961, Corry Rubber began operation in the 2,800-square-foot former Aero Supply Co. building across the street from its current facility on West Main. Fifteen years later, the company needed more space and purchased a 42,000-square-foot facility, which still houses the mixing operation. It wasn't until 1982 that a third, 100,000-square-foot building was acquired.

By 1982, the Ferros took complete control of the company. Modernization was

ing there is only so much money you can take out of a product."

**S**o how does Corry Rubber actually turn the natural rubber shipped from Indonesia, or other synthetic, manmade rubbers into usable parts found in cars, coffee containers and even hospitals?

Mixing the chemicals would seem to be a difficult process to explain, but Ernie B. quickly compares it to "baking a cake." The process initially begins with the ingredients being weighed and measured, transported on roller conveyors and up an

Corry Rubber can make products from the mixed rubber by either molding or extrusion. In the molding process, rubber is forced into the cavities in a mold that can be in an injection, compression or transfer press and formed into the desired configuration under heat and pressure. In extrusion, material is forced through a die to make items like tubing and hose.

Because rubber never 'freezes' like plastic does when it is molded, it's extremely difficult to manufacture flash free molded rubber products. As a result, most of the molded products at Corry Rubber are cryogenically deflashed using liquid nitrogen.

or stadium water distribution systems and expansion tanks for heating systems. The bladders vary in size from 15 liters up to an astonishing 10,000 liters.

**S**tate-of-the-art testing and manufacturing equipment ensures the products are up to quality standards. Machines network to a supervisory computer where they can be monitored and changes made, while data from all the injection presses are stored in a database for about three years. "Every shot of parts that we make has up to 70 different parameters stored in our database," adds Ernie B. "If

is the latest automotive quality standard mandated by the Big Three. "TS-16949 is like ISO-9000 on steroids" says Ernie B. The standard focuses on processes rather than procedures to try to minimize defective product. Receipt of that certification is a considerable feat for the company, which in 1987 was honored with a Q1 award from Ford.

Jeff Ferro, who runs the operations and maintenance of the facility, says the plant ensures its employees undergo certification and safety training. The factory has a safety committee, which meets monthly, to discuss and review any accidents, and

**"We have our engineers today working on products for the future ... products that will help people solve problems."**

— Ernie B. Ferro

"This is a very exciting time."

Innovation, the Ferros say, is an integral part in the rubber industry and manufacturing as a whole. Most importantly, Ernie B. says, "You need to take care of your customers and try to find niche markets where you can thrive and prosper."

Of course, Corry Rubber has all the ingredients for success.

They've found the right mix. ★

For more information on Corry Rubber Corporation, see the company's Web site at [www.corryrubber.com](http://www.corryrubber.com)



**(Left to right) Raw rubber is mixed with various dry ingredients before being dropped down a shoot to the two-roll mill that sheets the rubber off into a desired width and thickness. It is then processed on specialized equipment and undergoes either molding or extrusion. Well-trained employees and a state-of-the-art testing facility ensure the products exceed customer expectations.**

instrumental in the decision and, Ernie D. says, in moving the operation forward. "We had to," he says. "It was the only way."

Since that time, the company, which recently acquired a portion of Baltimore-based Skully Rubber, has focused its attention on keeping up with technology and state-of-the-art production equipment — turning to injection

molding, testing and prototyping to keep it ahead of the competition.

And the payoff has been tremendous. "We took our direct labor content from about 18 or 19 percent of every sales dollar to between 11 and 12 percent with our modernization program," says Ernie B.

The modernization process has also helped the company save on material — a critical component for automotive parts suppliers who are forced to absorb rising material costs instead of passing them on to Tier 1 or Tier 2 customers. Adds Ernie B., "We're pretty darn efficient, consider-

ing there is only so much money you can take out of a product."

elevator where they are then mixed in a machine known as a Banbury or "mixer on its side." The raw rubber is mixed with various dry ingredients such as carbon black, zinc oxide, sulfur, accelerators and antioxidants before being dropped down a shoot to the two-roll mill that sheets the rubber off into a width and thickness that's needed in the subsequent process.

Next, the product is moved to a holding area for testing. There it is either tagged red (bad) and quarantined so it's not used or tagged green (good) for use. The green tagged material is transported to its manufacturing facility.

The magic of the manufacturing process begins after the material is transported via truck to the plant down the street to be processed on specialized equipment, which forces it into the desired shape and subjects it to heat and pressure. Vulcanization converts the gummy rubber compound into elastomeric products such as noise and vibration isolators, truck stabilizer bar insulators and washers used by its well-known clients General Motors and Ford, piping giant Dresser and water expansion system maker Taco Inc.

**O**ne of the company's more interesting projects is to make the rubber isolators that are bolted to the bottom of the skids in which U.S. missiles are shipped. "It's really amazing, the testing that they do with these things," Ernie B. explains. "We've got a video of them raising this missile skid about 30 feet in the air and dropping it on these things and the missiles are fine. The rubber, the isolator isn't even fazed. It was in perfect shape after the test and ready to go another round."

Corry Rubber also has made a name for itself in the medical industry, manufacturing endoscopic sheaths as well the gray tubing used in blood pressure cuffs. As Ernie B. notes, the process for the blood pressure cuff tubing starts with 9-foot-long sections of rubber. The rubber is loaded on 3/4-inch diameter poles and cured in an autoclave, then cut to the number of coils to yield — 5 or 8 feet, depending on customer specifications.

Custom cut parts for the plumbing industry are yet another major piece of the business. Corry Rubber makes the rubber bladder used in the large steel tanks, commonly called accumulators, for high-rise

there is a problem, we can go back to the database and see if something changed."

In a rubber plant, material cannot be recycled and that means mistakes can be very expensive. Corry Rubber has been able to reduce its amount of scrap to less than 0.75 percent.

Corry Rubber tries to build quality into their products at the design stage using its testing and prototyping facility, which is where the initial runs of products are tested and produced. "This gives us an opportunity to see where problems are and fix them before we've got a million part order that's behind schedule," says Jeff Ferro.

But their quality assurance efforts do not stop at prototyping and development. The adoption of SPC and SQC as standard operating procedures and ISO 9002 and QS 9000 certifications also are significant part of their quality control.

In December 2004, Ernie B. says the company was surveyed and recommended for automotive standard TS-16949 and should receive its certification shortly. This

provide training in fire safety, lifting and repetitive motion issues.

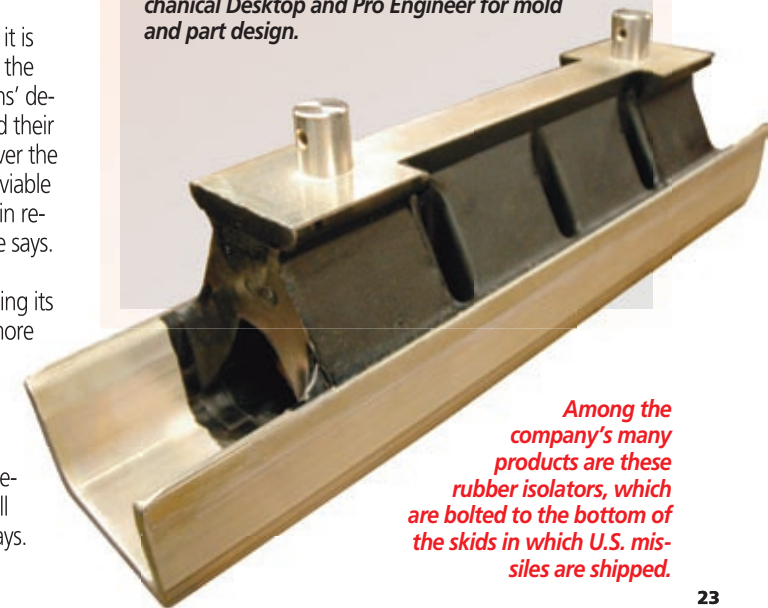
Training, the Ferros say, is essential to maintaining a loyal and reliable work force, where most of the workers have been with the business for 14 years or more. Ernie D. says the secret to their success and retention is simple: "We treat people how we would like to be treated."

**A**t the end of the day, however, it is family pride that is most evident at the company. Ernie D. points to his sons' decision to take over the business and their vision for the future. "They took over the reins, and have kept the company viable along with changing the direction in regard to what we're producing," he says.

Ernie B. notes the company is utilizing its lab and testing facility to provide more value-added services to its clients, and more highly engineered products. "We have our engineers today working on products for the future, types of products that go beyond automotive. Products that will help people solve problems," he says.

## Fast Facts

- **Founded in 1961, the Corry, Pa.-based company is now a multimillion-dollar corporation.**
- **The plant can mix between 8,000 and 12,000 pounds of rubber on a given day, or nearly 250,000 pounds per month.**
- **The 142,000-square-foot facility employs 45 workers and operates three shifts year-round.**
- **Its state-of-the-art onsite lab, testing and development facility features AutoCad Mechanical Desktop and Pro Engineer for mold and part design.**



**Among the company's many products are these rubber isolators, which are bolted to the bottom of the skids in which U.S. missiles are shipped.**