



Steeling the Spotlight: MacPherson & Company

By Heather N. Smith

Iron & Steel Technology visited MacPherson & Company in Warren, Ohio, USA, for our series that spotlights the grass-roots companies powering today's steel industry while positively impacting the communities in which they operate.

When you step through the doors of MacPherson & Company in Warren, Ohio, you're met not just with history, but with possibility. Light filters through the window-paned doors, catching on the blue glass of the very first invention crafted by Jane MacPherson, the Rolling Glare Shield, a quiet monument; a reminder of where she started and encouragement to defy what is possible.

To the left stretches a world map, each pushpin marking a steel mill with products in a crane cab and furnace platform areas — places where MacPherson's custom

windows have protected lives. Across the room, lining the far wall, is a collection of plaques and awards that tell another story: the rise of Jane MacPherson, engineer, mother and now chief executive officer, whose leadership carried the company from legacy to future, from paper to digital.

What started in Kenneth MacPherson Jr.'s garage six decades ago as a glass supplier is now within a 30,000-square-foot manufacturing facility that saves lives inside some of the hottest, most hazardous environments in the steel industry.

The hum of production is faint beyond the entryway, past the expansive kitchen and offices, but even in the stillness it's clear this is a company built on more than steel and glass.

It's built on purpose: to protect steelworkers.

“Strength you can see, protection you can trust”

The MacPherson legacy traces back to 1923, when Kenneth MacPherson Sr. opened the first independently owned welding shop outside of Lincoln Electric in Cleveland, Ohio. Both his sons, Bruce and Kenneth Jr., learned how to weld and glaze windows from him. In 1942, Bruce, then just 12, was welding ships for World War II.

Kenneth Sr. rented to a glass glazer who left all his equipment behind when his business failed. This led to Kenneth Sr. starting to supply commercial window. In 1965, Kenneth Jr. officially founded MacPherson & Company in his garage as a glass-only business. When Bruce, who used to work for NASA, joined in 1969, the company shifted its focus to special impact protection for steelworkers. This led Bruce to develop the HOOGOVS™ brand of impact-resistant glass. The same year, Bruce founded MacPherson Engineering and launched Engineered Window Systems with HOOGOVS Safety Glass. It has since been globally tested without penetration and in service for over 50 years.

Their early work was inspired by crane engineers from the 1930s whose experiences helped guide OSHA standards and shaped much of today's heavy equipment safety practices. In 1972, Bruce and a group of overhead crane engineers from all over worked to develop the OSHA regulations used today for crane cab design.

In 1999, as the elder MacPhersons prepared for retirement, Bruce's son Dan, who had earned a business degree, was put in charge of running the business while Jane took over the engineering division. In that same year, MacPherson Engineering bought out MacPherson & Company and the companies combined into one.

Bruce, an original member of AISE and later AIST, passed away in 2015, leaving ownership of the company to his wife Beverly.

With Dan's wife, Elizabeth MacPherson, the chief financial officer, Tammy the office manager and Jane the director of engineering, MacPherson & Company became primarily run by women and 100% owned by a woman. When Beverly passed in 2019, ownership of the company was transferred to the five MacPherson siblings.

At that time, Dan wanted to do a book tour, so their brother Ken suggested nominating Jane as chief executive officer. Jane took the position on 30 September 2019, carrying on the design legacy from Bruce and ensuring the company continued as a woman-owned business.



“The glass expert”

By 1969, MacPherson & Company discovered that replacing only glass in crane cabs wasn't enough; the surrounding structure mattered just as much. The real solution was designing full window systems, sash and frames included, that could withstand the intense heat and pressure of the hostile steel mill environment. MacPherson's special insulated paint on the metal frame design cuts ambient heat transmission by up to 30%, keeping crane operators safer and more comfortable in extreme conditions.

“It's not just about selling glass,” Jane said. “It's about solving problems and keeping people alive.”

Jane's own path into the industry began long before she took the helm. She started working for MacPherson Engineering in 1989 as a computer-aided design (CAD) drafter while raising her children. In 2002, when she started visiting steel mills, she was often the only woman on-site. Back then, most mills hadn't even added women's restrooms yet, but Jane already had 12 years of design experience.

During one visit, after being made to wait for over an hour, standing and holding her gear, the workers she was meeting eventually came and told her to measure the windows from the interior. However, Jane insisted on measuring windows from the exterior — just as her father had taught her.

While she was measuring, the superintendent, unbeknownst to her at the time, came up behind her and began asking questions. Jane, remembering a lesson learned long ago from the founder of Lincoln Electric when someone bypassed him due to how he looked, answered with patience and professionalism. She knew not to judge anyone by their outward appearance.

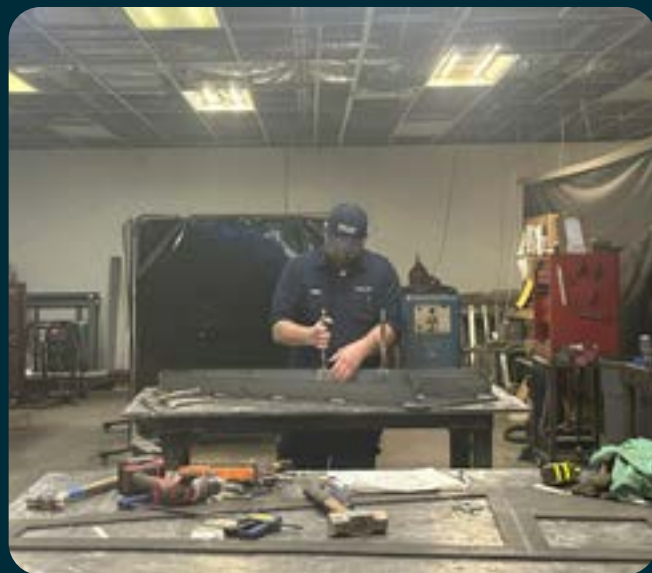
That meeting turned into a long-term contract and that same lesson was taught to those at that facility.

“They called me the ‘glass lady’ the first time,” Jane recalled. “But by the second visit, I was the ‘glass expert.’”

Over the next five years, she delivered 16 custom crane window redesigns to that same facility.

“We are here to save lives”

When MacPherson & Company purchased their new building in Warren, Ohio, in early 2020, just two weeks before the COVID-19 shutdowns, it was a leap of faith. The facility, once home to Pocket Foods (a precursor that





had nothing to do with Hot Pockets) and originally a bowling alley, needed serious rehabilitation. Mold, water damage, 16 holes in the roof and even animal infestations meant the renovation estimate ballooned to quadruple the original amount.

The new facility includes a climate-controlled former walk-in freezer (conveniently still in place from when the facility was owned by Pocket Foods) used for moisture-sensitive glass manufacturing, six work tables in the assembly area, four welders and a makeshift paint booth converted from another old freezer (also a relic from Pocket Foods). But the result was worth it: from 10,000 square feet in Berea, Ohio, to 30,000 square feet in Warren, Ohio, including 20,000 square feet of manufacturing space.

At MacPherson & Company, “Made in the USA” isn’t just a marketing tagline, it’s a commitment. Since August 2021, every component they manufacture is proudly built on American soil, supporting domestic jobs, and ensuring total control over quality, safety and lead times.

The decision to be sourced as much as possible and made 100% in America came in 2021 when all the oceangoing cargo ships bringing material from overseas were waylaid in San Francisco due to the COVID-19 pandemic. During that time, MacPherson & Company couldn’t source their silicon sponges from two of the three companies they worked with since they got their key chemical from China. While the third company’s product cost doubled, they could make the sponge in the correct viscosity and porosity with the exact dimensions needed in Georgia.

The one exception to sourcing in the U.S. is their Borophosphosilicate (BPS), as Corning Inc. sold the rights to their BPS glass to Schott Glass located in Germany. However, by the time they finish processing the BPS, the result is 100% made in the U.S.

Today, MacPherson & Company employs more than 20 people, in addition to three engineers and a network of trusted subcontractors including over 30 glass installers from around the world. The solution needed for each project is different and requires the engineers to analyze heat loads, crane duty cycles and operating distances to create tailored safety systems.

Each product arrives to the customer packed in a custom crate hand-built by John, the company’s long-time packaging expert. Inside those crates are windows engineered for more than visibility; they’re built for survival.

Employees undergo rigorous training and testing. “If they don’t pass the final exam, they don’t stay,” Jane explained.

Where once MacPherson relied on an automotive shop across from their prior location, they now paint all their products in-house with their own heat-resistant paint.

“The paint is like an art for her,” Ken explained when talking about their painter, Jenny. “So, if you go in her booth, everything is exactly in its spot, it’s all done a certain way ... she’s an artisan.”

Over 50 years, no fatalities have occurred while using MacPherson window systems, a point of pride and purpose that drives their customer philosophy. Where once the business practice had been to increase sales based on saving money, now they focus on saving lives.

“We are here to save lives,” Jane said. “That’s our mission. We won’t push things forward if lives are on the line.”

“Molten metal reactions”

MacPherson’s industrial safety windows solutions are engineered for a range of extreme hazards from molten splashes to radiant light and explosive force. Whether it’s heat shield glass designed to reflect intense thermal energy, impact glass built to absorb shock or blue shield glass used to filter glare, each type serves a specialized purpose. Visibility isn’t the main focus when it comes to selecting the right materials; it’s about survival.

One common and dangerous misconception the company works to correct is the belief that bullet-resistant glass can substitute for explosion-resistant glass in industrial settings. The failure to understand the difference, Jane warned, could cost lives. That’s why her team takes a hands-on approach, working closely with customers to ascertain their needs and train personnel in proper usage, replacement and maintenance.

Every system is customizable to suit the environment. Variables like proximity to the heat source, the type of crane and exposure to molten materials all factor into the engineering equation. That’s why Jane emphasizes education, not just sales. Customers are taught the difference between replacing a pane and replacing a system because getting it wrong could mean leaving operators vulnerable.

The three categories of solutions available include heat issues only; heat and impact issues; and heat, impact and splatter issues.

In the most hazardous locations, the company also offers barrier wall systems for added layers of safety and containment. Other systems they offer include crane cabs, control rooms, and specialty systems such as doors and walkable floors.

Their thumb-lock systems allow windows to be replaced in under a minute, even between heats. This minimizes downtime and maximizes protection without requiring tools or specialized training. They even put notes on the wedges that say “thumb push only, no tools” to remind their customers.

“You can get the window changed in between heats if it’s life-threatening,” Jane said.

Jane is currently working on developing a new department within the company so they could have their own in-house coating line. A new building is in the works on their 20 acres of land for the additional workspace they would require for the oven.



“We’re working with physics, not guesswork.”

Building on ideas first explored in the 1970s, the research and development branch of the company, led by Ken, is pioneering a new era of specialty infrared reflecting (IRR) glass coatings aimed at pushing the limits of safety and performance. The goal is to deliver explosion-proof, shock-resistant glass embedded with transparent coatings capable of withstanding extreme conditions and reflecting extreme temperatures while maintaining visibility.

At Ken’s desk, a custom-built infrared light heats glass sheets to precise temperatures while a microcomputer measures photon transmission across visible and infrared wavelengths. The goal is to optimize both the emissivity and transmissivity of glass surfaces, ensuring they perform under real-world conditions without compromising safety or speed of production.

“The science is fundamental,” Ken noted. “We’re working with physics, not guesswork.”

At the heart of this work is a team of engineers, researchers and a pair of eager interns whose passion for engineering has found a home. Every summer, the company welcomes undergraduate interns. This year, Mario and Logan, both mechanical engineering students, were chosen out of 99 applicants.

The company’s latest advancements in the R&D division has been developing new glass coatings using the latest technology. The coating will allow more of the glass manufacturing to be done in-house and reduce lead times for greater efficiencies.

But innovation comes with challenges. The R&D team, undeterred, continues to refine their glass coating and recalibrate processes to ensure safety and performance at scale.

“Once the project is done, we’re going to make it all automated and then try to find other industries we can sell it to,” said Ken.

In September 2025, MacPherson & Company will launch a new product, already tested during worst-case scenarios and in use in selected steel mills.

Their attention to detail doesn’t end in the lab. In key experiments, glass is tested under brutal conditions. For example, ballistic testing procedures subject their materials to multiple firearm types, including armor-piercing rounds, ensuring the glass can withstand impacts well beyond typical industrial threats.

The catalyst to working with mining equipment companies came when a machine’s tire blew out and shot a rock across the facility, breaking through a window. Over time, this same type of incident repeated across multiple



mining sites. It was then that MacPherson was called in for their safety glass to protect those workers. Now, the company partners with multiple mining equipment companies and slag companies to help make their hardware better and safer.

“It’s a small company, so everybody’s family”

Jane has already passed on the engineering to the young engineers. Two key players that keep the facility running and are targeted to lead the company for the next generation are Trent, the plant manager, and Kelly, the head of human resources.

MacPherson & Company participates in local causes like the Walk for St. Vincent de Paul and Party in the Park, which is a school supply drive in Girard, Ohio. For Party in the Park, they utilize their training room to pack bookbags for children from elementary through high school. This year marks the 20th anniversary of their bookbag giveaways.

This year, 150 bookbags were donated from the Boys & Girls Club, but Ken said there’s going to be almost 400. Every year before school starts, employees dedicate their time to give back to their local community by packing those bookbags.

Last year, when a local Pee Wee football team received helmets in the wrong color, MacPherson employees stepped in and repainted them, ensuring they did so in time for the team’s first practice.

What sets MacPherson apart isn’t just their specs, it’s their story. This is a company that once tested their annealing and coating methods using a converted pizza oven. That kind of ingenuity, born from necessity, now fuels cutting-edge systems trusted in some of the world’s harshest industrial environments.

From small-town Ohio to steel mills across continents, MacPherson windows are recognized not just as equipment, but as lifelines. ♦

