



ERWIN
AMASTEEL

PEOPLE WHO MEASURE THEIR SUCCESS BY THE SUCCESS OF THOSE THEY SERVE.

When John F. Ervin opened his first foundry in 1920, he brought with him a salesman's passion for customer service and an engineer's mind for product development.

His basic formula for success was simple. Know your customers. Sell them only quality products. Adapt to new and changing markets. Never stop improving.

Mr. Ervin's pioneering efforts in blast cleaning materials led to new technolo-

gies, processes, techniques and applications. Discoveries that revolutionized the metal abrasives industry.

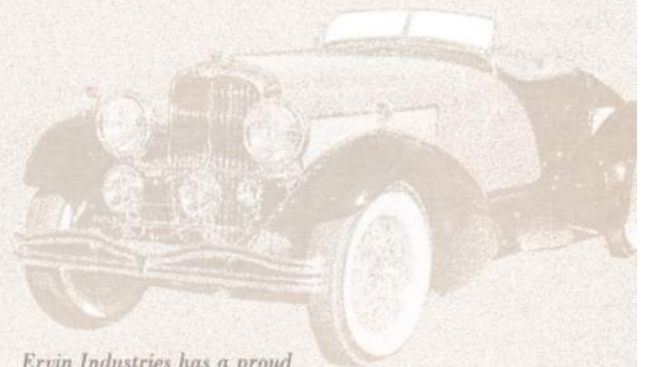
And the consistent performance of his high quality products became the standard for all future advances.

The world has changed a lot since Mr. Ervin's day, and so has the company he founded. But one thing hasn't. Today, we still apply the same creative intelligence to every product we make, the same personal commitment to every business we service.

It's what our customers have come to expect of us. And it's what we've come to demand of ourselves.



*John F. Ervin
Founder, Ervin Industries*



Ervin Industries has a proud history as a major supplier to the world-wide automotive

As the leading international producer of cast steel abrasives, Ervin Industries' AMASTEEL trademark has become synonymous worldwide with product quality, reliability and customer support.

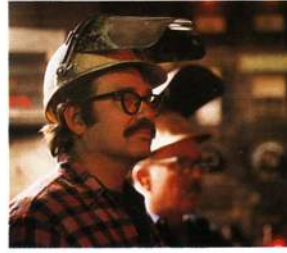
We believe that is why Ervin AMASTEEL outsells its nearest North American competitor, three to one.

And it also explains why our products continue to find broad and growing applications in such varied markets as automotive, aerospace, agriculture, construction, foundry, mining, railroad, shipyard, stone cutting, office machine, petrochemical and other major industries.

Shot and Grit

Ervin AMASTEEL comes in three forms: shot, grit and a blend of the two.

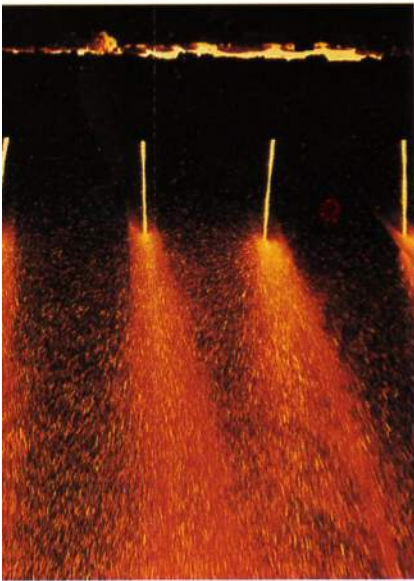
AMASTEEL shot is actually a sphere-shaped form of steel casting. Born of a process that was developed and patented by John F. Ervin in 1939, the shot is manufactured by pouring a molten mixture of premium grade steel scrap and select alloys through a series of water jets.



People . . . our most valuable asset.

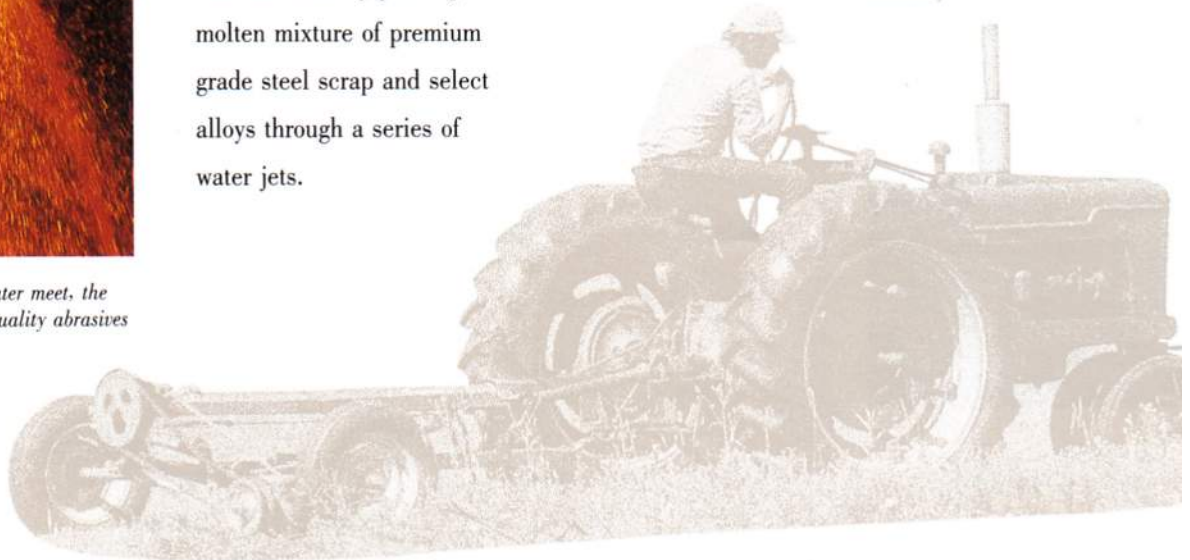
On contact with the water, the molten metal is atomized, forming round particles in a controlled range of sizes.

These particles then fall into a water tank, are then dried, screened by size, quenched and tempered in a unique heat-treating process. A process that assures ultimate control over the microstructure and hardness of the product, prior to a final screening.



When steel and water meet, the world's premium quality abrasives are created.

AMASTEEL abrasives have met the challenges of the agricultural equipment industry.



Grit is made by crushing the fully hardened shot, screening the resulting media and tempering it to a desired hardness.

The AMASTEEL manufacturing process, from raw materials to the finished product, is governed by the most sophisticated statistical process

Basic Applications

Although AMASTEEL abrasives are used in the production of a wide array of products, they have four primary applications.

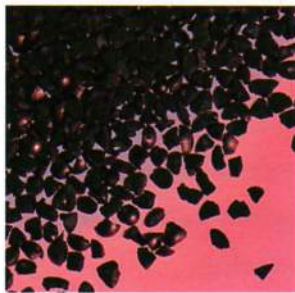
As a *blast cleaning* medium, shot, grit or a mixture is used to remove various forms of surface contamination from a broad



Ervin people combine technology and experience to guarantee the uniform quality of AMASTEEL.



Ervin AMASTEEL shot and grit has received more quality recognition awards than any other abrasive manufacturer in the world.



control quality assurance system in the metal abrasives industry.

Our meticulous attention to every facet of AMASTEEL production results in a product that outlasts and out-performs any other steel abrasive in the market.

spectrum of steel or foundry products.

In a *peening* application, AMASTEEL shot is used to impart compressive strength to torque or load bearing metal parts, such as jet engine turbine blades, automotive springs, or heavy equipment crankshafts.

As a *cutting* medium, hard AMASTEEL shot and grit is used in gang-saws to process granite and marble blocks.

In addition, the sharp, angular form of grit makes it ideal for *etching* a textured surface on metal — thus enhancing its ability to bond paint, enamel, rubber or other coatings.

AMASTEEL . . . a preferred product for surface preparation and component cleaning in the rail industry.



From a single jobbing foundry in Adrian, Michigan in 1920, Ervin AMASTEEL has evolved into a global manufacturer with production facilities on five continents.

Our joint venture and licensing arrangements guarantee an uninterrupted supply of quality product worldwide. But just as important, they bring us closer to our international customers.

This makes it easier to tailor our products, systems and services to their specific needs. Just as we have

done with our North American customers for nearly three-quarters of a century.

Partners in Progress

Over the years, Ervin AMASTEEL has prospered by being versatile, innovative and adaptive to our customers' changing requirements.

We continue this commitment today.

Sometimes, it means developing a unique product blend — even if it also means altering an existing manufacturing process to accomplish it.



AMASTEEL Plant, Butler, Pennsylvania

Other times it means meeting customer expectations by creating and applying entirely new technology.

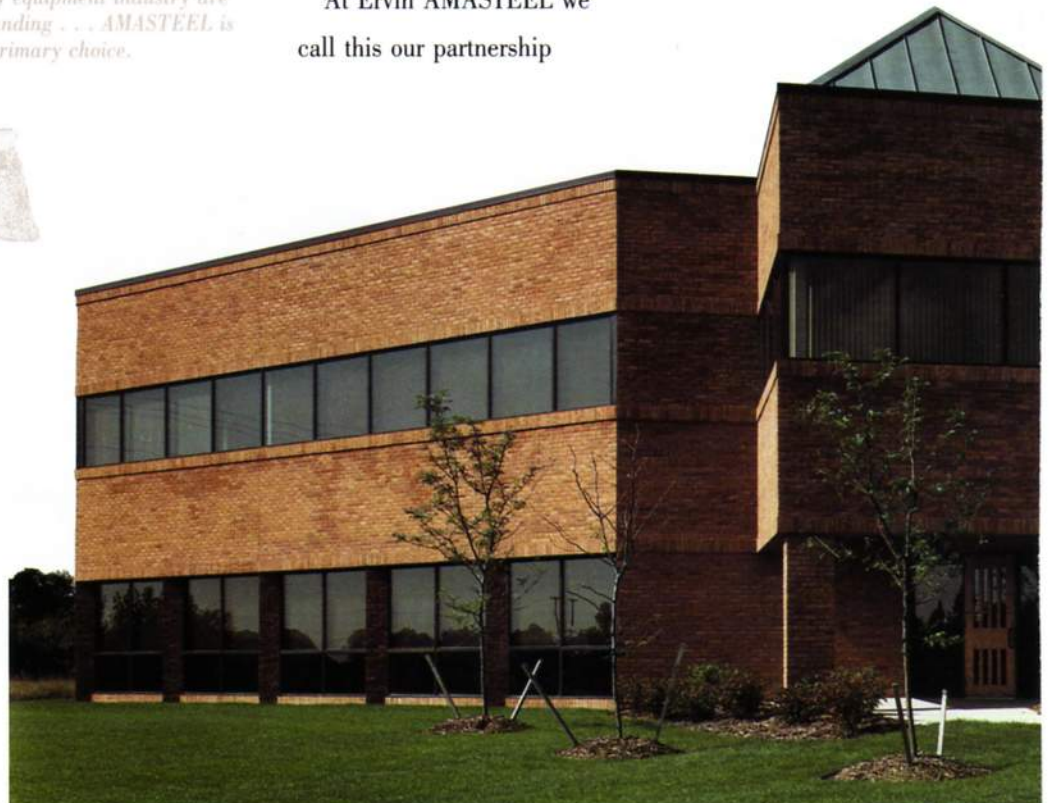
It might even mean changing the way we package our product so it is easier or more efficient for a customer to use.

At Ervin AMASTEEL we call this our partnership

approach to customer satisfaction. A partnership that is based on understanding each customer's unique manufacturing processes. And then putting the best product, the right tools, and the most respected problem-solving team in the business at their disposal.



Service requirements for the heavy equipment industry are demanding . . . AMASTEEL is the primary choice.





AMASTEEL quality is a reflection of pride and dedication.

Meticulous Quality Assurance

In today's highly competitive market, quality assurance has become an issue of compelling importance. Ervin AMASTEEL has always excelled in this demanding environment.

We not only *invite* our customers to conduct on-site audits and inspections of our operating facilities and quality plans — we *encourage* them to do it.

Why? Because year in, year out, Ervin AMASTEEL wins more quality recognition awards and passes more customer quality

*Corporate Headquarters
Ann Arbor, Michigan USA*

assurance audits than any other abrasive manufacturer in the world.

We are the only cast steel abrasives manufacturer in North America with a fully implemented statistical process control system. In practice this means we have made an uncompromising commitment to never-ending improvement. In product.



Training . . . a continuous element in the AMASTEEL quality plan.



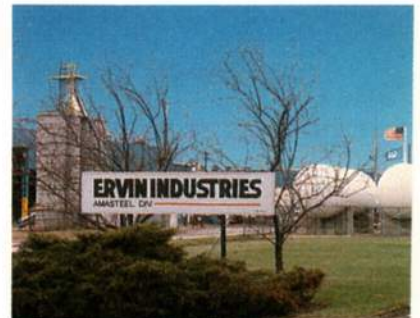
Keenable metallurgical and physical characteristics of AMASTEEL shot make it the number one choice for shot peening aircraft components.

In technology. In systems. In personnel training. In customer support.

It is a process that ensures that our abrasives will always represent the highest quality standards in the world.

Our strict adherence to this philosophy goes straight to each customer's bottom line. It shows up in lower materials usage and higher productivity.

It's exactly what you would expect of a business that has become the standard-bearer for an entire industry. And it's why Ervin AMASTEEL is *the* supplier of preference to more than 7,000 companies around the world.



AMASTEEL Plant, Adrian, Michigan





Applying technology to promote continuous improvement in product quality.

For Ervin AMASTEEL, quality means more than just making products without defects. It also means working with our customers to make sure the products they produce also meet the highest quality and productivity standards.

Through technological involvement . . . product application assistance . . .

customer training seminars . . . electronic ordering . . . just-in-time delivery . . . reduced inventory needs . . . task force problem solving.

All of which adds up to the most comprehensive customer support programs in our industry. Programs that dramatically improve efficiencies and enhance performance.

But it takes special people to provide this kind of

service. Sales representatives who are experts in abrasives applications and who take pride in a job well done.



Operations management supports the systems and services on which customers depend.

Stone cutting is hard work . . . for optimum performance of gangsaws the obvious choice is AMASTEEL.



Experts in metallurgy and the science of abrasives work directly with customers.



Hands-on Involvement

Every member of our sales staff is trained in blast machine maintenance. As a result, they are familiar with just about every blast cleaning and shot peening system design and process now in operation.

So they are able to help our customers identify out-of-adjustment conditions. Select and maintain the most efficient abrasive operating mix. Improve machine operations. Reduce abrasive consumption. Suggest corrections before they become costly problems.

And behind our sales force is an internationally respected technical support staff. A group of skilled engineers and technicians whose knowledge of blast cleaning technology and systems is unmatched anywhere.



The Ervin Test Machine is a standard throughout the world . . . it can help determine the most cost efficient abrasive for specific peening and cleaning applications.

Experts in metallurgy and the science of abrasives, they often work directly with our customers to find optimal solutions to their toughest special application and production problems.

Product Development

Long associated with engineering excellence, Ervin AMASTEEL has taken bold initiatives to retain its position as a technology leader.

Our corporate vision is for continuous improvement. Our commitment: to make strategic break-

throughs in abrasive applications, materials, technologies and processes.

Solving today's problems. Anticipating tomorrow's needs. Just one more way Ervin AMASTEEL is working to provide value added services to our valued customers.



The spirit of Ervin people is committed to customer service.



Technological innovation has always been the driving force behind industrial progress. This process will accelerate in the years ahead as industrialized nations compete for dominance in international markets.

Today, for example, the total body of scientific knowledge doubles every five years. By the end of this century it will double every two years.

The companies that will prosper in this fast-paced, uncharted environment will be those that can anticipate changes, and then mobilize their resources swiftly, wisely, economically.

Yet only the companies that remain faithful to the creed of quality products and customer service will truly excel.



A partnership approach . . . by helping companies become better at what they do, we become better at what we do.

Positioned for Leadership

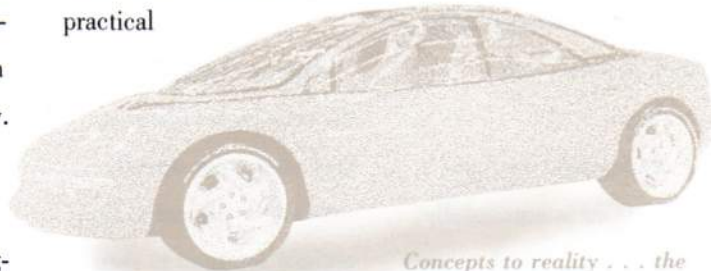
Whatever technological marvels the future may hold, one thing is certain—Ervin Industries will be on the front lines of discovery.

Evolving. Adapting. Tailoring our products to meet our customers' changing needs. Inventing new products to take advantage of breakthrough processes, technologies and materials.

Ensuring that every product we make, every service we offer meets the same exacting criteria that has guided us for the last seven decades.

And supporting our customers every step of the way will be Ervin people.

People who measure their own success by the success of those they serve. People committed to finding practical



Concepts to reality . . . the pursuit of higher expectations.

answers to each customer's unique production problems.

People who consider it part of their job to go above and beyond what is expected — to create higher expectations for their customers and themselves.

