

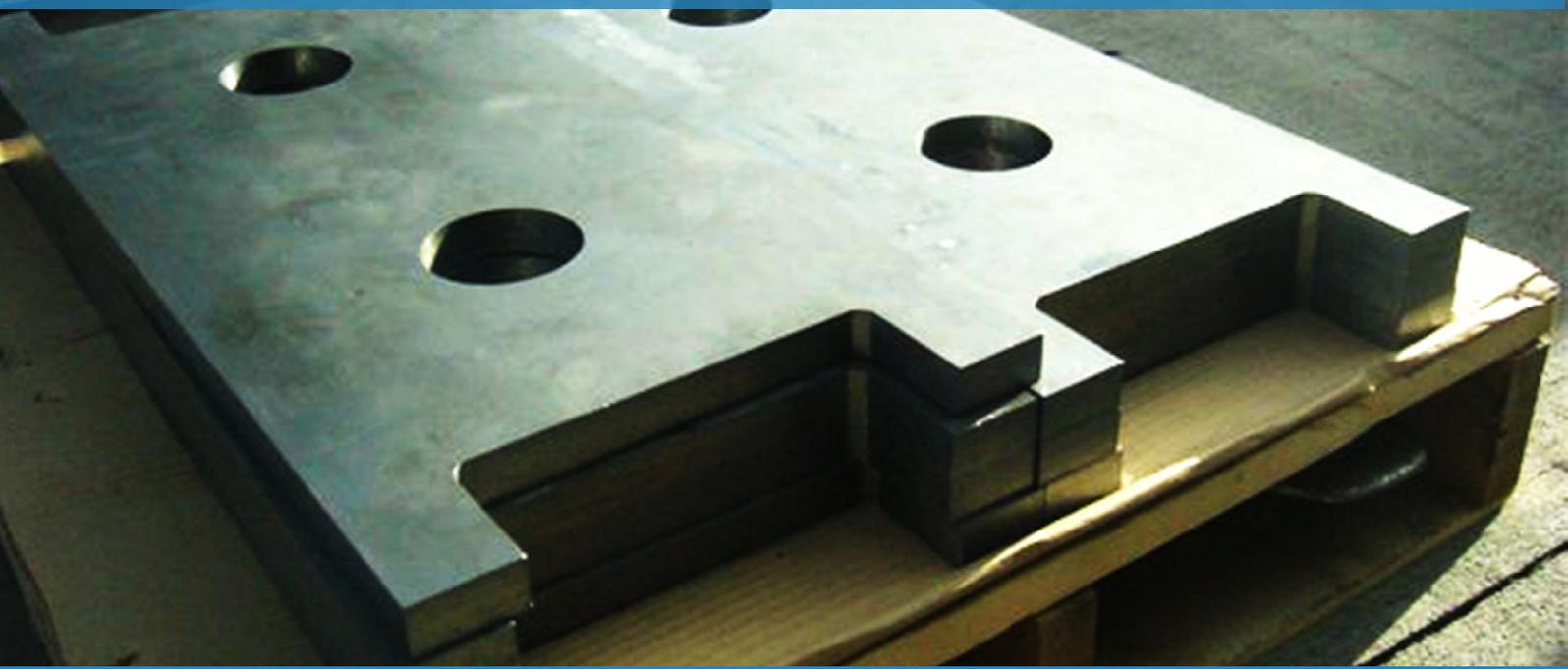
MarShield™

EVERY SOLUTION IN SHIELDING



AS FEATURED IN BUSINESS IN FOCUS
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For almost thirty-five years, MarShield has provided industry-leading radiation shielding and protection. The company has used its extensive knowledge and experience in the lead casting industry to create lead shielding, barriers and products for a diverse variety of industrial and commercial applications.



Celebrating 35 Years of *Customization* and *Diversification*

MARSHIELD

Written by Jessica Ferlaino

MarShield is one of three divisions of Mars Metal Company, located in the industrial centre of Canada: Burlington, Ontario. It enjoys the area's proximity to major power and nuclear operations, access to resources and raw materials and capitalizing on the region's extensive infrastructure, including rail, highway, air and marine transportation options. It also has a highly-skilled local workforce from which to draw.



Mars Metal Company started as a small 'one-pot' foundry, established by Philip Milne, whose son Kevin Milne is now serving as company president. The company initially produced lead solder for automotive and plumbing applications in addition to manufacturing custom castings. It quickly evolved into three divisions with three distinct purposes, all centred on lead casting.

Mars Metal Company began producing lead keels for luxury and competition boats, such as sailboats and yachts. The MarsKeel division developed a large repertoire of clients, first solidifying its place in the Canadian market and entering the

U.S. market in the mid-1980s before becoming a player in the international market.

MarsKeel is involved from the early design phases to execution and has had great success working with companies worldwide. It has earned recognition for its customized work, as some of the keels can exceed \$250,000 and are used in boats valued at \$8 million to 10 million. Each year, MarsKeel maintains a presence at industry shows, such as the Monaco Yacht Show.

MarsKeel can transfer 200,000 pounds in a single pour, although its largest single pour was just under 155,000 pounds. This project was for Hogdgon Yachts of Maine and was the biggest single-pour keel in North America.

MarsKeel has also become a supplier of choice of Southern Winds Yachts of South Africa, breaking into that market just under a decade ago. At that time, the production boat market had weakened and the custom super yacht market was gaining momentum. ▶▶



► The decline in sailboat production was a strong indicator to Milne that in order to remain competitive, decisions would have to be made to diversify the products and services being offered. It was then that Mars Metal Company was expanded and split into its three divisions in the process. "We want to be specialized, and that's why we separate our divisions," he explained.

"MarShield offers a number of products and services, many of which are customizable."

"The bottom line is, we separate our divisions because one is more specific to medical, the other one is more specific to industrial – with a specialty casting division – but they do cross over," speaking to the diverse nature of the work they do.

Mars Metal's specialty casting division manufactures various customized products, including lift bridge counterweights, mineshaft elevator weights, test weights and damper weights. The division has done work on bridges in Connecticut and New York, as well as working on a project for Madison Square Garden.

Mars Metal Company uses only ingot lead, not secondary lead for its castings, mitigating health and environmental risks doing so. Though this practice is more costly, it ensures consistent quality output and creates a more environmentally-friendly workplace and products. Mars Metal is a distributor of lead shot, sheet lead and lead ingots. The division sold over a million pounds of sheet lead last year alone.



Lead offers excellent protection against, and containment of, radiation due to its density. The products manufactured by MarShield, Mars Metal's third division, transitioned Mars Metal Company's focus from products of luxury to products of necessity. This division manufactures and distributes shielding and containment devices for medical, nuclear and border security purposes. Seventy-five to eight percent of its products are manufactured in-house. The growth in lead shielding for the nuclear and medical industries accounts for seventy percent of annual sales and promises to drive the next wave of growth.

"We have now expanded into modular x-ray rooms, fixed x-ray rooms. All of these rooms are shielded with sheet lead. So, with that being said, that's where our shielding comes in, and the lead casting industry kind of came together," said Milne. "From there, we also do cast lead brick, which is for high dose radiation facilities." All of this is in addition to its customized lead containers and cabinets.

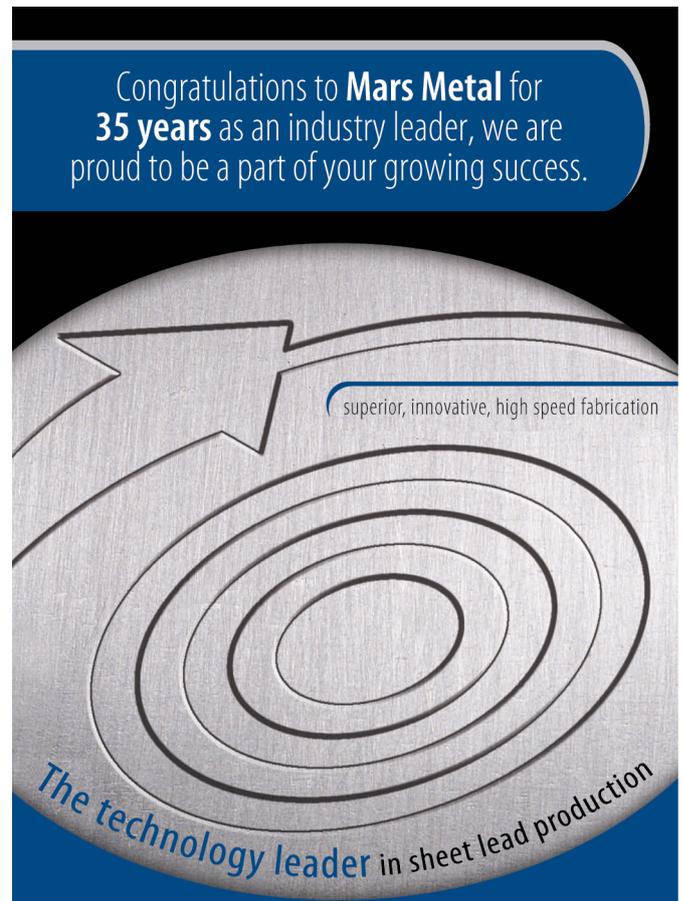
Through its expansive stock and custom radiation shielding,



protection and barrier products, MarShield has become an industry leader. The company puts its expertise to the test, serving as a partner to corporations, institutions, military and government entities as a full service provider of radiation protection solutions.

“MarShield is the premier radiation protection company for the nuclear, medical, material handling, aerospace and marine sectors.”

MarShield is a long-term supplier for several U.S. government agencies and the premier radiation protection company for the nuclear, medical, material handling, aerospace and marine sectors. Its products qualify under the Trade Agreements Act and are fully compliant with all laws and regulations to which



they are subject. MarShield has gained full operational approvals to work with industry bodies such as Ontario Power Generation (OPG) and CANDU.

The company is ISO 9001 and CSA Z299 quality management system certified, having developed quality assurance processes to satisfy the unique needs of the industries it serves.

“We have written our own pouring approved procedure that is now an industry standard. So if we do a nuclear casting pour, it has to be regulated, first of all by the industry, but it also has to ▶▶





- ▶ be documented, and these documents can contain up to 150 pages for one single pour. Everything has to be regulated by heat, by temperature, and there cannot be any failures because it's shielding for any type of radiation," Milne described.

"MarShield is the Canadian distributor of a product called Silflex, a non-lead alternative made of flexible, tungsten-impregnated silicone pieces."

Diversification has been the single largest catalyst of MarShield's growth. It has found marketplaces with potential and created a niche for itself within those markets, specializing in customization, unparalleled products and customer service. The ever-growing need for medical facilities has significantly improved MarShield's market share.

Additionally, over the next several years, significant refurbishment projects will be taking place in the nuclear industry that must be completed in the interest of safety. With millions of dollars of work expected in the coming years, reactors will be shut down for the necessary repairs and upgrades to take place, which is where MarShield comes in.

MarShield offers a number of products and services, many of



which are customizable. These include nuclear lead pours, lead furniture and cabinets, storage containers, lead wool blankets, borated polythene, high density concrete blocks, lead bricks, as well as lead wool snakes, wraps and annulus shielding.

MarShield is the Canadian distributor of a product called Silflex, a non-lead alternative made of flexible, tungsten-impregnated silicone pieces that serve well in hard-to-shield applications. An alternative to lead blankets, Silflex is non-toxic, easily cut and lightweight for ease of use.

For medical imaging, pet and nuclear medicine applications, MarShield produces a large variety of shields, barriers, booths, x-ray rooms and lead curtains as well as lead-lined doors, windows, glass, drywall, plywood and even lead acrylic. Recently, MarShield supplied the 2015 Pan Am Games in Toronto with all its required security x-ray rooms and facilities.

MarShield also serves specialty markets including industrial radiology, non-destructive testing, security and defense. In fact, one of the largest jobs completed by MarShield paired it with a company from Chicago to produce an x-ray system for use at international borders to prevent the transportation of illegal contraband. The company has manufactured a quarter of a million lead bricks for this system.

The company uses in-house CAD capabilities to work with customers to turn ideas into realities. MarShield also manufactures prefabricated lead-lined wall panels as an alternative construction approach. By using these panels, renovations can be avoided, as the panels can be rearranged or removed at any time.

"That's what we're all about," stated Milne. "We're all about customization, and we're all about working with the customer, providing them a solution to what they need for any of their radiation protection requirements." In addition to manufacturing, MarShield will deliver and install if the customer requires those services.

It also provides customers the resources to ensure the safe and optimal use of its products. MarShield strives to deliver the information required to make informed decisions for all nuclear and medical shielding and barrier needs, including radiation protection specs, MSDS information for its products and other shielding considerations.

"We are the manufacturer," stated Milne. "That gives us reason, first of all, to control our costs. Control our quality, number two, and, number three, control our delivery time." By doing this, MarShield continues to identify new areas of growth and opportunities for further diversity. ■

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