

**EXPERTISE.
INNOVATION.
PARTNERSHIP.**



> **TMS International**

provides on-site mill services to support the production processes of global steelmakers. We deliver unrivaled service to our partners every day, on every contract, everywhere we operate around the world.



“Our goal is to create value for our customers in all business environments and provide excellent service. As one of the leaders in our industry, it is our customer focus, attention to details and, most importantly, our best-in-class safety performance that we believe differentiate us from our competitors.”

Raymond Kalouche
President and CEO
TMS International

> PARTNER WITH EXPERTS

International competition. Cost pressures. Environmental issues. Demand for innovation. Today's steelmakers face daunting challenges in an increasingly global marketplace.

At TMS International, we help steelmakers address these issues to gain competitive advantage. We lead our industry with the most comprehensive and innovative array of pre- and post-production mill services. Our on-site services range from scrap purchasing, optimization and logistics to metal recovery, slag processing, scarfing, surface conditioning and maintenance.

Our people, services, technology and equipment provide invaluable resources that support and enhance our partners' entire manufacturing operations.

We expertly manage non-core operations so our customers can focus on what they do best: making steel.





TMS International's Difference

The secret to our success is the expertise of our people and our commitment to unrivaled service. We hire the best people for the job, equip them with what they need, and empower them to do whatever it takes to get the job done right—including making decisions on the spot to create immediate value for our partners.

A Proud, Storied History

TMS International claims a proud heritage of partnership, innovation and integrity dating back more than 90 years. We trace our roots to two separate companies in the metal industry: Tube City Iron & Metal and International Mill Service.

Tube City was founded in 1926 as a scrap iron and metal dealer in McKeesport, PA. In 1928, the company moved to Glassport, PA, which remains the location of our corporate headquarters. International Mill Service (IMS) evolved from a company that operated a sand and gravel pit in the Cleveland, OH, area in 1936. It later expanded its operations internationally into slag processing and metal recovery. In December 2004, Tube City and IMS combined to create Tube City IMS, one of the world's leading outsourced steel services organizations.

As the company moved into its 10th decade of operations, we decided to change its name in order to better reflect our integrated operations and global status. Tube City IMS became TMS International Corporation in 2016.

Global Reach

TMS International provides specialized services at more than 80 locations and has trading offices on five continents.



> GAIN COMPETITIVE ADVANTAGE

Building strong, long-term relationships with our partners is the cornerstone of TMS International's business. Since 1926, we have been an industry-leading innovator, providing superior value—in fact, a large percentage of our work is repeat business from loyal partners.

TMS International excels at building best-in-class teams that meet our customers' toughest requirements anywhere in the world. We blend seamlessly into our partners' operations, becoming a value-added extension of their capabilities. High levels of accountability, frequent customer service meetings, problem-solving acumen and speed of decision making distinguish our field operations.

How We Create Value for Our Partners

On every job site we work relentlessly to achieve for our partners:

- **Excellent safety record**
- **Environmentally friendly practices**
- **Greater operating efficiency**
- **Lower operating costs**
- **Continuous quality improvements**
- **Problem-solving innovation**



FAST FACT

Many of the top global steel producers rely on TMS International for on-site mill support services.



Safety First

TMS International is a leader in our industry in safety. On every job site, we follow a rigorous safe-work program that meets or exceeds all government requirements for employee safety. Our goal is zero accidents, injuries and incidents at the mills we service.

We attribute our excellent record to our behavior-based observation program, strict adherence to safe work procedures, engineering out hazards, and a full-time safety team that works at locations throughout the world.

Relentless Focus on Quality

Around the world, TMS International goes beyond basic requirements with our Continuous Improvement programs. Many of our facilities are ISO 9001 quality certified, with 100 percent compliance and certificate renewal performance. These efforts generate quality, efficiency and cost-savings for our partners.

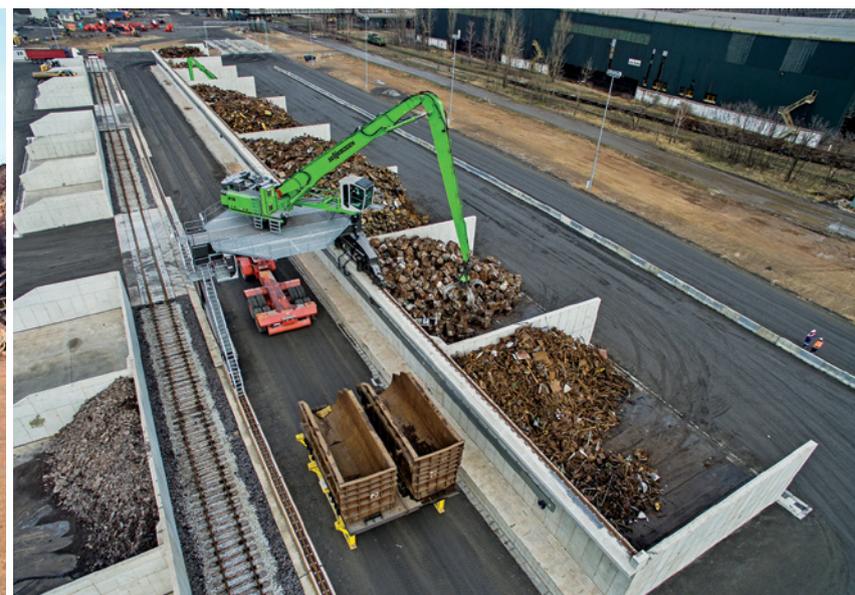
Integrity in Everything We Do

At TMS International we have an exemplary reputation for doing business with integrity and according to the highest ethical standards. Integrity is ingrained in every aspect of our business culture from our administrative offices to our on-site facilities.

Environmental Mission

TMS International is committed to preserving and protecting the environment and the communities surrounding its facilities.

- We empower people to be proactive stewards, to identify risks, engineer controls to eliminate incidents, and foster a proactive attitude.
- We develop safety and environmental leadership at the site management level to build and maintain a team approach to safe and environmentally responsible operations.
- We also maintain a dedicated corporate environmental department consisting of experienced professionals focused on compliance with environmental regulations and sound environmental practices.
- Some examples of our environmentally sound innovations and practices: Our drop ball cranes are electrified to provide clean operations with no diesel or motor oils; new scrapyards also have electric cranes that require no diesel fuel or motor oils, eliminating emissions and potential spills and significantly reducing noise generation; patented innovative cutting technology significantly reduces emissions from metal processing; and non-paved roads and material piles are maintained to the proper moisture content to control dust emissions.



> DRIVE AND INNOVATION

Since 1926 we have been providing innovation and industry-leading pioneering technologies and programs in response to our partners' business needs.

Scrap OptiMiser® and GenBlend+®

The Scrap OptiMiser is TMS International's proprietary scrap purchasing program, which accesses real-time market pricing to determine the optimal scrap mix based on individual mill chemistry requirements, with an objective of achieving the lowest cost liquid steel.

The GenBlend+ system provides charging recipes for each individual heat and interfaces with the mill computer systems and scales in order to gather all scrap process-related information. All the scrap-related data collected is used to monitor and fine tune system performance, and provide a database for analysis. The interface with the mill computers and the crane operator is customized to provide the most efficient mode of operation.

Both models work together to control the

scrap charging process, scrap consumption and scrap inventory, taking advantage of scrap cost-saving opportunities to provide the lowest cost liquid steel.

Advanced Scarfing

Our torch-positioning technology combines the flexibility of manual scarfing with the production efficiency of a semi-automatic machine. We can remove all surface defects on any length, width, thickness or deflection of slabs. We also offer surface grinding for stainless, high-alloy and titanium.

Metal Recovery/Slag Handling

Our pioneering technologies process slag to maximize metal recovery and to produce useful environmentally beneficial aggregate products. Applications include road construction, asphalt, ready-mix concrete, pavers, cement, railway ballast, mining, filtration and agriculture.

Environmental Leadership

TMS International's services help steelmakers minimize their environmental impact and contribute to a greener world by recycling scrap metals, maintaining energy-efficient operations, and processing all by-products for beneficial reuse. Extruded Product Services is our newest service offering in this area.

We set high standards in the area of environmental responsibility—striving for performance that does not merely comply with regulations but reduces environmental impacts. We believe we have a responsibility to take care of our planet and preserve its beauty, resources and strength for future generations.



FAST FACT

On every job site around the world, our processes meet or exceed local government standards.

A FEW OF OUR ENVIRONMENTAL BENEFITS:

- 1 On partner sites, we recycle scrap metals and offer flexible services to process steel manufacturing by-products for environmentally beneficial reuse.
- 2 We maintain a full-time staff of engineers who design every job site to minimize environmental impacts for steelmakers.
- 3 We continually assess available technology to implement innovations beyond compliance levels where economically viable.



FAST FACT

We handle and process millions of tons of mill revert, industrial and obsolete scrap for reuse monthly.

Photo Courtesy of Siemens

> SERVICES AROUND THE WORLD

TMS International pioneered a comprehensive array of services to support every phase of steel production processes anywhere in the world. Our on-site facilities range from a single specialized service to large, diversified operations providing all our services. In everything we do, our goal is to help steelmakers run as efficiently, economically and sustainably as possible.

Pre-Production Services



Raw Material Brokerage

Our partners profit from our ability to buy and sell scrap and scrap substitutes at competitive prices. Knowledgeable traders in our extensive worldwide purchasing network maintain relationships and use leading-edge technology to gain access to real-time market information around the globe.

Inventory Management

At our customers' operations, the value of scrap in inventory can easily reach tens of millions of dollars. We optimize, track and report inventory levels and coordinate economical transportation. We can also provide automatic scales.

Scrap Management

We design, build and manage high-volume, sophisticated scrap handling, preparation and delivery systems to meet our partners' most rigorous requirements. Our on-site equipment, technology and manpower ensure well-engineered, efficient operations.

Scrap Optimization

We take scrap management to a new level with Scrap OptiMiser® and GenBlend+® optimization software programs. These sophisticated, proprietary purchasing and real-time melt-chemistry optimization programs determine the optimal scrap mix for every heat melt order, with an objective of achieving the lowest cost liquid steel.

Charge Bucket Loading

The first step in the production of any heat is to select the grade of steel to be made, and the preparation of the charge bucket is a very important operation. At TMS we assure quality control by carefully loading, mixing and delivering charge buckets and boxes directly to the melt shop furnace. We also offer truck dump scrap delivery to high-production EAF steelmaking plants.

Scrap Processing

TMS International provides the complete range of scrap handling and processing services. We handle and process millions of tons of mill scale revert, industrial and obsolete scrap for reuse annually. Our on- and off-site plants sort, clean, shear, torch, shred and bale unprepared scrap metal to customer specifications. We have installed state-of-the-art scrap processing facilities at our customer sites. Our modern West Mifflin, PA, facility provides scrap processing and production of tailored scrap commodities, including carbon steel and stainless coolant.

Post-Production Services



Slag Handling

We carefully study the operations of each mill to custom design a comprehensive program for removing, transporting and processing slag. We offer the flexibility to promptly remove and transport slag from any location to one of our processing sites.



Metal Recovery

Our recovery systems improve our partners' profitability by maximizing the reclamation of metals. Recovered metals can be used in place of externally purchased scrap to save costs.



Slag Aggregates

We process slag into versatile construction materials for environmentally beneficial use and commercial sale. Applications include road construction, asphalt, ready-mix concrete, cement, railways ballast, mining, filtration, agriculture and pavers.



Product Handling

Specialized carriers and overhead cranes transport semi-finished and finished products throughout our partners' facilities.



Logistics Management

Our logistics management covers all modes of transportation, including motor carriers, railroads, barges, intermodal, ocean and lake vessels along with private railcar fleets. Our global capabilities are cost-competitive and comprehensive.



Surface Conditioning

Our wide range of surface conditioning services helps our partners meet the increasing demand for high-quality steel products. Based on each mill's requirements, we custom design, engineer and install a comprehensive system adapted to the individual operation and product application. We manage operations, quality control, maintenance and technical support.

Our services include manual and robotic scarfing for carbon steel, as well as hand and machine grinding for stainless steels, high-alloy steels and titanium. Our innovative scarfing system flames away all surface defects from slabs of any length, width, thickness or deflection.



Surface Conditioning to Titanium, Specialty Metals, Stainless Steel Producers

TMS provides high-quality conditioning and conversion services to titanium, specialty metals, nickel alloy and stainless steel producers. Our full-service on- and off-site facilities provide metal producers with the flexibility and resources to handle a wide range of surface conditioning and processing services, including surface grinding, straightening, turning and saw cutting. For more information, go to Shastainc.com.



FAST FACT

We customize our mill support services to meet the unique challenges of our partners at on-site locations around the world.



Railcar Dismantling

We offer an array of rail services, from railcar dismantling to parts reclamation. Our logistics department monitors scrap railcars from origin to destination to ensure delivery.



Specialized Services

These services ensure mills have all the services they need to operate at maximum effectiveness. They include road maintenance and dust control, refractory removal, equipment maintenance and railroad service.



KWIK Cooling

TMS's patent-pending KWIK Cooling process reduces the required time for cooling non-ferrous material from 60 hours to 12 hours by using proprietary cooling vessels (CV). This is accomplished while also significantly reducing typical cooling-water consumption. Once filled with slag, the CVs are placed in specifically designed cooling stations. After 12 hours, the CV is tipped and the matte and slag are separated.



Copper Slag Services

We offer slag pot carrying services to copper producers around the world. Although each individual smelter has its own unique configuration and layout, we have the appropriate machinery, engineering and capabilities to provide customized solutions with safety as our priority. Our services include:

- Transportation
- Pot Carriers for molten slag, blister and matte
- Slag Cooling
- KWIK Cooling process for proper metal segmentation and collection of a usable product
- Slag Processing
- Screening & Crushing



Extruded Product Services

Our Extruded Product Services (EPS) delivers cost-effective steel mill by-product management, on- or off-site, producing pellets for re-melting fines, dust and sludge. We engineer our extruded pellets to meet your cost, performance and handling requirements:

- By-product management that creates value
- Better reclamation of valuable metallics for improved profitability
- Lower raw material costs
- Standardized, consistent, high-quality feedstock
- Selling or using as a feedstock to eliminate on-site storage, disposal and landfill costs



Innovative Cutting Technology

Innovative Cutting Technology (ICT), our patent-pending remote-controlled multi-torch system, eliminates the hazards of manually operated torches or lance pipes. ICT uses next-generation torch positioning technology adapted from our surface conditioning systems for the flexibility of manual cutting with advanced flame technology and production consistency of a semi-automatic system.

ICT delivers safer production, consistent sizing and product dimensioning, and better yield, with lower emissions.

We also provide on-site project cutting of large skulls and scrap accumulations.



Industrial Support Services

At TMS International, we provide a broad range of comprehensive services throughout the world. Our customers include not only world-class steelmakers but also engineering businesses, petrochemical companies, quarries, local authorities and sports venues.

Our Expertise Includes, but Is Not Limited To:

- Bulk Material Handling
- De-Watering Services
- Dust Suppression
- Facilities Management Services Including Drains, Grass Cutting
- Fork Lift and Mobile Plant Training Services
- Industrial Cleaning
- Jetting Services
- Labor Services
- Pre- and Post-Steel Production Services
- Refractory Maintenance Including Wrecking and Refurbishment
- Tanker Services
- Vacuumation
- Waste Removal
- Water Plant and Monitoring Systems

When you're talking with TMS International, you're talking with the experts in outsourced on-site mill services around the world.

We'd love to hear from you.



TMS International

Southside Works, Building
One, Third Floor
2835 East Carson Street
Pittsburgh, PA 15203
(412) 678-6141

1155 Business Center Dr.
Suite 200
Horsham, PA 19044-3454
(215) 956-5500

www.tmsinternational.com



Printed on recycled paper.
Please recycle.