

Quality Steel Tubing Products

for the Automotive
Industry

transformingtomorrow



ArcelorMittal

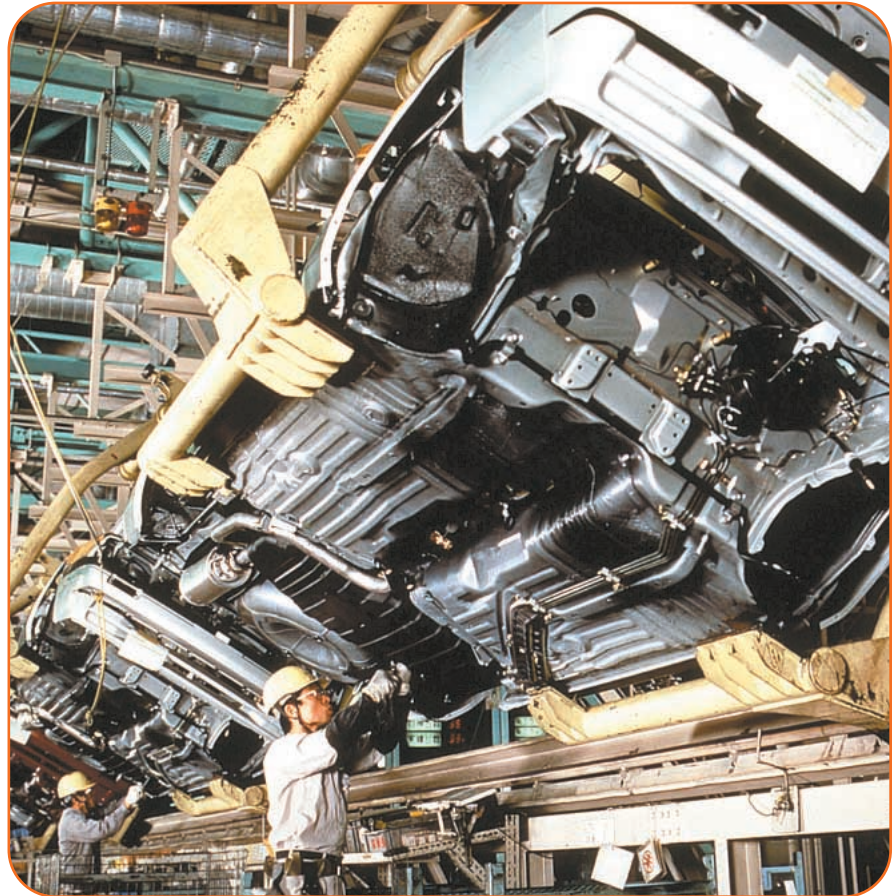
ArcelorMittal Tubular Products: the Largest Supplier of Automotive Tubing in North America

ArcelorMittal Tubular Products is the pre-eminent manufacturer of quality steel tubing for the North American automotive market. Auto and truck manufacturers and their suppliers account for nearly 30 percent of the 1.5 million tons of tubular products we ship each year.

We manufacture all of the major classifications of steel tubing utilized by the automotive market. Principal product lines include:

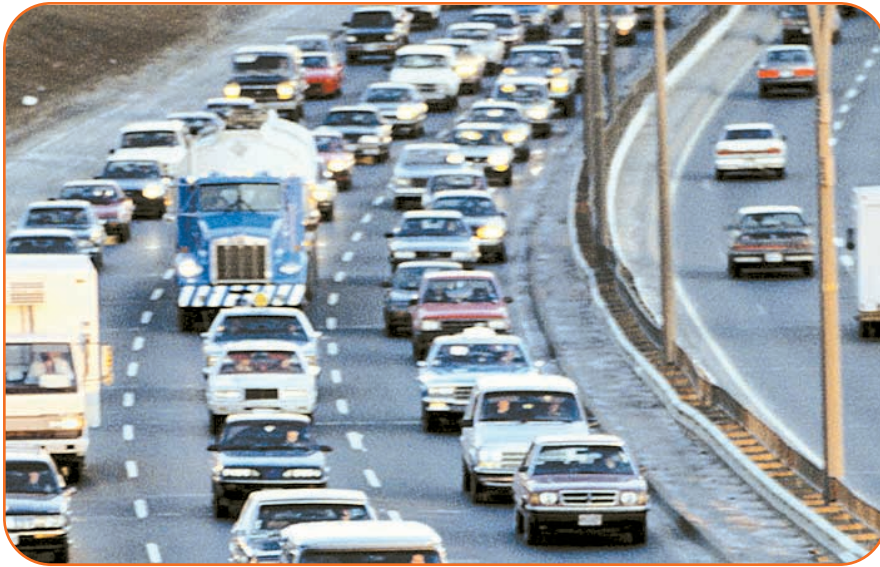
- As-welded mechanical tubing for a broad variety of mechanical and static applications.
- Drawn-Over-Mandrel (DOM) tubing for hydraulic and other particularly demanding applications.
- Seamless mechanical tubing for applications requiring heavy wall thicknesses and highly-controlled steel alloys.

The extent of ArcelorMittal Tubular Products's involvement in the automotive market is evidenced by the fact that all five of our tubular manufacturing plants ship products to the market. The greatest volume of these automotive shipments, however, come from the the 1.2-million-square-foot Shelby, Ohio plan. It is one of the largest DOM and seamless tubing producers in North America.



Other tubing plants serving the automotive market include those in Marion, Ohio; Brampton and Woodstock, Ontario; and Monterrey, Mexico.

ArcelorMittal Tubular Products has a significant additional involvement in the auto industry. Our Canadian Automotive Group is a major producer of tubular steel components for autos and trucks. These activities are detailed in a separate brochure.



Applications of ArcelorMittal Tubular Products Automotive Tubing

ArcelorMittal Tubular Products tubular products are used in an extremely broad variety of automotive applications. These are listed in the following paragraphs, broken down by the type of tubing involved.

As-Welded Mechanical Tubing • The yield and tensile strength of as-welded tubing, combined with its excellent bending and forming characteristics, have made it the product of choice for tubular chassis and frame components for autos and trucks such as instrument panel supports and suspension system components. It is used in traditional stamped and welded assemblies, as well as in the exploding market for hydro-formed tubular assemblies. Other common applications include axles, suspension parts and bar-to-tube transitional products.

DOM Tubing • The added strength that cold drawing imparts to DOM tubing, its excellent concentricity and enhanced surface characteristics make this product the choice for a number of particularly demanding automotive applications. Principal among these are heavy-duty axle assemblies, shock absorbers, prop shafts, high-speed shafts, gas springs, transmission parts and hydraulic cylinders for the lift mechanisms of hoods and tail gates. TuffDOM® tubing is designed for applications involving particularly tough stress, temperature or load-bearing requirements.

Seamless Tubing • Our hot-finished and cold drawn seamless tubing is custom-made to meet specific application requirements. It is available in a wide spectrum of carbon and alloy grades and in heavier wall thicknesses than our welded tube products. Applications include bushings, spacers, bearings and other mechanical parts in automobiles and trucks.

AUTOMOTIVE TUBING SIZE RANGES

As-Welded Mechanical Tubing

Rounds

Outside Diameters: 0.469" to 12.500"
Wall Thickness: 0.035" to 0.685"

Squares

Sizes:
0.500" to 2.500"
Wall Thickness: 0.035" to 0.195"

Rectangles

Sizes:
0.500" x 0.875" to
2.000" x 3.000"
Wall Thickness: 0.035" to 0.195"

DOM and TuffDOM® Tubing

Outside Diameters: 0.750" to 12.000"
Wall Thickness: 0.049" to 0.625"

Seamless Mechanical Tubing

Outside Diameters: 1.375" to 7.750"
Wall Thickness: 0.188" to 1.625"

Sizes of ArcelorMittal Tubular Products Automotive Tubing

Our DOM, as-welded and seamless mechanical tubing is manufactured to an unparalleled range of sizes that meets the complete needs of the automotive industry, as well as larger sizes for applications in other major market areas.

A Full Range of Value-Added Services

ArcelorMittal Tubular Products offers a number of in-house services that can add value to our automotive tubing products. These include:

- State-of-the-art tube cutting facilities that offer in-line cut-to-length capabilities to tolerances as tight as ± 0.005 ".
- Annealing/stress relieving facilities to impart optimum hardness and ductility for specialized applications.
- Quench and temper heat treating facilities to meet stringent requirements for transmission parts, shafts, axles and other machined automotive parts.
- Stringent efforts to meet customer cleanliness requirements including minimum use of contaminating lubricants, use of synthetic mill coolants, and use of air-drying, rust-preventative oils, and full tube-washing facilities.

An Experienced Staff to Help Develop New Tubing Applications

Today, more than ever before, the automotive industry is turning to tubular products that require minimal processing after delivery. Our engineering staff offers assistance to customers in obtaining the most efficient and cost-effective solutions in design, safety, performance and weight reduction for their products.

One important way is through the development of engineered tubing products. We're often able to provide value-added benefits by identifying critical customer needs and developing new or modified tubular product solutions.

We are backed in this effort by modern test facilities at each plant, which can generate the data required to develop new applications of automotive tubing. Additional research support for new or improved tubing products, modified chemical or mechanical requirements and special service conditions or applications is available through cooperative efforts from our various divisions and our steel partners.

Building Quality Into ArcelorMittal Tubular Products Automotive Tubing

ArcelorMittal Tubular Products's principal manufacturing facilities for automotive tubing are all certified as meeting ISO 9002 quality standards and also hold the automotive industry's demanding QS-9000 certification. The Shelby facility was also awarded approval for the TS16949 quality management system.

A major contributor to our superior quality performance is our use of Statistical Process Control (SPC). Our short-run SPC technology has been accepted by the federal government and was instrumental in achievement of quality certifications.

Extensive testing and inspection programs at each plant include sophisticated in-line equipment and fully equipped metallurgical laboratories. As a result, our automotive tubing products are subjected to a full range of nondestructive and destructive tests, as well as visual and instrumental inspections, to assure strict compliance with customer specifications.

MECHANICAL TUBING BUSINESS

Contact us at one of the following locations.

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