



ArcelorMittal

ArcelorMittal Multi Part Integration[®]



The power of less

ArcelorMittal Automotive



Revolutionary solutions for revolutionary changes

As advances in automotive electrification continue, automotive manufacturers face new requirements and challenges that disrupt established design architectures and manufacturing methods. As the global leader in automotive steel technology, ArcelorMittal is dedicated to helping automotive manufacturers tackle these new challenges with innovative materials and solutions. Most notable is ArcelorMittal Multi Part Integration® (MPI), which aims to simplify manufacturing operations, maintain high flexibility, minimize weight and ensure crash performance while reducing the CO₂ footprint.

Smart simplification for OEMs

Discover the power of less: ArcelorMittal Multi Part Integration® simplifies automotive manufacturing, saving costs and time while boosting efficiency.

ArcelorMittal Multi Part Integration® is a versatile solution that can be tailored to meet the dynamic requirements of original equipment manufacturers (OEMs), providing simplification and efficiency benefits in cost, space and time by reducing the number of parts and processes in assembly.

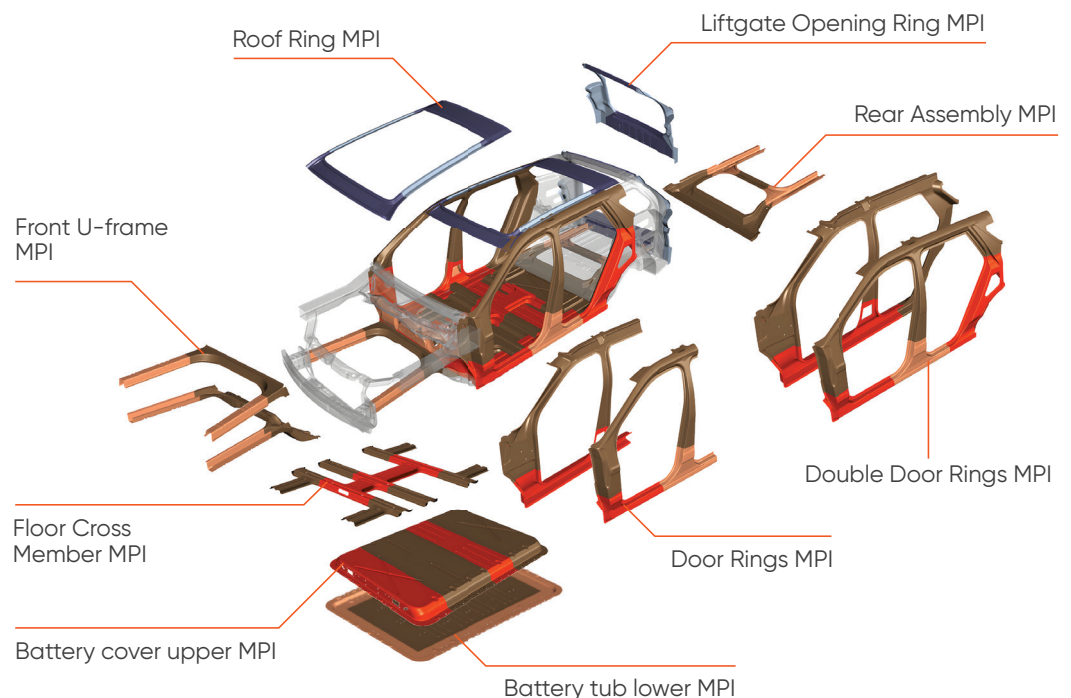
For over a decade, we have recognized part consolidation as an effective strategy for improving efficiency. Our initial success came with the door ring – a Usibor® 1500 laser welded blank (LWB) solution first introduced in North America in 2014. Since

then, we have consistently refined the door ring concept, enhancing its performance with new materials and innovating its design and manufacturing.

We have expanded the concept of part consolidation with a growing portfolio of ArcelorMittal Multi Part Integration® solutions and custom initiatives focused on local design constraints and functional attributes. There is an ArcelorMittal Multi Part Integration® solution for nearly all modules of a body-in-white (BIW). Our catalogue now features numerous solutions offering varying levels of innovation in architecture—both incremental and breakthrough—to address diverse design strategies.

Typical MPI applications

Numerous MPI applications are available and can be tailored to customer requirements.



Analysis proves MPI integration gains are significant

Testing the integration of multiple MPI solutions show investment is worthwhile, reducing parts, welds, floor space and overhead costs.

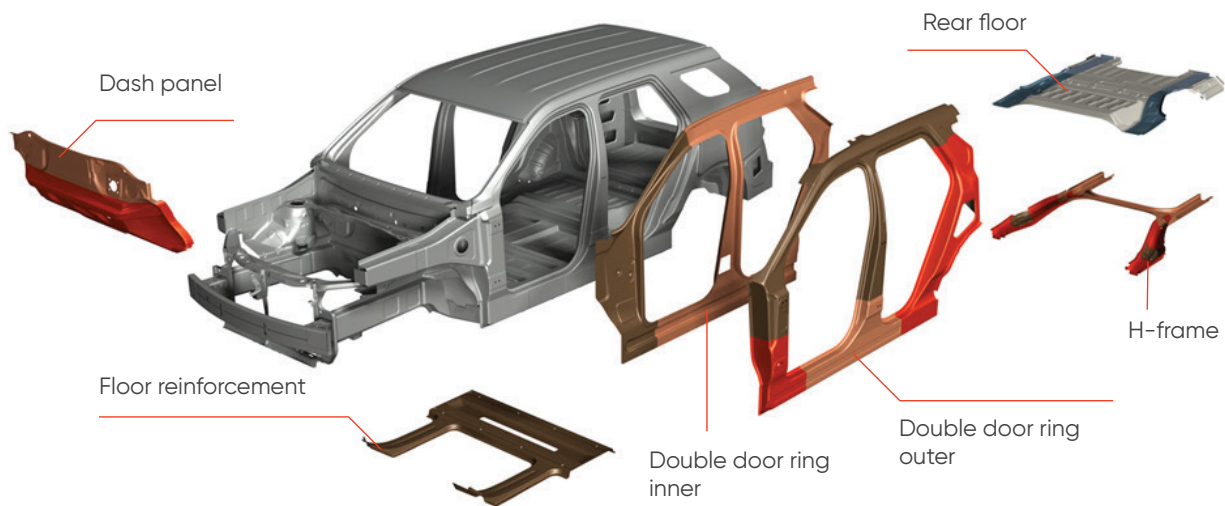
We conducted a holistic analysis utilizing independent and experienced engineering consulting firms that are specialized in automotive production and assembly line setup.

This study demonstrates that the aggregation of MPI maximizes gains. Within the scope of six MPIs covering the full BIW, that included the H-frame, rear floor, double door ring (inner & outer), dash panel and floor reinforcement, we achieved a 75% reduction

in part count and a reduction of 567 spot welds – approximately 10% of the total welds in a BIW. With these changes, our partners redesigned the assembly shop and sequences that demonstrate this allows for a 14% reduction in assembly floor size, a 24% reduction in the number of operators at the assembly plant level and a 10% decrease in capital expenditure.

This robust analysis is applicable across different assembly lines, confirming similar results whether using a pre-assembled body side or sequential body side assembly.

MPI solutions with in-depth manufacturing impact assessment



Impact on the full assembly shop

Operators



Up to 24%
saved

Bodyshop area



Up to 14%
saved

Robots



Up to 8%
saved

CapEx



Approximately
10% saved

Innovation with impact

Advanced high strength steels meet evolving industry demands.

ArcelorMittal, a leading steel supplier for the automotive industry, innovates products and solutions to meet evolving demands of the industry. We developed advanced high strength steels for safer, lighter vehicles and introduced Usibor® and Ductibor® grades to enable high levels of formability at very high strengths. The latest press hardenable steels, Usibor® 2000 and Ductibor® 1000, enhance lightweighting and design efficiency further by offering unparalleled mechanical properties for complex safety critical parts. These grades have paved the way for large MPIs. By combining various properties and crash management scenarios into a single part, we can eliminate design boundaries and integrate multiple crash functions into one piece all without compromising weight.

Driving Decarbonization in the automotive industry with XCarb® and sustainable MPI solutions.

ArcelorMittal prioritizes decarbonization in automotive products through the XCarb® initiative. Usibor® 1500, with over 75% recycled content, is already available as XCarb® Recycled and Renewably Produced (RRP) in Europe and North America and other press hardenable products are on the way. MPI and Laser Welded Blanks promote light weighting and are designed to reduce material consumption which naturally reduce the CO₂ emissions of the solutions. Future products will enhance these benefits, further lowering CO₂ emissions and improving sustainability.

Global presence & expertise

The #1 steel supplier to the global automotive industry for a reason.

ArcelorMittal provides advanced steel solutions worldwide. Operations span Asia, Africa, Europe, and the Americas, supported by a network of engineers and specialists providing cohesive global support to our customers. ArcelorMittal Multi Part Integration® can be produced from our LWB operations in Europe, China, North America, India and Brazil.

Collaboration for excellence

An industry leader in co-engineering efforts.

For decades, ArcelorMittal has collaborated with automotive manufacturers to develop and test steel solutions that reduce lead times and deliver relevant products. With strong knowledge in automotive design, we pride ourselves in being not only a material supplier, but a solutions provider. From the introduction of the first door ring in North America to continued innovation with MPI, we are partnering globally to ensure compatibility of our solutions and validate them with crash, manufacturing and cost modeling. Recent collaborations include working with a Chinese car manufacturer on the H-frame. ArcelorMittal partners with automotive suppliers and hot stamping companies like AP&T and Trumpf to evaluate MPI compatibility and jointly provide a path to mature and production-ready solutions.

ArcelorMittal is structured to provide highly valuable, tailored technical support, drawing on some of the most talented automotive material and application experts who are dedicated to our mission. Customers consistently rate us as the top provider for technology and support across Europe and North America.

Discover the
ArcelorMittal difference.



Explore our advanced materials, success stories, and videos at
automotive.arcelormittal.com/MPI

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