



## The Benefits of Metal-to-Plastic Conversion

Even though metal-to-plastic conversion has been around since the 1950s, many manufacturers are still not familiar with all the benefits it provides.

Automotive and aerospace companies have been most active in converting existing metal products or parts to plastic, driven by the need to reduce weight and improve fuel efficiency. With proper design, engineered plastics <https://www.asme.org/Engineering-Topics/Articles/Applied-Mechanics/Plastic-Arts> can be just as strong as metal. They can also be more chemical-resistant with exceptional heat resistance, making them good choices for fuel systems, fluid handling systems, and other high-temperature applications. Plastics that are engineered to be thermally and electrically conductive can be used as EMI/RFI shields, or in automotive electronics.

Benefits that conversion to plastic can provide are:

- High tensile strength with proper structural design
- Reduced part weight
- Highly repeatable in processing (less scrap)
- Lower manufacturing costs
- Enhanced regulatory compliance
- Greater design flexibility (part consolidation)
- Lower packaging and shipping costs
- Up to six times longer tool life.

Current metal-to-plastic trends focus on reducing weight, improving strength and corrosion resistance, and consolidating multiple metal parts into one plastic part. Plastic parts can be just as tough as metal parts and achieve the same tight tolerances, with fewer secondary operations. In general, companies can expect to achieve an overall cost savings of 25% to 50% by converting to plastic parts.

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