

LIGHTWEIGHTING SOLUTIONS

To Reduce Your Costs and Increase Performance

Since the development of High-Strength Low-Alloy steel grades, steel manufacturers have taken advantage of increased tensile strengths to reduce required part thicknesses.

Ultra High Strength Steel (UHSS) grades are now available from Grade 100 - 160 and martensitic grades. Abrasion-resistant grades are available up to AR500.

POTENTIAL BENEFITS

- **Market Differentiation:** Lightweighting provides an opportunity to stand out in the marketplace against competitors.
- **Operational Ease:** Advanced grades are compatible with welding, forming, and cutting.
- **Transportation Cost:** Lighter parts means the ability to ship more parts per truck.
- **Safety:** Reduce workplace hazard by making parts lighter to move.

Other considerations

Although the yield strength and tensile strength will increase when switching to a higher grade, the elastic modulus will remain the same. This means that thinner parts may require stiffeners to be designed into the fabrication.



INCREASED PAYLOAD

A lighter fabrication allows for more space, more weight and more productivity.



IMPROVED FUEL EFFICIENCY

Reduce the overall mass without sacrificing strength to lower fuel requirements.



REDUCED CARBON FOOTPRINT

Go green by lightweighting to reduce carbon emissions.



BETTER PERFORMANCE

Lightweighting reduces stress in existing components; extend longevity and get more from your investment.

Net Savings by Lightweighting

	Price	Weight	Net Savings
Grade 50 (0.42")	3%	-16%	13%
Grade 80 (0.33")	10%	-34%	24%
Grade 100 (0.30")	14%	-40%	26%
Grade 130 (0.26")	40%	-48%	8%
Grade 160 (0.24")	60%	-52%	-8%

Base: A36 (0.50")

