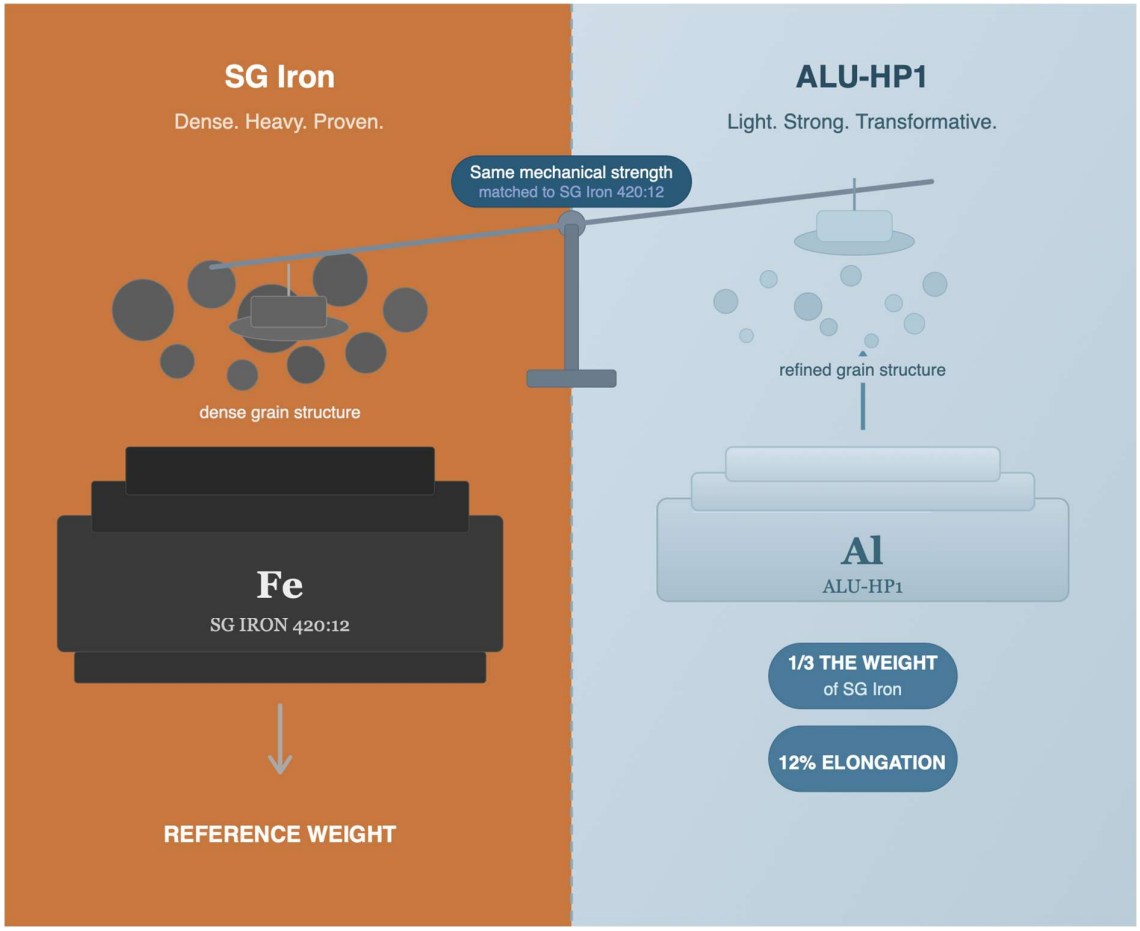
ALU-HP1: The High-Strength, Lightweight Revolution
Iron Strength at One-Third the Weight

The Innovation: Breaking the Iron Mold

At AluCast, we've developed ALU-HP1, an advanced high-strength alloy designed to revolutionize the transport sector. For decades, the industry has relied on SG Iron for its durability but at the cost of extreme weight.
Our solution is simple but transformative: A proprietary alloy that matches the mechanical properties of SG Iron 420:12 while providing a lightweight, high-performance alternative.

- **Targeted Weight Reduction**: Drive energy savings and cut greenhouse gas emissions by reducing carriage weight to suit track conditions.
- **VLR Optimized:** Specifically developed to help Very Light Rail (VLR) improve energy efficiency.
- **Design Consolidation**: We help customers streamline designs by combining welded fabricated assemblies into a single casting, eliminating the need for multiple components and costly assembly work



The AluCast Advantage: Unified Capability

We are the only UK aluminium foundry offering four casting processes High Pressure, Low Pressure, Gravity, and Sand Casting all on a single site. From prototyping to high production runs, we provide a complete, finished solution.

- **Proven Pedigree**: A 58-year-old foundry that has supplied everything from Bugatti Veyron brake calipers to parts for the Olympic torch.
- **Military Grade**: ALU-HP1 is already utilized in US military vehicles through the sand-casting process.
- **Accredited Excellence**: Proudly IATF 16949, ISO 9001, and ISO 14001 accredited.

The Technical Edge: Verified R&D

Our technical team utilizes **Magmasoft casting simulation** to ensure structural integrity and "right first time" design. We have advanced ALU-HP1 from sand-casting into **gravity and low-pressure methods**, refining microscopic grain sizes to increase strength.

Property	Target	Current Achievement
Mass	1/3 of Iron	**Achieved**
Mechanical Properties	Match SG Iron 420:12	**Verified**
Elongation	12%	**10.7%** (and rising)

See the Strength in Action

We don't just forecast results; we prove them. Our team has conducted live tensile testing demonstrations at the Black Country Innovation Manufacturing Organisation (BCIMO).

- **Verified Data:** Experience our verified reference datasets for proof stress and ultimate tensile strength.
- **Design for Manufacture**: Our technical team assists in developing initial concepts into cost-effective production components.



Get in Touch

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