Silafont®-38
[AlSi9MnMgZn]

RHEINFELDEN
Solutions thru Innovation

Silafont®-38 The ultra-high strength HPDC alloy for very light automotive structural parts

Worldwide available new primary aluminum HPDC alloy with excellent mechanical properties after heat treatment T6 and cooling at moving air.

Outstanding mechanical properties for use in thin-walled, high-strength cast parts like vehicle structural parts.
Very high yield strength $Rp_{0.2}$ in conjunction with very good values for the elongation.

Treatment condition	0.2% YTS	UTS	Elongation A
F	140 - 160 MPa	270 - 300 MPa	3 - 7%
T6 (water)	230 - 260 MPa	300 - 345 MPa	6 - 9%
T6 (air)	180 - 200 MPa	250 - 275 MPa	8 - 10%

- **Further development of the well-known *Silafont®-36*** for use in ultra-high strength and crash-relevant structural parts in the automotive industry.
- **Primary aluminum HPDC alloy with low Fe content.**
  Strontium-permanent modification for very high yield strength and good ductility.
- **"Low distortion" T6 heat treatments with cooling in moving air** could be realized.
  (Cooling rate after solution treatment: At least 3.5 to 4.5 °C/sec, cooling to < 200 °C).
- **Excellent dynamic fatigue strength** and highly resistant to stress corrosion cracking.
- **Very good resistance to ageing** under the influence of heat.
- **Very suitable for applications in vehicle constructions.**
  Heat treatable to high elongation and high energy absorption capability.
- **Replaces steel sheet constructions in vehicle designs.**
  Significant cost and weight reductions are realizable, together with improved function integration and enhanced vehicle rigidity.
- **Allows weight reductions of up to 40%**
  compared to die casting standard constructions in the field of vehicle structural parts.
- **Excellent machinable and very good suitable for welding and bonding processes.**
- **Very suitable for riveting** with applicable riveting processes and tools.
- **Very good corrosion resistance:** Coatings are often unnecessary.
- **Excellent castable HPDC alloy:**
  Solidification range, shrinkage behavior and expected die casting die endurance are comparable to that of AlSi9 and AlSi10Mg alloys. Best mould release: No sticking to the die.
- Excellent castable for castings with wall thickness from 1.5 mm.

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New alloy developments made as technology progresses after printing are included in later versions.

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