Magsimal®-plus
[AlMg6Si2Mn]

RHEINFELDEN
Solutions thru Innovation

Magsimal®-plus *High-Tech aluminium HPDC alloy for Light Weight Design in Automotive Structural Application*

HPDC alloy with very high mechanical and extraordinary high dynamic properties within thin wall design in the as cast state.

Mechanical properties in the as cast state F:

Wall thickness	YTS $R_{p0,2}$	UTS R_m	Elongation A
2 - 4 mm	190 - 230 MPa	310 - 355 MPa	8 - 13%
4 - 6 mm	160 - 200 MPa	280 - 340 MPa	9 - 14%

Mechanical properties in temper T5:

Wall thickness	YTS $R_{p0,2}$	UTS R_m	Elongation A
2 - 4 mm	210 - 245 MPa	320 - 370 MPa	8 - 12%
4 - 6 mm	180 - 225 MPa	300 - 360 MPa	9 - 13%

- **Magsimal®-plus is an AlMg high pressure die casting alloy with excellent mechanical properties for structural parts in the BIW of vehicles.**
- **The high strength of Magsimal®-plus enables very thin lightweight designs. A weight reduction up to 40% in comparison to an AlSi10MnMg design may be achieved.**
- **No T6 or T7 heat treatment required:**
  Cost cutting is possible due weight reduction of the cast and due skipping heat treatment and straightening after heat treatment's distortion.
- **Excellent resistance to sea water atmosphere.**
  Protective coatings are often unnecessary.

- **Advanced application range for casts in the as cast state F.**
- **Very suitable for applications in vehicle designs:**
  Excellent energy absorption capacity in the event of a vehicle crash or impact to battery trays and covers,
- **Substitution of complex steel sheet designs in vehicle designs is possible.**
- **Substitution of aluminium forgings in vehicle designs is possible.**
- **Excellent weldable,** with welding technique similar to 5xxx-series.
- Well suitable for self-piercing riveting, clinched joints and adhesive bonds.

- **Very high resistance to stress corrosion cracking.**

- **The casting of Magsimal-plus requires special know-how in the field of die design, melting and casting technique.**

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IMPRINT:

The composition of the alloy Magsimal-plus is patented by RHEINFELDEN ALLOYS GmbH & Co. KG

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