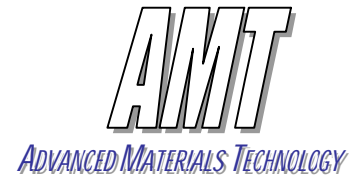


Magnesium alloys

Category:

Very high strength



Magnesium-alloy Mg-SF42Ca

Magnesium alloy MG-Sf42Ca high strength Magnesium alloy processed via spray forming. The base alloy is a modified Mg-AE42 alloy plus Calcium. Mg-SF42Ca shows excellent strength levels and good ductility. Due to the spray forming process the strength is significantly higher compared to conventional Magnesium alloys. Very important too is the fact that the spray forming process results in a fine and uniform microstructure.

The Rare-Earth elements do not cluster together. This is one of the main sources for fatigue cracks in conventional Magnesium-Rare-Earth alloys.

General properties

- High strength
- High fatigue strength

Comparison with Standard alloy ZK60

- | | |
|-----------------------|-------------------|
| Advantages: | - Higher strength |
| | - High toughness |
| Disadvantages: | - More expensive |

Chemical Composition: Mg-4Al-0.5Mn-2RE-0.05Si+Ca

Mechanical properties

| | UTS | YS | Elong. |
|------------------|------------|-----------|---------------|
| | MPa | MPa | % |
| Mg-SF42Ca | 423 | 381 | 9,0 |

Physical data

Density: 1.84 g/cm³
CTE: 26x10⁻⁶
E-Modulus: 44 GPa

Applications

- Structural parts
- High strength Magnesium parts to replace Aluminum alloys

Delivery form

- Bars, Extrusions