Aluminum alloys

Category:
Very high strength, high toughness

Aluminum-alloy Al-YB60

Aluminum alloy Al-YB60 is a high strength Aluminum alloy processed wrought metallurgy. Due to the addition of Ytterbium it shows high strength and fracture toughness levels.

General properties

- High strength
- Temperature stability
- High fatigue strength

Comparison with Standard alloys A7075

|                     | UTS  | YS  | Elong. | K_{isc}
|---------------------|------|-----|--------|--------
|                     | MPa  | MPa | %      | MPa*m^{1/2}
| A7075-T651          | 538  | 462 | 6.0    | 17     |
| Al-YB60             | 723  | 696 | 10.1   | 26     |

Advantages:
- Higher strength
- High temperature stability
- High toughness

Disadvantages:
- Expensive

Chemical Composition: Al-8.6Zn-2.5Mg-2.2Cu-0.16Zr-0.30Yb

Mechanical properties

Physical data

Density: 2.84 g/cm³
CTE: 23x10^{-6}

Applications
- Structural parts
- Airframe parts
- Automotive parts

Delivery form
- Bars, Extrusions