



Thermodur[®]-72 *The heat-resistant HPDC alloy for high strength ductile work pieces*

Heat-resistant primary aluminum HPDC alloy with very good ductility and fatigue strength at as cast state F.

Superior high temperature strength at as cast state:

Very stable mechanical properties at temperatures above 200 °C.

Ageing temperature	Ageing time	0.2% YTS	UTS
20 °C	---	190 - 220 MPa	350 - 380 MPa
150 °C	500 h	220 - 245 MPa	260 - 290 MPa
225 °C	500 h	150 - 175 MPa	180 - 205 MPa

(tested at ageing temperature!)

Elongation A: 7 - 20 % Hardness: 80 - 100 HB

- **Well suited for applications with very high ambient temperatures and high demands on ductility:** Applicable for high thermal load work pieces with increased demands on the dynamic fatigue strength, for example in engine constructions and engine components (e.g. components for exhaust gas turbochargers), general mechanical engineering, shipbuilding, chemical industry.
- **Very good dynamic properties.**
High fatigue strength, comparable to that of AlMg5Si2Mn alloys.
- **No T5, T4, T6 and T7 heat treatment required.**
Additional costs for heat treatment of a usual AlSi10Mg alloy could be saved.
- **No blistering and no distortions at casted parts.**
Costly straightening processes after heat treatment processes can be avoided.
- **Substitution of thermally highly stressed steel sheet structures possible:**
Both cost and weight reduction as well as increase in stiffness is realizable, together with improved function integration.
- **Excellent corrosion resistance:** Coatings are often unnecessary.
- **Excellent resistance to sea water atmosphere.**
- **Excellent resistance to stress corrosion cracking.**
- **Very good castable HPDC alloy** for thin-walled castings from 2.0 mm wall thickness.
- **Excellent machinable and weldable.**
- **Further increase in ductility by up to 20% by single-stage heat treatment is possible:**
(depending on the quality of cast pieces and casting wall thickness)
State O = annealing 350 °C to 380 °C / 30 min / cooling at air



DISCLAIMER:

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

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