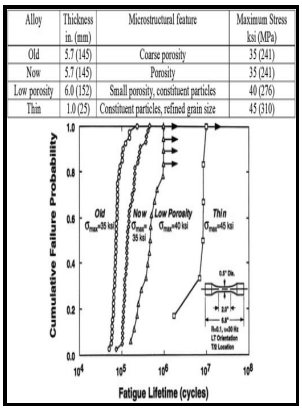
Fatigue behaviour of two high specific modulus aluminium materials

University of Birmingham - AlBeMet



Alloy	Thickness in. (mm)	Microstructural feature	Maximum Stress ksi (MPa)
Old	5.7 (145)	Coarse porosity	35 (241)
Now	5.7 (145)	Porosity	35 (241)
Low porosity	6.0 (152)	Small porosity, constituent particles	40 (276)
Thin	1.0 (25)	Constituent particles, refined grain size	45 (310)

Description: -
-Fatigue behaviour of two high specific modulus aluminium materials
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Fatigue Behavior

The other properties can be more or less affected. The nominal maximum values that cause such damage may be much less than the strength of the material, typically quoted as the , or the. Small cracks can be blended away and the surface cold worked or shot peened.

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The results for 2091 have been superior to those for 2024, roughly equivalent to those for 2024, or inferior to those for 2024. It was found that up to 6 MPa the composites were able to survive 10 6 cycles. Massimo Manfredini Bonfiglioli Industrial Gearmotors, Bologna, Italy Commercial aluminum-lithium alloys are targeted as advanced materials for aerospace technology primarily because of their low density, high specific modulus, and excellent fatigue and cryogenic toughness properties.

Aluminum

This can be thought of as assessing what proportion of life is consumed by a linear combination of stress reversals at varying magnitudes.

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Inertia-driven friction welding parameters of two 25 mm 1 in.

Fatigue Behavior

Striations are a result of plasticity at the crack tip. Although fatigue testing on 2091 has been done by a number of labs, producers, and users, the results have been difficult to interpret.

Fatigue crack growth resistance and crack closure behavior in two aluminum alloys for aeronautical applications

All these properties vary with the stress amplitude, stress ratio, stress concentration factor, and the environment. Aluminium-beryllium metal matrix composite combines the high modulus and low density characteristics of beryllium with the fabrication and mechanical property behaviors of aluminium. The microstructure of 2091 varies according to product thickness and producer; in general, gages above 3.

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