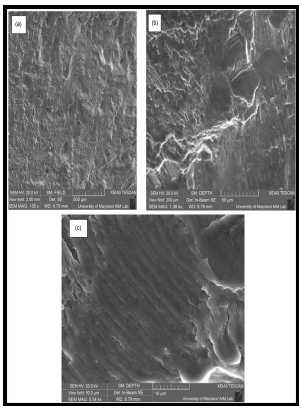
Fatigue behaviour of two high specific modulus aluminium materials

University of Birmingham - AlBeMet



Description: -
-Fatigue behaviour of two high specific modulus aluminium materials
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They are also measured under variable amplitude loading using specimen configurations representative of service conditions. Processing and microstructural modifications to eliminate these sites can improve fatigue lives to some extent. For thinner products, the threshold varies by gage and producer; it may be as low as 50 to 60% of the yield strength or as high as 75% of the yield strength.

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Four regimes of fatigue crack growth. Development of aluminum-lithium alloys in the UK. As mentioned before, aluminium structures are very interesting for structural applications, but the interface between aluminium-adhesive is severely weakened when subjected to moisture.

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

Alloy 2091 Chemical composition: Cu - 2. Changes in strength and toughness at cryogenic temperatures are more pronounced in 8090 than in conventional aluminum alloys: 8090 has a substantially higher strength and toughness at cryogenic temperatures. He concludes that cyclic stress range is more important than peak stress and introduces the concept of endurance limit.

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

Over the last few decades, numerous researchers have provided detailed reviews Andrews, 1969; Beardmore and Rabinowitz, 1975; Sauer and Richardson, 1980; Sauer and Hara, 1990; Hertzberg et al. Paris Law consists of three regions: the first Zone 1 where crack initiation occurs, the second Zone 2 where stable crack propagation happens, and lastly Zone 3 where failure of the joint takes place. Standard methods for measuring the rate of growth have been developed by ASTM International.

Fatigue Behavior

Submitted may offer the final explanation: while in the unaged stage Nagase XNR 6852-1 and SikaPower 4720 have a T g of 120 °C and 100 °C

respectively, in the saturated stage Nagase XNR 6852-1 drops to 100 °C and SikaPower 4720 drops to below room temperature.

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