

In-Situ Quasistatic Compression and Microstructural Characterization of Aluminium Foams of Different Cell Topology

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Abstract : Quasistatic compression and micro structural characterization of closed cell aluminium foams of different pore size and cell distributions has been carried out. Metallic foams have good potential for lightweight structures for impact and blast mitigation and therefore it is important to find out the optimized foam structure (i.e. cell size, shape, relative density, and distribution) to maximize energy absorption. In this paper, we present results for two different aluminium metal foams of density 0.5 g/cc and 0.7 g/cc respectively that have been tested in quasi-static compression. The influence of cell geometry and cell topology on quasistatic compression behavior has been investigated using computed tomography (micro-CT) analysis. The compression behavior and micro structural characterization will be presented.

Keywords : metal foams, micro-CT, cell topology, quasistatic compression

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