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**Title:** DYNAMIC AND QUASI-STATIC COMPRESSION TESTS OF CLOSED-CELL ALUMINIUM ALLOY FOAMS**Author(s):** Linul, E (Linul, Emanoil); Marsavina, L (Marsavina, Liviu); Kovacic, J (Kovacik, Jaroslav); Sadowski, T (Sadowski, Tomasz)**Source:** PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE **Volume:** 18 **Issue:** 4 **Pages:** 361-369 **Published:** OCT-DEC 2017**Times Cited in Web of Science Core Collection:** 3**Total Times Cited:** 3**Usage Count (Last 180 days):** 0**Usage Count (Since 2013):** 1**Cited Reference Count:** 25

**Abstract:** A mechanical characterization of closed-cell aluminium foams (AlSi12Mg0.6) prepared by powder metallurgy route under quasi-static and dynamic compressive loading was investigated. Cellular structure of some samples was evaluated using computer image analysis prior compression tests. The experimental tests were carried out on half-cylindrical specimens with surface skin in the density range of 350-550 kg/m<sup>3</sup> (Note: one half of cylindrical specimen was used for quasi-static tests and other one for dynamic tests, thus having almost identical structure). The compression tests were performed with crosshead speed of 1.67.10<sup>-4</sup> m/s for quasi-static and 3.72 m/s for dynamic tests. Based on the experimental data, a linear correlation between quasi-static and dynamic compressive strength at 20% and 50% strain is proposed. Obvious connection between strain rate, some properties of stress-strain curve and microstructure was observed.

**Accession Number:** WOS:000418158300010**Language:** English**Document Type:** Article**Author Keywords:** aluminium foams; quasi-static/dynamic compression tests; mechanical properties**KeyWords Plus:** METALLIC FOAMS; STRAIN-RATE; PUR FOAMS; FRACTURE; BEHAVIOR; ENERGY; BEAMS**Addresses:** [Linul, Emanoil; Marsavina, Liviu] Politehn Univ Timisoara, Dept Mech & Strength Mat, 1 Mihai Viteazu Ave, Timisoara 300222, Romania.

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