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Shock Propagation through Macro-Pore Engineered Foams YONGHO KIM, J. M. SMIDT, T. J. MURPHY, M. R. DOUGLAS, T. CARDENAS, D.W. SCHMIDT, C. HAMILTON, Los Alamos National Laboratory — Shock propagation through macro-pore engineered foams has been studied to examine (1) if the pore size affects shock speed and (2) if spherical geometry of the void may induce turbulence. In the first experiment, three types of macro-pore engineered foams (<1, 50, and 90 um in diameter) were used in shock tube experiments driven by the Omega laser. X-ray radiographic data indicates that shock speed through macro-pore engineered foams depends strongly on foam density, less on pore size. In the second experiment, a single foam-filled "void" in a diameter of 250 um was shocked by two opposing planar shocks, which were separated by 6.4 ns. While the first shock compressed a spherical foam-void without much turbulence, the second shock seems to increase a turbulent motion.

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