

# **EXPERIMENTAL INVESTIGATION OF THE MECHANICAL PROPERTIES OF ALUMINUM FOAM UNDER DYNAMIC LOAD**

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Aluminum foams can be used as energy absorbing layers for blast loading or for impact loading. This paper presents the mechanical properties of Cymat SmartMetal™ Aluminum foam for different strain rate loading.

The research was conducted at the laboratories of the Protective Technologies Research and Development Center of Ben-Gurion University. The experiments were performed in several apparatus, in order to get different strain rates – compressing machine for static loading, Impact Pendulum and Spring Impactor for low level strain rates and shock tube for medium level strain rates. The experiments were done for several foam densities.

High speed photography was used in all experiments, in order to better understand the behavior of the aluminum foams.

The results of the experiments were used to obtain the strain-stress behavior of the foams and the effects of foam density and strain rate loading.