

## Transparent Armor

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### ABSTRACT:

Although transparent armor is widely used in the world today a complete understanding of the physics that occurs during high velocity impact is yet to be obtained. The purpose of this project is to gather data from projectiles impacting transparent armor under varying conditions. This is done by firing a .50 caliber fragmentation simulating projectile or FSP at a target consisting of glass, lexan, and aluminum. The data collected includes the mass and diameter of the FSP before and after firing, as well as the mass of the charge and the projectiles initial velocity. The most important piece of data obtained is the residual penetration of the projectile into the aluminum block on which the transparent armor was mounted for testing. These residual penetration depths can be compared to one another when the experimental variables such as armor thickness, or shot location are changed. By changing the experimental variables and repeatedly testing trends can be seen in how the armor behaves and reacts when impacted.

KEYWORDS: residual penetration

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