A STUDY OF THE HIGH SPEED MULTI-LAYERED TARGET PENETRATION BY A TUNGSTEN HEAVY ALLOY PROJECTILE

C. S. Lee[1], Y. H. Yoo[1], S. B. Kim[1]

[1]*Agency for Defense Development, Yuseong, Daejeon, 305-600, Republic of Korea*

ABSTRACT

In the present study, the high speed penetration performance of tungsten heavy alloy projectile through multi-layered steel plates was investigated both experimentally and numerically. In the experiment, 5 steel plates with 10 mm thickness were placed in every 70 mm. The targets were impacted by using a propellant gun at striking velocity of approximately 2.5 km/sec.

The perforation size and shape were observed in order to evaluate penetration performance of the projectile. In addition, a nonlinear 3-dimensional numerical simulation was implemented using LS-DYNA software to compare with the experimental results. In general, good agreement was obtained between the experimental and simulation results.