

Pressure Measurements at Impact of Kinetic Energy Munitions

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Non-lethal kinetic munitions have been used in police units and armed forces throughout the world for several decades.

As a consequence of the new scenarios in which parts of the German Armed Forces are deployed, a non-lethal round based on the momentum and energy imparted to the target was introduced for anti-riot purposes and has performed very satisfactorily until now.

This means that the physical effects upon the person struck by the projectile are sufficient to make an attacking person incapable of any further aggressive action, while not seriously injuring it.

In order to obtain more precise and, above all, some quantitative data concerning the physical phenomena occurring during the terminal ballistic phase, several methods and sensors to determine the pressure distribution on the contact surface between projectile and target during their interaction following impact are analysed.

The final purpose of the studies is to define a standardized experiment that serves to compare other types of non lethal ammunition based upon kinetic energy with the mentioned proven type, the latter being used as a reference.

Furthermore, the physical parameters, as pressure distribution and pressure gradients, could be compared with those associated with more common incidents, and their real consequences, as traumata following an accident, in order to draw conclusions concerning the physiological consequences of the impact.

Stichwörter / key words: kinetic energy, pressure, impact, comparison.