
Assessment of an equivalent projectile for the evaluation of the Behind Head Blunt Trauma

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Abstract

The purpose of this article is to evaluate an equivalent projectile giving the same effects as the Back Face Deformation (BFD) of a helmet impacted by bullet. Several tests are presented to evaluate the Behind Head Blunt Trauma (BHBT). First results on a classical aramid helmet are developed against 9mm bullet (NIJ01.0104 Level IIIA). Two kind of measurements are exploited: deformation of a clay head form using plastilina Herbin Sueur and a head surrogate with force sensors developed by BioKinetics (BLSH). Those results permit to give the Blunt Criteria (BC), and the AIS score, for the scenario of impact. In a second time, some equivalent projectiles are used against plastilina Herbin Sueur and the BLSH and compare to the realistic shots on helmet.

Keywords: BHBT, NIJ, IIIA, Helmet, 9mm

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