

BLAST AND SHOCK QUANTIFICATION IN VARIOUS MEDIA AND ITS APPLICATIONS

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The detonation of high explosive in a medium release large amount of energy in a small time and volume. This rapid release of energy at supersonic speed compresses the adjoining medium and creates a pressure wave called the blast/shock wave. The strength of blast/shock wave generated at explosive media interface and away from the point of explosion depends upon the characteristic of the medium. . For a rare and highly compressible medium like air, it attenuate rapidly as it diverges out from the point of explosion. On the other hands, if the medium surrounded the point of explosion is dense and highly incompressible the shock wave propagates outwards with much less attenuation. The quantitative measurement of strength of blast/shock wave at a point in medium is of utmost important as it defines the amount of energy release due to explosion .This data is used for damage evaluation, design validation, design modifications and comparative blast/shock performance evaluation of ammunition on one side and on the other side design of protective systems and structures. So the accurate measurement of strength of blast/shock wave is a biggest challenge for the scientist and engineers working in the field of blast and damage studies. The paper presents the measurement techniques and technologies used in quantitative measurement of strength of explosion in various media like water, air and below the surface of ground and its applications.