

Blast load assessment: RC wall subjected to blast load

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ABSTRACT

The evaluation of the pressure produced by blast load on the structure surface and selected location around with the aid of hydrocodes is studied in this paper. The existing knowledge of predicted blast pressure has been embraced in this paper for initial design in engineering application. The acquired blast parameters from numerical results are compared with blast test data and empirical methods. Besides the comparison, the effects of mesh distribution and air volume size on pressure are also studied. The numerical simulation initially conducted in 3D free air explosion and followed by the consideration of an obstruction structure on the blastwave propagation. The numerical peak incident overpressure indicated, the pressure of 0.51 MPa at 4.62 msec is approximates the overpressure recorded in the explosive test carried out at Fort Leonard Wood Army Base. It is revealed numerically, the overpressure at the bottom part on the wall surface experienced the higher overpressure.

KEYWORDS:

Blast load Assessment; RC Wall; Aid of hydrocodes