

## **Blast effects on underground pipes**

### **Abstract**

This paper has outlined the static and dynamic responses between the various components of blast which are blast load, ground media, pipes, and the intervening layer. Response of linear models of buried pipes due to surface static load was studied using ABAQUS code and results compared with that of SAP code. In addition, using UFC (2008), blast wave parameters for 50kg TNT in different pipes were obtained. Furthermore, response of buried pipes due internal explosion for the same explosive was equally studied. Equivalent earthquake parameters on ground surface for the same explosive were obtained and compared with San Fernando earthquake of 1971. Analytical method cannot provide accurate result owing to its limitations. However, numerical methods considered by modeling for solving linear and non-linear as well as dynamic equilibrium equation are Newton and central difference methods. The solutions to the dynamic equations using these numerical methods are achieved using ABAQUS and Sap codes. © 2010 ejge.