

33-43 Deformation of steel pipe under explosive loading

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This paper presents the experimental study and numerical analysis on the application of explosive welding technique to the field of the urgent repair of gas and water pipe networks. The essential parameters related to the explosive welding are scrutinized from the point of view of minimizing the damage to the steel pipe after welded explosively with a flyer plate. The relationship between the damage distance, amount of explosive, thickness of flyer plate and charge conditions has been determined by a series of the explosive welding tests. Moreover, the deformation of pipe was numerically analyzed. Based on those results, the optimum conditions for the explosive welding of the pipe were found.

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