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## A Continuous Resistance Wire Probe Method for Determining the Critical Diameter and Thickness of Commercial Explosives

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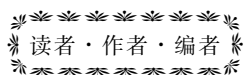
**Abstract:** To quantitatively determine the critical diameter and critical thickness of commercial explosives, a continuous resistance wire probe used to measure the velocity of detonation wave and shock wave was developed by ourselves. Using powdery ammonium nitrate/fuel oil (ANFO) as the test object, two kinds of charge forms of unconstrained cone-shaped charge and semi-constraint wedge-shaped charge were designed. The change curves in detonation velocity of the powdery ANFO under the two kinds of constrained conditions were measured and obtained by single experiment, then the corresponding critical diameter and critical thickness could be calculated. Results show that the critical size of powdery ANFO raises with the increase of explosive density. The average critical diameter of the explosive with the density of  $0.67 \text{ g} \cdot \text{cm}^{-3}$  under unconstrained condition is 17.52 mm, and the critical thickness is 7.06 mm when the bottom steel plate is constrained.

**Key words:** non-ideal detonation; diameter effect; continuous pressure-conducted probe; critical size

**CLC number:** TJ55; O381

**Document code:** A

**DOI:** 10.11943/j.issn.1006-9941.2018.07.012



## 更正

由于作者疏忽,2018年第6期537页,左蓓璘一文的作者单位名有误,更正为:

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