Influence of Temperature on Internal Quality of Pressed RDX-based PBX

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Abstract: To solve the cracks in the pressing process of RDX-based PBX (polymer bonded explosive), the influence of pressing temperature, cooling rate and heating rate on quality of *Φ*60 mm×60 mm RDX-based PBX were studied with ultrasonic, X-ray, and density detection. Results show that the number of cracks in the PBX diminish or eliminate when the cooling temperature is higher than 45 ℃, and the cooling and heating rates are less than 5 ℃ · h^{-1} in compaction process. Moreover, increasing pressing temperature improves the machining and pressing quality of the PBX.

Key words: engineering mechanics; RDX; polymer bonded explosive (PBX); cracks; pressing; cooling rate; heating rate
CLC number: TJ55; TB33 **Document code**: A **DOI**: 10.11943/j.issn.1006-9941.2015.01.010

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