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中深孔爆破分层装药分层填塞研究

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摘要 以两个装药层为例阐述中深孔爆破中分层装药分层填塞的基本原理以及炸药单耗对分层装药结构和爆岩块度的影响，并借助爆炸应力波理论和爆生气体膨胀理论分析合理进行分层装药分层填塞对于中深孔控制松动爆破爆炸效果的影响。分层装药分层填塞技术在大窑湾二期工程采场的实际应用表明：进行合理的分层填塞分层装药能够改善装药结构、提高炸药能量利用率、获得理想的破碎块度，同时也表明中深孔爆破中分层填塞应充分考虑各层炸药单耗这一原则应用的合理性。此原则对药包布置、改善能量分布、优化爆破设计、提高爆破质量有一定的指导意义。

关键词 岩石力学；中深孔爆破；分层填塞；爆破参数；炸药单耗

分类号

STUDY ON THE LAYERED CHARGING AND LAYERED TAMPING FOR MEDIUM AND DEEP HOLE BLASTING

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Abstract

The basic theories of layered charging and layered tamping and the influences of explosive specific charge on distribution of explosive rock blocks for medium and deep hole blasting are discussed. Meanwhile the blasting wave theory and swelling blasting gas theory are applied to analyze the influences of layered charging and layered tamping on the blasting effect for controlled blasting of medium and deep hole. The successful application in the second-stage project of Dayaowan demonstrates that layered charging and layered tamping reasonably can improve the structure of charges，increase the utilization efficiency of explosion energy and make the distribution of block size perfect and that the rationality of explosive specific charge must be considered adequately in the structure of layered charging and layered tamping for medium and deep hole blasting. The principles obtained are expected to be useful for layout of charges，improving distribution of energy，optimizing blasting design and improving blasting quality.

Key words rock mechanics；medium and deep hole blasting；layered tamping；blasting parameter；explosive specific charge

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