



The comprehensive mechanical mining technology of thin coal-seam under the complex geological condition

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Abstract

Because of the comprehensive geological conditions of thin coal seams, many fractures and hard top trays, we should adopt comprehensive mechanical mining technology. Only if we do this, we can obtain high yield and efficiencies and receive successful experience as well as better economic benefits to accumulate massive experience for Fengfeng mining area and others.

Key words: *Thin coal seam, Comprehensive mechanical mining, Mine pressure, Power shearer, Economic benefits*

1. Introduction

With the gradually growing of coal output and demand, the thick coal seam of old mining areas reserve scarce resources. Therefore, the enterprises have begun to cast their eyes on the thin coal seams that they are unwilling or unable to mine in the past as well as no benefits to return. Because of the character of thinness, many coal mines begun to research on the comprehensive mechanical technology to improve the stoping efficiency of thin coal mines. In accordance with their respective conditions, the comprehensive mechanical mining equipments were used (Zhou *et al.*, 2004; Li *et al.*, 2005) at the same time successful experience were also made (Sheng *et al.*, 2007; Guo, 2007). In Fengfeng, xiaotun mining area of 14.459m² is made to be a trial basis. We

made bold reform and innovation for the thin mining seams, which provided a referential example for the comprehensive mechanical mining under the under complicated geological conditions of hard roofs and floors.

The comprehensive mechanization mining technology of thin Coal-seam was studied in Fengfeng mining area. The results were given as follows. First, limited resource was efficiencially recovered. Second, the efficiency of production was improved. Third, the safety of the production was more ensured. Forth, the life cycle of the mine was prolonged. Fifth, the distribution of the primitive litho static stress was changed, and the coal seam which has high gas-bearing capacity was made to bring about being out of shape to a certain extent, which not only made the released effect of the firedamp improve, but also the difficulty of exploitation reduce. Therefore, it has important practical and far-reaching significance.