

Coupled Study on Support Conformability and Overlying Structure of Fully Mechanized Face and Large Mining Height



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Abstract: Taking the 12401 fully mechanized face of Shangwan colliery in Inner Mongolia as research object, the hydraulic support working resistances during small and big periodic weighting of large mining height were deduced and calculated. Separation development of stope roof overburden was simulated by 3DEC, supporting intensity with subsided or horizontal displacement was studied by FLAC3D. Research showed that hydraulic support reasonable working resistances during small and big periodic weighting of large mining height were respective 10442KN and 17064KN. Roof overburden of large mining height was destroyed up to surface because main and inferior key strata were existed and broken. As long as supporting intensity was more than 1.2MPa, horizontal displacement of coal wall was gradually decreasing with increasing supporting intensity.

Key words: large mining height, small periodic weighting, big periodic weighting, stope overburden separation, coal rib spalling

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