

UNDERGROUND MINING METHODS AND EQUIPMENT

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Keywords: Mining method, underground mining, room-and-pillar mining, sublevel stoping, cut-and-fill, longwall mining, sublevel caving, block caving, backfill, support, ventilation, mining machinery, excavation, cutting, drilling, loading, hauling

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Summary

The first section gives an overview of underground mining methods and practices as used commonly in underground mines, including classification of underground mining methods and brief explanations of the techniques of room-and-pillar mining, sublevel stoping, cut-and-fill, longwall mining, sublevel caving, and block caving. The second section describes underground mining equipment, with particular focus on excavation machinery such as boomloaders, coal cutters, continuous miners and shearers.

1. Underground Mining Methods

1.1. Classification of Underground Mining Methods

Mineral production in which all extracting operations are conducted beneath the ground surface is termed underground mining. Underground mining methods are usually employed when the depth of the deposit and/or the waste to ore ratio (stripping ratio) are too great to commence a surface operation. Once the economic feasibility has been verified, the most appropriate mining methods must be selected according to the natural/geological conditions and spatial/geometric characteristics of mineral deposits. Considerations include:

1. Spatial/geometric characteristics of the deposit concerned: the shape, size, thickness, plunge, and depth.

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Koehler S. Stout



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