

Evaluating Paste Fill Containment Zones Design: A practical guide

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ABSTRACT

Cemented Paste Backfill (CPB) has become integral to the mining cycle in many underground mines in Australia. However, there are inherent risk associated with CPB, as it introduces the risk of inrush into operational areas during backfill operations in the event of a paste barricade failure. Typical operational controls to prevent an unwanted inrush event involve the establishment of containment zones. The mine design layout can have a significant impact on the implementation of these, which can cause interactions with other production activities, leading to disruptions if not scheduled and designed adequately. These issues are particularly prevalent in bulk stoping mines, where paste fill volumes are much larger compared to narrow vein mining.

Containment zone design is undertaken using various methods, each with its own advantages and disadvantages. The selection of the appropriate method can significantly impact the safety and efficiency of mining operations. This review assesses the typical methods used in Australian mines and outlines suitable approaches for different mining methods, providing a practical guide for containment zone design for current and future operations utilising CPB,

This paper highlights the importance of selecting the most appropriate containment zone method to support safe and efficient operations.