



Case Study

Pneumatic and Hydromechanical Techniques in the Gold and Coal Mining Industries in South Africa

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Based on various task definitions from gold and coal mines in South Africa, it is explained to what extent existing techniques can be applied to the solution of these problems. The investigation shows that experience already gained in pneumatic transport of building materials in West European coal mines provides possible solutions for the various transport requirements of South African mines. The application of pressure vessels with dosing units is a necessity. In combination with hydraulic transport in high density pastes, further requirements in the field of backfilling can be fulfilled. Paste conveying could also provide a solution to the problem of coal dumps.

1. Introduction.

The growing awareness of the limited availability of energy reserves, an increasing safety requirement, as well as a growing sensitivity to questions of pollution, present the industry with new tasks.

In order to solve these new problems completely new methods must be developed, but, at least in some areas, solutions can be achieved by transferring

well known and proven techniques.

In the following article an attempt is made to indicate possible solutions to problems defined in the South African gold and coal mining industries by reference to proven operating processes in the field of pneumatic transport of dry bulk materials and the hydraulic transport of pastes.

The author is fully aware that all these problems cannot be solved by a simple transfer of techniques, and modifications of these will also be necessary. On the other hand successful solutions to these problems will have a great influence on developments in the mining industry in all parts of the world.