



Research Paper

High-Pressure Coal Feeding Techniques Using Bin-Type Feeders

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Starting from a brief introduction of the high-pressure bin-type coal feeding technique, a hydrohoisting system successfully developed in China and applicable to deep shafts and to mines intending to keep a low percentage of degradation of lump coal product or to mines producing ROM with a high pyrite content, reference is made both to the practical effects achieved in the industrial field and to the experience and progress made in the experimental investigations in recent years.

In China, slurry pumps are mostly used for hydro-transport and hydrohoist of coal. According to practical experiences over the years, better techno-economic benefits can be obtained by employing the high-pressure bin-type coal feeding technique for deep shafts or shallow shafts where high pyrite ROM coal is to be hoisted as well as for mines where less degradation in mine output is required.

The major points covered in this study are:.

1. Development of high-pressure coal feeding equipment which will work as an aggregate together with the pump and determination of the optimum parameters of this aggregate.
2. This feeding equipment would feed coal in such a way that coal will be fed directly into its high pressure chamber under normal pressure, instead of

passing through the impeller of a centrifugal pump or the valves of a reciprocating pump. The coal is then, after being cut off from the atmosphere, fed under high pressure into the slurry hoisting pipeline from the high pressure chamber evenly, efficiently and continuously. The high-pressure coal feeding equipment developed in China operates on the principle that equi-volume replacement of coal and water takes place in the high pressure chamber.