

عنوان مقاله:

Crushing analysis of the industrial cage mill and the laboratory jaw crusher

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خلاصه مقاله:

Many research studies have been conducted on the liberation of locked minerals using a crusher and comparing this device with the other devices. This paper reviews the liberation of middle coal by different methods of crushing force. In the Tabas coal washing plant, particles of 0.5-50 mm size are processed through the heavy media method (using 3 Tri-flo separators) and particles of 0-0.5 mm size are processed using the flotation method (using 6 column flotation cells). A Tri-flo separator with a diameter of 700 mm and the capacity of 120 tons per hour is used for the cleaning of 6-50 mm raw coal particles. The study was conducted using a laboratory jaw crusher and a cage mill with a specific comminution ratio, both crushing forces were analyzed with the same distribution and mechanism of production of fines. In this study, grading and washability characteristics of a representative sample of middle product were reviewed and the dimensions of the ash were measured for each section. Intermediate product crushing using a laboratory jaw crusher and an industrial cage mill were conducted at up to 5 mm size and 50 percent of final speed. The amount of coal released after each section grading was determined by a sinking and floating test for size +0.5 mm and release analysis and ash testing for smaller dimensions of -0.5, these tests were conducted for each section product dimension. The results indicated that utilizing a cage mill is more effective than a laboratory jaw crusher, resulting in 11-percent more yield with 12 ash. The rate of fines produced through the laboratory jaw crusher is less than the industrial cage mill.

کلمات کلیدی:

Comminution, Middle coal, Washability analysis, Cage mill, Jaw crusher

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