

Laboratory study of an organic binder for pelletization of a magnetite concentrate

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Abstract

This study aimed to identify a way to reduce the use of bentonite in the pelletization of magnetite. With this goal, different combinations of binders were compared to bentonite by examining the quality of pellets obtained by balling drum agglomeration. Pellets were subjected to routine tests that included simple compression of the wet and dry 105°C pellets, dropping wet pellets to determine their ability to survive handling and submitting pellets to thermal shock to determine how they tolerate drying and preheating. The best results use sodium silicate (1.5%) as a binder and show that it is possible to pelletize iron ore without using bentonite.

Key words: Pelletization, Magnetite, Iron/ iron ores, Binders, Bentonite