



OB-1205

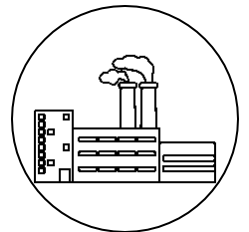
For Better Pelletization and Sintering



Pellets



Pelletization / Steel Plant



Sintering Plant

Organic Substitute for Bentonite



ABHITECH ENERGYCON LIMITED

Iron Ore Pelletization is widely used technology to produce Iron Ore Pellets which are used as raw material for Steel Manufacturing. Conventionally, Bentonite is used as a binder in pelletization process. Bentonite incorporates silica and alumina, which are undesirable contaminants to the pellets.

ABHITECH has developed an Organic binder, OB-1205 to replace Bentonite in Iron Ore Pelletization process.

OB-1205 reduces bentonite (reducing SiO_2 & Al_2O_3 impurities) in iron ore pelletization and enhances burnt pellet characteristics. Even at lowest treatment rates, it reduces contaminants and boosts efficiency.

Working Mechanism

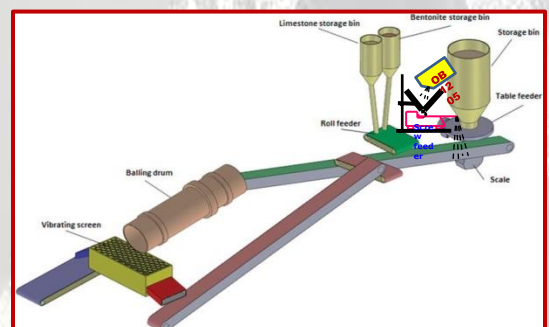
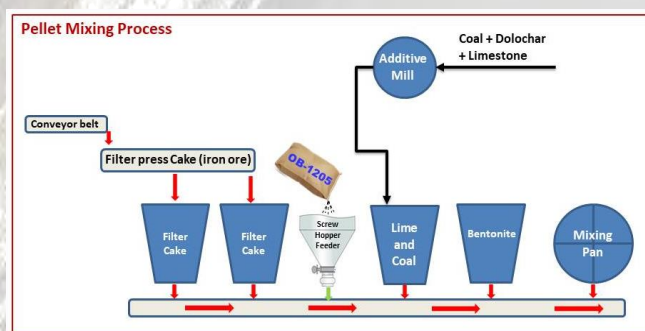
Organic Binder functions by generating strong adhesive and cohesive forces for the agglomeration of iron ore minerals, as depicted in the following figure.

Increased interaction with Fe^{3+} ions is provided by the high molecular weight and extended cross-linking branching chain. These forces are far greater than those generated by the capillary action principle of bentonite, allowing for more than 30% reduction in bentonite usage.

Its high degree of polymerization and high solution viscosity make it simple to establish strong cohesion inside the pellet, and its molecular structure has a significant number of active functional groups that generate strong adhesion with minerals.

Dosing Mechanism

OB-1205 is added on iron ore conveyor belt through a hopper feeder mechanism. The feed rate of Organic Binder is controlled by varying the rpm of screw feeder.



Dosage

OB-1205 is dosed in the ratio of 50 to 100 gm/ton of Iron ore based on its Morphology & Moisture content.

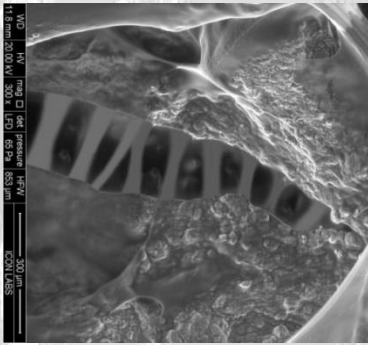
Benefits

- ❑ Reduction in Bentonite consumption by 30% - 50%.
- ❑ Reduces the generation of fines by improving Tumbling Index.
- ❑ Reduction of impurities thereby improving operational efficiencies.
- ❑ Improved quality of finished pellets.
- ❑ Reduction in cracks formation.
- ❑ Reduce the specific fuel consumption by 1-3%.
- ❑ Improved reducibility.
- ❑ Reduction in Fuel Consumption of blast furnace due to improved quality of product (less slag due to alumina & Silica).
- ❑ Lower handling and logistics cost.
- ❑ Improves commercial value of the Pellets by increasing Fe content.

Scanning Electron Microscope (SEM) Test Results

| Comparison study under scanning electron microscope of Iron Ore Green Pellets with Bentonite + OB-1205 | | Bentonite structure & Bentonite+OB-1205 | |
|--|--|---|---------------------|
| | | BENTONITE STRUCTURE WITHOUT OB-1205 | BENTONITE & OB-1205 |
| | | | |

The gaps are filled by OB-1205 & which are very helpful for iron ore agglomeration. The Bentonite and OB-1205 shows effective binding together.



Due to the strong cohesive and adhesive forces of OB-1205, maximum adhesive bridges are created.

Our Global Presence



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