FLOFORM™
Iron Ore
Pelletization
Use of FLOFORM™

Pelletization is a tumble/growth agglomeration mechanism for solid particulates, which must comply with several key points from the strength of the liquid bond during the seeding, the control of the water migration during the balling to the solid bonds resistance during the indurating stage. Starting from these observations, FLOFORM, which is an organic binder based on acrylamide chemistry, has been specially developed for pelletization of magnetite and hematite ores, whatever the equipments used.

Pelletization process

Key point: FLOFORM allows to control the migration speed of the water thus the surface moisture. It can operate even with different moisture contents present inside the ore.
Key point: Sticky pellet surface. FLOFORM brings sticky properties (+/- viscous surface humidity) and enhances the efficiency of the snow balling.
Key point: with FLOFORM, the pellets have strong solid bridges, so they can be fired at the induration temperatures.
Key point: FLOFORM is then burned off as the chemical reactions and the recrystallization occur, the pellet are successful hardened with few gangues.
**FLOFORM™ Iron Ore Pelletization**

**FLOFORM™, an alternative**

Traditionally bentonite is used as binder, but it reintroduces deleterious elements such as silica and alumina. FLOFORM is typically dosed at 0.01-0.05% prior to balling, i.e. about 1/20th of Bentonite. Depending on the quality of iron ore, a dual binder system comprising both FLOFORM (0.02 to 0.03%) and bentonite (0.2 to 0.33%) in the addition range could also give excellent results thus decreasing the overall bentonite consumption by 75-80%.

- **Increased green ball recovery**
  FLOFORM promotes green ball growth and reduces the recycling rates. Increased green ball productivity, subject to furnace capacity, can therefore be achieved to maximize plant usage. Use of FLOFORM products as binder brings uniform sizing required and good shapes.

- **Improved pellet properties**
  Green balls prepared using FLOFORM exhibit a uniform shape with a dry even surface. The pellet structure is more suited to the release of moisture, which improves thermal shock resistance and prevents spalling. The fired pellets have fewer cracks, with lower incidence of chips and pieces, and have a high CCS (Cold Compression Strength) with low AI (Abrasion Index) and TI (Tumble Index). The FLOFORM burns off during firing, yielding pellets with higher porosity and better reducibility than with bentonite.

- **Lower energy consumption**
  The major energy saving, when using FLOFORM, will be in the furnace, where lower moisture will require less energy for the drying stage. Reduced steaming can contribute to faster heat transfer, which, combined with reduced cluster formation for better breathing. Higher green ball recovery on the balling stage also contributes to energy savings: less power is wasted on recycling of undersized material.

**Product, packaging and delivery**

FLOFORM is readily miscible with the iron ore concentrate. FLOFORM is a free-flowing powder supplied in sealed 750 kg big-bags. Full details can be found on the MSDS supplied with the product.

**Just look at the difference...**

**FLOFORM™ pellets**

With a clean surface, well formed shape and good size distribution

**Process expertise and equipment**

SNF’s aim is to provide our customers with a total solution, from initial plant appraisal, balling test on site, and assist the Pot-grate evaluation. We look forward to discuss with you of your pelletizing application and to work with you to provide the best, most cost effective solution for your plant.