

Product bulletin FERROFORM 6405 AVG

FERROFORM 6405 AVG is a high-performance polymeric binder for iron ore pelletizing designed to partially or fully replace bentonite while improving pellet quality, stabilizing balling performance, and increasing the efficiency of induration. The product is applied as a dry powder using standard dosing equipment and is adaptable to a wide range of concentrates, moisture regimes, and pelletizing conditions.

Industrial trials conducted at a METINVEST facility in April 2023 (LURGI 552 induration machine) demonstrated significant technological and economic benefits at an optimal dosage of 180 g/t of concentrate:

- Bentonite consumption reduced by 0.66% (6.6 kg/t)
- Fired pellet strength increased by 19 kg/pellet (~8%)
- Total iron content increased by 0.3%
- Improved pellet size distribution and bed permeability
- Stabilized pelletizing process and reduced variability
- Lower specific electricity consumption

FERROFORM 6405 AVG enhances pellet structure through controlled polymer swelling and strong adhesion to fine mineral particles, resulting in faster pellet nucleation, more uniform growth, and improved green and fired pellet stability.

Expected benefits across different plants include:

- 30–100% reduction in bentonite usage
- 10–20% increase in fired pellet strength
- Improved LTD and reducibility performance
- 5–10% increase in induration machine productivity
- 2–3 kWh/t reduction in electricity consumption
- 1.0–1.8 m³/t reduction in gas consumption
- 0.3–0.5% increase in total Fe

The economic impact arises from lower binder costs, higher Fe content, improved pellet quality, reduced energy consumption, and enhanced downstream metallurgical performance. A plant-specific evaluation is recommended to determine the optimal dosage and quantify the full economic effect.

KLIMANA provides comprehensive support, including laboratory testing, industrial trial programs, and technical assistance to ensure successful implementation under site-specific conditions.