

Macawber Installation Case Study: Gypsum – BNBM Public Ltd. Co., Liaoning Prov., China

IN BRIEF

Gypsum is a primary constituent in dry wall building materials and often is processed in plants located near power generation plants, as gypsum is a by-product of flue gas environmental control systems in coal combustion plants. This is the case for BNBM company located in Tieling City, Liaoning Province, China. The customer selected robust Macawber Denseveyor™ systems to handle this difficult material. Special considerations were taken into the conveying regime that is specific to moving gypsum, and the experience Macawber has gained through more than 30 years building and supplying custom engineered pneumatic conveying equipment benefitted the customer once again as systems with the right design were successfully supplied.

MATERIAL CHARACTERISTICS

Material	Gypsum
Bulk Density	Aerated 900 kg/m ³ (56 lb/ft ³)
Size	Fine Grain, 40µm avg.
Temperature	Up to 140°C (284°F)
Moisture	None
Condition	Difficult to convey, Plugs lines easily, Cakes

SYSTEM OBJECTIVES

1. Air consumption efficiency
2. Reliable operation with poor material
3. Low wear and long machine life
4. No line plugging while meeting rate

SYSTEM PERFORMANCE

Transfer Capacity	40 Mt/h total
Conveying Distance	Up to 190m (623 ft.)
Reception Points	Single silo
Air Consumption	Total 19.9 Nm ³ /min (703scfm)



IMPROVEMENTS ACHIEVED

1. Macawber solution selected for reliability in overcoming challenges with conveying a difficult material such as gypsum
2. Air consumption efficiency despite the defensive measures required to overcome difficulty in conveying gypsum
3. Clean operating conditions

