

Macawber Installation Case Study: Raw Coal – Incheon, Korea

IN BRIEF

Three systems comprising a total transfer rate of 115 t/h were supplied to the customer whose plant was powered by an industrial size boiler on site. The systems handled the raw coal fuel moving it from a multi drop delivery reception system to a coal bunker. The coal ranged from 50mm (2") size down to pulverized particles of less than 0.1mm. The customer selected reliable and robust Macawber Denseveyor® systems in an explosion proof configuration to handle the requirement of achieving a clean transfer of coal to the bunker with machine reliability and minimal maintenance. Through 30 years of material conveying experience, Macawber was able to deliver the equipment and provide onsite startup of the system to the customer's satisfaction.

MATERIAL CHARACTERISTICS

Material	Raw Coal
Bulk Density	Aerated 900 kg/m ³ (56 lb/ft ³)
Size	Lump up to 50mm (2")
Temperature	25-80°C (75-175°F)
Moisture	5%
Condition	Moisture causes poor material flow and feed Explosive environment

SYSTEM OBJECTIVES

1. Air consumption efficiency
2. Reliable operation with poor material
3. Low wear and long machine life
4. Consistent transfer vessel feed
5. Explosive environment operation

SYSTEM PERFORMANCE

Transfer Capacity	116.3 Mt/h total
Conveying Distance	Up to 92m (302 ft.)
Reception Points	Single coal bunker
Air Consumption	Total 35 Nm ³ /min (1271scfm)

IMPROVEMENTS ACHIEVED

1. Macawber solution selected for reliability in overcoming challenges with feeding a difficult material into convey vessels
2. Air consumption efficiency despite the defensive measures required to overcome difficulty in filling convey vessels
3. Clean operating conditions. Reliable operation. Minimal Maintenance. Low lifetime cost
4. Safety considerations due to explosive environment handled through the use of Nema7 enclosures and controls

