Case Study:
Raw Coal – BS International, 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

<table>
<thead>
<tr>
<th>Material</th>
<th>Raw Coal</th>
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<tbody>
<tr>
<td>Bulk Density</td>
<td>Aerated 900 kg/m³ (56 lb/ft³)</td>
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<tr>
<td>Size</td>
<td>Lump up to 50mm (2&quot;)</td>
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<tr>
<td>Temperature</td>
<td>25-80°C (75-175°F)</td>
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<td>Moisture</td>
<td>5%</td>
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<td>Condition</td>
<td>Moisture causes poor material flow and feed.</td>
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<td></td>
<td>Explosive environment.</td>
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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 Achieved
116.3 Mt/h total

Conveying Distance
Up to 92m (302 ft.)

Reception Points
Single coal bunker

Air Consumption
Total 35 Nm³/min (1271 scfm)

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.
4. Safety considerations due to explosive environment handled through the use of Nema7 enclosures and controls.