

Macawber Installation Case Study: Fish Food Conveying Systems, Norway

IN BRIEF

Two dense-phase pneumatic conveying systems were supplied to handle 35t/h of fish food pellets over a distance of 265ft horizontal and 90ft vertical. The systems were 30ft³. vessels with a 10" pipe line. Both systems were located under a feed hopper with start and stop controlled in automatic mode by the feed hopper and silo reception level probes. The systems are working very reliably with no line blockages and exceed the customer's expectations regarding transfer rate providing 40t/h for large fish food pellets and over 50t/h for the smaller pellets. Material degradation was a key concern with a requirement of 0.6% maximum degradation. The systems easily achieved their objectives with an average material transfer velocity of between 8ft/s and 9ft/s. The pipe line conveying pressure was between 12psi and 13.5psi. These particular systems incorporated multiple manifold settings allowing the transfer of a wide range of products materials and sizes.

MATERIAL CHARACTERISTICS

| | |
|-------------------|-----------------------|
| Fish Food Pellets | 1/8" to 1/2" |
| Bulk Density | 40 lb/ft ³ |
| Temperature | 60°F |
| Moisture Content | 8.0% |
| Condition | Free Flowing |

SYSTEM OBJECTIVES

1. Minimal material degradation
2. Low conveying pressure
3. Reliable operation

SYSTEM PERFORMANCE

| | |
|--------------------|--|
| Transfer Capacity | 35 t/h |
| Conveying Distance | 355ft |
| Reception Points | 1 feed and 24 reception points per system. |

IMPROVEMENTS ACHIEVED

1. Lower than specified degradation providing significant process savings
2. Increased transfer rate
3. Reduced compressed air requirements

