

Macawber Installation Case Study: Fly Ash Conveying Systems, Poland

IN BRIEF

Two Macawber fly ash systems were supplied to convey 30t/h each over a distance of up to 1,265ft horizontal and 121ft vertical. The ash systems use 40 cu. ft. vessels with a 6" pipe line. Both conveying systems are located under a feed hopper with start and stop controlled in automatic by the feed hopper and silo reception level probes. The fly ash systems are working very reliably with no line blockages and exceed the customer's expectation regarding transfer rate and performance. These particular Macawber systems incorporated multiple manifold settings allowing the transfer of a range of fly ash products over various distances. The final convey air requirement on the longest route was 760scfm compared to the proposed 988scfm resulting in a saving both in cost and air used from the compressed air system. One particular problem was a very low control air pressure resulting in a compromised sealing of the dome filling valve inflatable seal. This was overcome by installing a pressure doubler and small air reservoir to provide more than sufficient instrument air pressure and excellent sealing.

MATERIAL CHARACTERISTICS

Fly Ash	0.0025" to 0.008"
Bulk Density	34 - 48 lb/ft ³
Temperature	392°F
Moisture Content	Dry
Condition	Free Flowing

SYSTEM OBJECTIVES

1. Dense phase low velocity conveying
2. Short delivery

SYSTEM PERFORMANCE

Transfer Capacity	31,500Kg/h
Conveying Distance	1,386ft
Reception Points	1 feed and 2 reception point per system

IMPROVEMENTS ACHIEVED

1. Increased transfer rate
2. Reduced compressed air requirements
3. Increased reliability compared to older system

