

Mactenn installation case study: Fracking Sand Conveying Systems, USA.

IN BRIEF

Three systems with each system comprising two conveying vessels were supplied to convey up to 28t/h over a distance of between 107m and 200m. The systems have 12 cubic feet or 342 liter vessels with a 150mm pipe line. All systems are located under a feed hopper with start and stop controlled in automatic by the feed hopper and silo reception level probes. The systems are working very reliably with no line blockages and exceed the customer's expectation regarding transfer rate giving over 30t/h. Low velocity conveying was chosen due to the extremely abrasive nature of the material. Transfer speeds were kept low giving good wear characteristics while maintaining higher than expected material transfer rates.

MATERIAL CHARACTERISTICS

Fracking sand	30-50 mesh, 0.3mm to 0.6mm
Bulk Density	1540 Kg/m ³
Temperature	21°C
Moisture Content	0%
Condition	Free flowing, very abrasive.



SYSTEM OBJECTIVES

1. Dense phase low velocity conveying & low degradation.
2. Short delivery.
3. Reliable operation.

SYSTEM PERFORMANCE

Transfer Capacity	Up to 28t/h
Conveying Distance	107m shortest and 200m longest
Reception Points	System 1 & 2 have 10 each, system 3 has 1.

System vessels ready for shipping

IMPROVEMENTS ACHIEVED

1. Increased transfer rate.
2. Reduced compressed air requirements.
3. Minimum wear for such a highly abrasive material.



Installed system



Diverter valves on the reception silo



Vessel prior to shipping