Last but not least!

Suction blow capabilities

Transport of powders via a pipe line can be performed by both a dense phase convey unit as well as by a screw pump. Screw pumps however have not the capability to extract the material from a storage facility. Al material has to be supplied to the screw pumps before this pump can transport further.

Dense phase convey units can extract the material from a storage and can feed themselves without the need of air slide, screw conveyer or bucket elevator. This makes the dense phase convey units very economical, reliable, and efficient.

As an example we can mention a loading terminal in Karachi Harbour, Pakistan. Cement is transported from the inland cement factory to the harbour by truck. In the harbor the cement is stored in 4 silos of 6000 tons storage capacity each. Design of these flat bottom silos was done by Van Aalst Bulk Handling.
It is possible to store various types of cement due to the number of silos, which opens a more flexible operation than one storage silo.
In order not to obstruct other operations in the harbour, the silos had to be erected at a position 250 meter from the water side.
Transport of the cement from the silos to the mobile loading station at the jetty is performed by a suction blow convey unit via an underground pipeline.

This suction blow convey unit is positioned in the centre of the 4 storage silos and has a capacity of 500 tons/hour.
The convey unit can extract the cement from each individual silo and blow the cement to the loading installation. Selection of the storage silo is via the control panel next to the convey unit.
No transport equipment from all 4 silos towards the convey unit needed. Only one convey unit is needed to service 4 individual silos.

Suction Blow at low capacity

For above mentioned big 500 tph convey unit a vacuum pump is installed for the suction process and an convey air compressor(s) is needed for the transport/ blow process.
For small suction/blow dense phase convey installations we use only one compressor. This compressor can run in vacuum mode as well as compressor. Via valves we can change over the inlet and exit of the compressor unit.

On photo xx such a unit is visible. The unit is equipped with only 1 suction/ transfer kettle. When the unit is switched-on, the compressor is switched into vacuum mode and sucks the kettle full of cement. When the kettle is full, the compressor is switched over to compression/ blow mode and blows the cement out of the kettle towards (in this case) the ship that has to be loaded.

One kettle – one compressor needed. For small capacity a small price and minimal small power consumption.

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VAN AALST BULK HANDLING
made to measure

pneumatic convey installations

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Storage Facility | Convey Units | Industry | Pneumatic Shiploaders | Pneumatic Shipunloaders

Van Aalst Bulk handling B.V.

More than just ship handling installations!

Ship unloaders for dusty abrasive materials like cement and fly-ash have given Van Aalst their name in the bulk handling market. As a logical spin off, also pneumatic ship loaders became part of the product line.

Less known is the fact that the involvement of Van Aalst Bulk Handling (VABH) does not stop when ships are loaded or unloaded. However the company also offers and supplies other equipment for cement terminals, cement factories and recycling firms: related products!

The related products can be divided in:

- **Transport / convey installations**
- **Steel silos and reclaim installations for domes and flat storage warehouses**
- **Ecological hoppers**
- **Dense phase**

The pneumatic convey installations are becoming an important part of the product line of VABH and a growing item of the yearly turnover of the company.

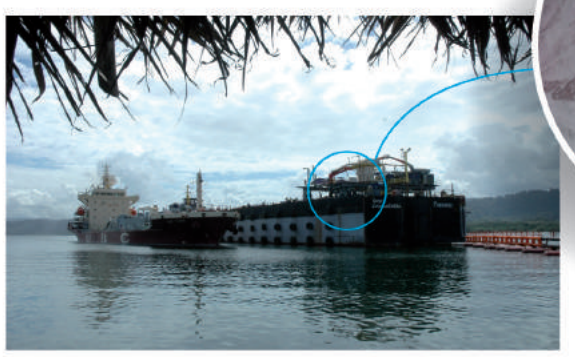
The increasing demand for the VABH pneumatic convey units is due to the fact that these installations have proven to be:

- **Abrasive resistant – low maintenance cost**
- **Low power consumption**
- **Able to handle high capacities over long distances**
- **High suction blow capability**

With the description of some of the delivered installations the above mentioned advantages can be explained in more detail.

Fly-ash transport from silo to cement grinding mills

Bangladesh is importing clinker and fly-ash for the cement production. Van Aalst Bulk Handling has supplied a number of shipunloaders to unload the fly-ash from (small) barges. These installations pump the unloaded fly-ash to storage silo(s) on shore.



From the storage silo the fly-ash has to be transported to the grinding mills of the cement factory. At first, this transport has been tried with screw pumps – FulleiKinyon or IBAU, but this was not a success. The imported fly-ash contains a high amount of silica and is Highly Abrasive. The screws and other parts of the pumps were wearing out in a short period of time.

The pneumatic dense phase convey units of Van Aalst Bulk Handling have no screws installed in the flow of material and do not have the wear problem. Only valves are installed, and the valves at the outlet of the convey units have been made according to special design. The special designed pinch valves at the outlets have proven their (guaranteed) life time and low maintenance costs.

Another advantage of the dense phase convey units is the low power consumption. Screw pumps require extra power for the drive of the internal transport screw:
for bigger capacity pumps this can be between 100kW and 200 kW.
Dense phase convey units do not have these screws and consequently do not use (spill) this power.

The dense phase convey installations can work on pressures between 1,5 and 8 bar and can transport over long distances. Due to the moving parts in a screw pump, the maximum pressure on a screw pump is limited to 2 bar. Higher pressures will push the material into the bearings and can break the pump in 5 minutes.
Van Aalst Bulk Handling has the possibility to choose the right pressure between 1,5 and 8 bar in combination with the air volume: the most optimized installation (power and money wise) can be offered to the clients.

The dense phase convey installations do not require extra safety features like the screw pumps. Auxiliary air pressure is required on a screw pump to create overpressure on the bearings of the pump.
Dense phase installations have no bearings.

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