

Angel hair

New mobile DeDusting system

DeDusting of resins prior to packaging in silo farms

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Dust and streamers (angel hair) are unwanted contaminants in plastic pellets, which reduce the quality of the resins. These contaminants cause defects and increased scrap in plastic end products, as well as interruptions of production and higher housekeeping costs in plastic processing plants. Plastic manufacturers and logistic companies are looking for efficient and economical solutions to clean resins before packaging in rail cars, trucks, oktabins or bags. In order to obtain a good product quality prior to loading, the traditional elutriators installed on top of silos are not sufficient.

The remaining dust after cleaning in an elutriator accumulates under silo roofs and walls, resulting in dust surges from time to time, which contaminate the entire bulk load. Furthermore, an elutriator is very difficult to clean in case of product changes, which can also cause contamination.

Some customers use costly Slow Motion Conveying Systems to reduce dust and streamers. This technology reduces fines, but generates very fine and highly electrostatic charged dust, which sticks to the pellet surfaces and accumulates in silos as well. In order to get high quality resins in slow motion conveying systems, the use of a DeDuster® is highly recommended.

Therefore, Pelletron recommends using STRAND-PHASE® conveying technology in connection with a DeDuster®, which has proven to be the best technical and most economical solution.

Pelletron has developed a new mobile DeDusting system, the XP-DeDuster[®] as a closed loop CCD-system (Compact Cyclonic DeDusting). The extremely low height of the XP- DeDuster[®] was the key for this type of new technology. The mobile unit can be moved under each silo for cleaning the resins before loading or packaging. The DeDuster[®] can be cleaned easily with compressed air or water in order to avoid contamination when changing the product.



DeDuster[®] in operation



DeDuster[®] – System is moved into loading position

New mobile DeDusting system from Pelletron

Pelletron has already supplied multiple DeDuster[®] units in various sizes to the full satisfaction of its customers. A mobile 36t/h DeDuster[®] was installed and started operating successfully in June 2008 at the RP Compounds in Schkopau / Germany for loading of plastic pellets into trucks.

More DeDuster[®] units will be installed presently and operated soon at a well-known German plastic manufacturer. The mobile unit will be moved with a fork lift to the desired position, and the connection to the silo and the truck will be done by telescopic pipes.

The remaining dust content after cleaning was measured by the customer, and the rates were always below 30ppm. The excellent cleaning results are achieved through a combination of the air flow (patented wash air principle) and the patented magnetic field which interrupts the electrostatic charges between pellet surface and dust. Angel hair is also removed reliably by the DeDuster[®].

For abrasive products, Pelletron offers a wear-resistant design. The XP-series DeDuster[®] as a closed loop CCD system is available in sizes 500kg/h up to 72t/h.



DeDuster[®] – System in loading position

WORKING PRINCIPLE OF THE SYSTEM

The product to be cleaned is fed into the DeDuster[®] by gravity, and an adjustable inlet deflector distributes the pellets proportionally to the wash decks. The DeDuster[®] operates with 3 cleaning areas - the upper wash zone, the Venturi

zone and the lower wash zone. The wash decks are equipped with slots and holes, located and designed for an effective air wash effect. A magnetic coil at the DeDuster[®] inlet generates a magnetic field which interrupts the electrostatic charges for a short time to allow the separation of the dust from the surface of the pellets. Pelletron's dust

measuring procedure includes dust particle sizes down to 1.6 micron. In the Venturi zone, the air wash effect can be increased or decreased in order to remove angel hair. The DeDuster[®] is equipped with a clear PC panel as standard (hardened glass on request), for easy observation of the dedusting process by the operator or a camera.