

Environmental demands for dust-free outloading in ports

Cimbria Moduflex Member of the Cimbria Group of Companies, Herning, Denmark

Taking into account that in most cases today, ports are an integral part of a city and the surrounding landscape, Cimbria Moduflex has supplied dust free loading chutes to ports throughout the world, not the least to protect and improve the general environment and working conditions, but also to offer the port operators and terminals a safe and efficient outloading solution.

Fredericia Shipping, Denmark

When it comes to improving the internal as well as the external environment, Cimbria Moduflex has among others delivered a loading chute to Fredericia Shipping, Denmark, for loading ships with various types of grain. The decisive demand to be fulfilled was that of dust-free outloading, as the port in Fredericia is located right next to a marina. Furthermore, in order to improve the working conditions, the company was determined on eliminating a heavy dust problem which required that the staff operating the equipment constantly wore dust masks.

The supplied chute is a type VF650 with integrated filter at the chute head. The chute is comprised of an inlet attached to the motor winch, a series of guide cones, a flexible outer bellow and the discharge head. The chute has a total extended length of approximately 15 metres and loads the ships at a capacity of up to 700 t/h (1,000 m³/h) with different qualities of grain. The chute can handle maximum 1,200 m³/h.

The loading chute has now been installed and commissioned successfully. Coincidentally, this order was done in cooperation with Cimbria Videbaek – a sister company to Cimbria Moduflex – who has designed, extended and renovated the mobile ship loader with an integrated feeder, and incorporated the Moduflex loading chute at the end of the conveyor belt. The system is designed so flexibly that it can also be used for stockpiling in the warehouse when unloading ships. Fredericia Shipping is very satisfied with the performance of the loading system, which has greatly improved the working conditions for the operators and suppressed dust escaping to the surrounding environment.

Energy E2, Denmark

Likewise, Cimbria Moduflex was preferred to ensure a dust-free and efficient outloading of wood pellets into ships for the Danish power supply group Energy E2. The local authorities demanded that Energy E2 eliminate the dust billowing from their loading, as this caused a nuisance to the surrounding environment in general, and especially as the loading point is very close to the town centre and right next to a ferry berth.

The loading chute is of a similar type as the chute for Fredericia Shipping and has basically the same configuration, although the length is 16.5 metres, and what is more important, due to the nature of the product, the chute is equipped with explosion proof components in accordance with the ATEX directive. If required, the customer furthermore has the ability to equip the filter units at the discharge outlet with noise reduction kits to secure an even better working environment for the operators.

The customer reviewed a number of different proposals from various suppliers of ship loading chutes, and the order was awarded to Cimbria Moduflex after the in-depth evaluation of the



The VF500 loading chute.

various technologies and commercial conditions. The conclusion of this work was that Cimbria Moduflex was the only supplier who could meet the stringent demands of the customer and solve the problem of dust emissions they had with their old system.

Glaverbel, Belgium

In Belgium, Cimbria Moduflex has – in cooperation with VDE Engineering – installed a type VF300 at the company Glaverbel, proving that the Moduflex VF-type loading chutes are economically and technically viable solution to use for warehouse stockpiling purposes. One of the issues, which also needed to be taken into consideration, was the extreme dust emission in the outloading situation, which was a health hazard for the employees.

The chute is comprised of an abrasive resistant inlet attached to the motor winch, a series of guide cones, a flexible outer bellow and the discharge head with integrated filter. The chute has a total extended length of approximately 21 metres and loads dolomite in a number of loading bays at a capacity of up to 250 m³/h.

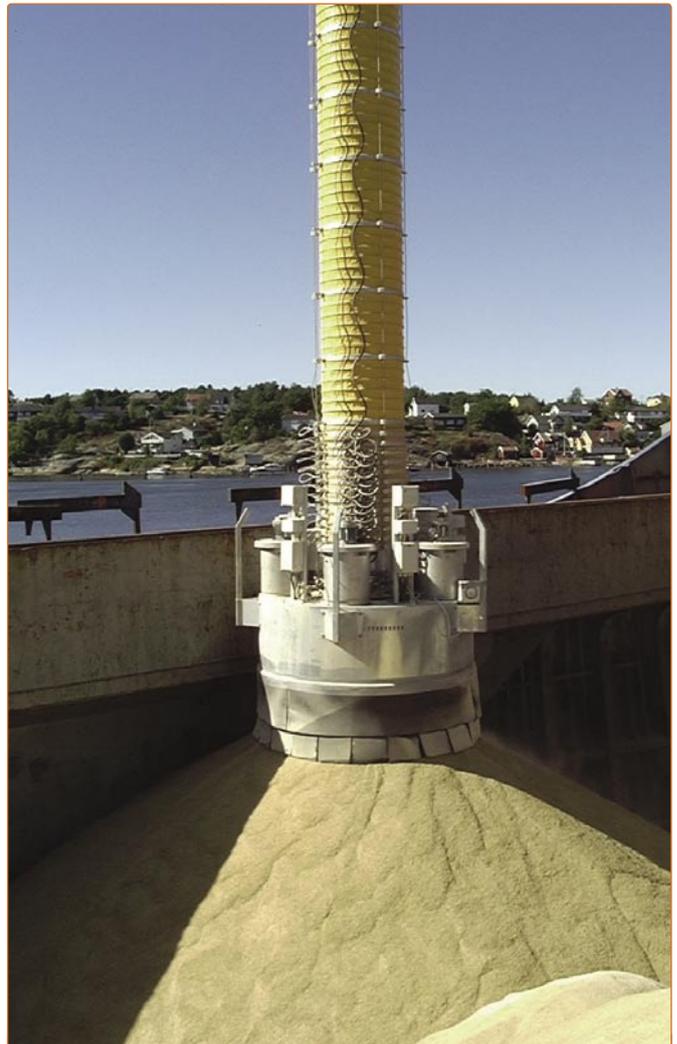
Choosing the fully self-contained chute type with integrated filter has solved a multitude of problems for Glaverbel, not only suppressing the dust, but also avoiding the connections to an external filter and the extra cost and complexity this entails, when the system needs to travel horizontally on a movable conveyor line. The loading chute has, after delivery and successful commissioning, been in full operation. Glaverbel was astonished by the dust control performance of the chute, which in effect has eliminated dust emissions from the loading. This means that it is now possible to do other work in the warehouse at the same time as the loading is taking place.

Port of Rizhay, China

Environmental matters combined with the demand for durability and large capacity has made Cimbria Moduflex a preferred supplier within the handling of dust producing commodities.

Cimbria Moduflex has recently installed a ship loading chute in a Chinese cement plant at the Port of Rizhay 300 km northeast of Beijing. The order was supplied in co-operation with our Dutch partner TBMA. The urgent problem for the Chinese cement plant was the need to load Portland cement into open as well as closed tanker ships in sizes from 5,000 to 50,000 tonnes, 24 hours a day; 365 days a year.

The order consists of a V650F loading chute especially customised to meet the demands in terms of capacity, durability and flexibility. The chute is equipped with 40 modules in NPG. As the NPG modules have a working range of up to 130°, they easily handle the required 95°. In order to fulfil the demands of both open and closed outloading, the chute is supplied with replaceable outlets i.e. a T-outlet containing a cone with supporting legs for loading through openings in closed hatch covers, and an F-outlet with dust skirt for loading into open ships. Moreover, the T-outlet is equipped with a built-in wave compensating system allowing the chute to follow the movements of the ship. Being equipped with a T-outlet for closed outloading, the chute has a minimum length below 6,000 mm and a total extended length of more than 28,000 mm. When the chute is mounted with the F-outlet for outloading into open tanker trucks, the length ranges from a minimum length of approximately 7,000 mm to a total extended length of 28,500 mm. The chute weighs approximately 3,000 kg and has a loading capacity of 1,200 t/h of powder with a specific gravity of 0.9-1.0. Furthermore, the chute is equipped with two aspiration hoses for connection to a central filter.



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ABOUT THE COMPANY

Cimbria Moduflex is a company in the Cimbria Group of companies, who has approximately 800 employees, and consists of several manufacturing units together with a number of sales outlets. Cimbria Moduflex is the world's biggest manufacturer of loading chutes, which are sold through a network of sales partners around the globe.

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