



## CLEVELAND CASCADE® CHUTE

### ALUNORTE

PEBCO® INC. worked with personnel from Alunorte in Brazil, South America to design a Cleveland Cascade® Chute suited for their alumina shiploading application. This chute is 82 feet in length and capable of loading 1,500 metric tons per hour of alumina into ships. Customer purchased the CCC-Mark IV-82 with fiberglass cones which are lined with UHMW. In addition, they chose our optional heavy-duty design shroud, speed reducer, and load cells. The load cell weighing system was incorporated to provide load monitoring of the Cleveland Cascade® Chute. This provides a continuous weight display of the Cleveland Cascade® Chute. Set point relays can be adjusted to suit any application.

The Cleveland Cascade® Chute requires minimum maintenance and operates free of product spillage and dust leakage. This chute has enabled Alunorte in Brazil, South America to successfully load alumina into ships.

The truncated, oppositely-inclined cones, supported by straps and covered by a wind shroud, enable material to be loaded in mass flow at low velocity. In this way, the bulk particles remain tightly packed together; thereby minimizing the release of small dust particles. Operating on the principle of mass flow at low velocity, dust emission is minimized without recourse to secondary extraction systems, while degradation and segregation are considerably reduced. This patented chute has applications in ship, barge, truck, railcar, and silo loading as well as conveyor-to-conveyor transfer.

The solution to the loading of alumina with the Cascade® Chute culminates a multi-year effort by PEBCO® and the Cascade® Chute inventors. According to Ed Barker, the two most difficult products to handle are alumina and finished cement. The Cascade® Chute has successfully handled a diverse range of dry bulk solids from finished cement and alumina to calcined petroleum coke, calcined lime, wheat, soda ash, potash, phosphate, lead oxide, etc.

PEBCO® Incorporated of Paducah, Kentucky has entered into an agreement to manufacture and sell the Cleveland Cascade® Chute in North and South America. As part of this agreement, PEBCO® has purchased all the patent rights to the Cleveland Cascade® Chute in these territories.

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