

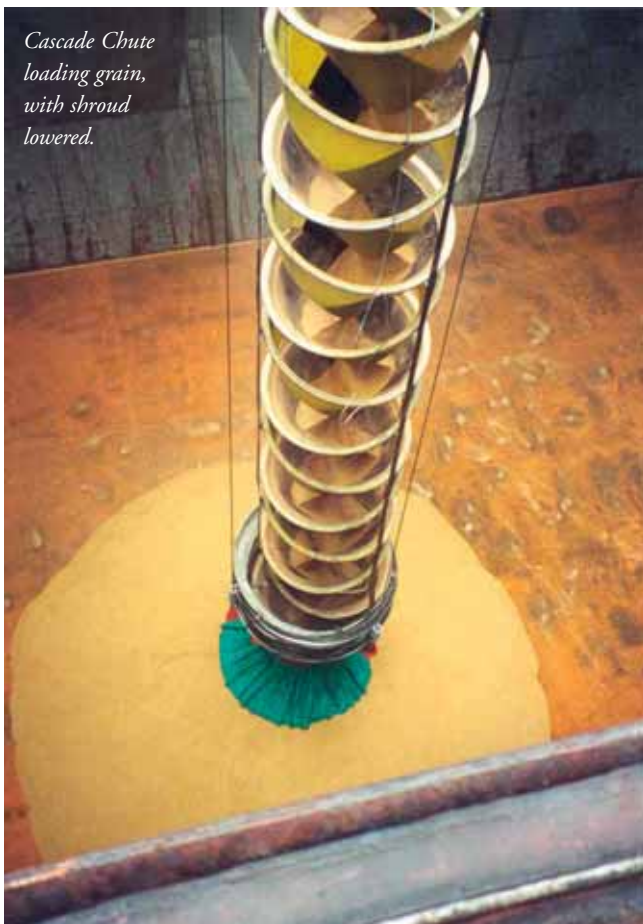
Grain loading chutes from Cleveland Cascades

The production and distribution of grains is a vast global industry and one of the biggest sectors in the dry bulk business. The International Grains Council, estimates that global production of Grain in the last 12 months was 2,005mt (million tonnes). Of that, 314mt of that was traded on domestic and international markets and therefore distributed by road, rail or sea transport. The same period has seen increased price volatility on global markets, leading to a recent bounce in the price index from 173 in March to 199 in August.

Cleveland Cascades has long had a strong presence in this sector and grain has always been a major part of the company's business. The first grain handling chute was delivered to Australia in 1997 and since then the population of grain handling systems has grown consistently. Grain has accounted for approximately 10% of sales and systems have been delivered worldwide to customers in North and South America, Asia, Australia as well as in Europe. The product types delivered in to the grain sector also vary widely, including cascade and free-fall shiploaders, transfer chutes, storage points and vehicle loading chutes.

Being a free flowing, small granular foodstuff, grain requires specific handling capability. When loading grain, operators often focus on minimizing material degradation and avoiding dust pollution, while at the same time maximizing loading rates.

The Cleveland Cascade chute is specifically designed to address all these key performance criteria for grain handlers. The Cascade solution directs the material flow down a series of inclined cones, which limits the flow velocity to a controlled speed. The shape of the cone holds the dry bulk material in such a way that prevents particulate separation and minimizes material degradation. The significantly reduced product velocity creates a 'mass flow' — a stream of material moving as a single mass through the chute and onto a stockpile with minimized segregation. The controlled descent of the material prevents air separating the particles and largely eliminates dust generation at source.



Cascade Chute loading grain, with shroud lowered.

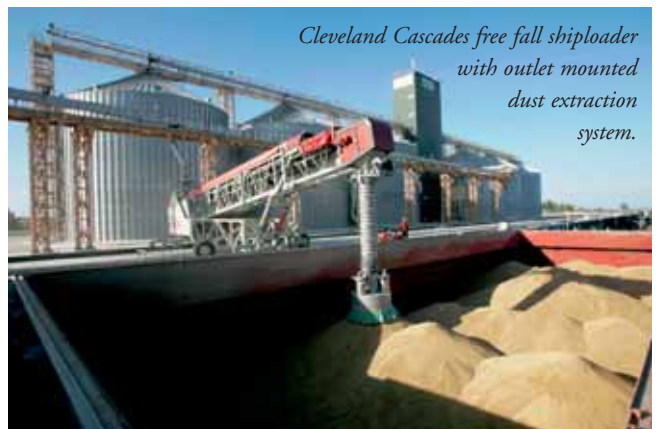


Cascade Chute loading grain.

A recent project in Turkey utilized the benefits of a Cascade shiploading chute. Iskar Muhendislik in Derince Port, installed an 18m chute capable of loading 1,200 tonnes of grain per hour. The running faces of the cones and head chute were lined with UWHMW polyethylene to provide a low friction abrasion resistant surface for the grain flow. The chute also includes an interchangeable outlet. The standard skirted arrangement can be alternated with a rotating trimmer device which directs the grain flow to corners of the ships hold.

In applications where the shiploading conveyor is portable, a lighter-weight free fall chute system is an often an effective choice for grain loading operations. To effectively control dust emissions, a dust extraction system can be fitted to the outlet carrier. One project for Cleveland Cascades in Ukraine, used this arrangement on four 8.5m chutes, fitted to Telestack mobile conveyors.

In recent years, the company has built a large population of grain loading chutes in the Black Sea region. Ports all around the Black Sea basin operate Cleveland Cascades grain loading chutes in Ukraine, Turkey, Moldova and Bulgaria. Only last month the company delivered a chute to Bulgaria, capable of loading 1,500tph (tonnes per hour) of grain. The 12.5m-long chute is light enough to operate with a mobile conveyor and uses GRP free-fall cones fitted with low friction UHMW PE liner.



Cleveland Cascades free fall shiploader with outlet mounted dust extraction system.