DSI PROJECT IN SOUTHAMPTON, UK

OXBOW SULFUR HANDLING

A number of factors drove Oxbow's decision to use the DSI Snake Conveyor at their sulfur handling facility in Southampton. The plant takes in liquid sulfur, which is then turned into pastilles using a steel belt system. From the steel belts, the material must be transferred into a silo. The pastilles are then loaded into trucks for export. The site was not large enough to allow space for a conventional conveyor to feed the material from the steel belts to the silo, and therefore the small footprint of the DSI Snake was necessary. Other high angle conveying options could be considered in this application, as the carrying capacity requirement was not particularly high. Bucket elevators and Flexowall belts are often considered for these types of applications. However, in this case, the client appreciated the clear advantage of scraping the belts clean at the head end, as opposed to the high wear and power consumption required to beat the material out of the other systems.

Though the order for the Oxbow system was originally placed in February of 2013, it started as engineering-only, with the supply order expected to follow shortly after. The engineering design was composed completely in 3D, using Autodesk Inventor. After a prompt completion of engineering, the equipment order was delayed until September of 2013. The equipment was delivered early in 2014, but sat dormant at the site for around six months before erection began. Finally, in early 2015, commissioning began, and DSI was invited to England to start up the equipment.

DSI Snake Sandwich Conveyor
for
Oxbow, Ltd, Fawley Plant, Southampton, UK

Material	- Sulfur
- Density	- 1.20 t/cu-m (75 PCF)
- Size	- 2 mm (1/8") minus
Conveying Rate	- 20 t/h (22 STPH)
Conveying Angle	- 50.5 degrees
Belt Width	- 600 mm (23.6")
Belt Speed	- 0.40 m/s (78.7 FPM)
Lift	- 19,266 mm (63.2')
Length	- 55,800 mm (183.1')
Snake Drives	
-Top Belt	- 3.7 kW (5 HP)
- Bottom Belt	- 3.7 kW (5 HP)

This system is fully enclosed by cladding and a drip pan along its belly. The site is located adjacent to an automobile transfer terminal, so sulfur pellets drifting through the air are not acceptable. The full enclosure ensures that any fugitive material is completely contained, allowing it to be easily returned to the belt line.

Having installed sulfur handling systems in the past, there was no expectation that the material at Oxbow would present any difficulty. However, some aspect of its composition caused the material to spread on the belt more easily than expected. Fortunately, this problem was easily resolved by the introduction of the DSI Wet Brush system. A light wetting of the belt edge arrested the material through the loading zone, and restricted it from spreading further as it traveled through the sandwich. This, combined with a few other tweaks in the field, resulted in a successful startup of yet another DSI Snake Sandwich High Angle Conveyor.

Dos Santos International continues to meet the challenges of their customers, and the latest installation of a DSI Snake Sandwich Belt High Angle Conveyor at the Oxbow Sulfur Handling facility in Southampton, UK is no exception.

The Oxbow Sulfur Handling facility takes in liquid sulfur which is turned into pastilles using a steel belt system. From the steel belts, the material must be transferred into a silo. The pastilles are then loaded into trucks for export. The challenges the customer had were the need for a system fitting into a small footprint, total utilization of the money making materials, more efficient containment of materials and cost savings advantages.

Typical thinking for this project would go to installation of a bucket elevator or Flexowall belt when small footprint is required. Fortunately, the customer realized that a prime advantage of the DSI Snake is its ability to conform to landscape and suit the smaller footprint.

The ingenious minds at Oxbow also recognized they could eliminate the concern of carry back by using the DSI Snake. Its ability to scrape the belts clean at the head end, as opposed to the high wear and power consumption required to beat the material out of the other systems was a clear money saver. Additionally, the DSI Snake is composed of all conventional conveyor parts which make replacement parts more easily attained over specialty parts in the typical systems, reducing the potential for downtime.

One of the challenges of this particular system was its location adjacent to an automobile transfer terminal. Sulfur pellets had a tendency to drift through the air which could create an environmental and clean up issue. Full enclosure of the materials in the sandwich belt high angle conveyor helped to control this over the typical systems. The system was fully enclosed by cladding and drip pan along its belly which ensures that any fugitive material is completely contained, allowing it to be easily returned to the belt line. Another difficult situation with sulfur handling is some aspects of the composition can cause material to spread on the belt more easily that other materials as was the case here. Continuing to meet the challenges of the customer, DSI easily resolved the issue by introduction of the DSI Wet Brush system. A light wetting of the belt edge arrested the material through the loading zone, and restricted it from spreading further as it traveled through the sandwich conveyor.

Start up and commissioning for this system took place in early 2015 and is yet another addition to the growing list of successful DSI Snakes around the world.

For more information visit www.dossantosintl.com

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