



# THE DSI SANDWICH BELT HIGH ANGLE CONVEYOR

## WOOD PELLETS HANDLING

In general, wood pellets and wood chips are among the easiest materials for the DSI Sandwich Belt High Angle Conveyor to handle, and the material benefits from the gentleness of our system over some of the more typical alternate high angle conveying methods.

## MATERIAL QUALITY

Concern about material degradation was addressed right at the beginning of the development some thirty five years ago. Because of the great potential for elevating and lowering friable or damage-prone materials, it was very important to convincingly demonstrate the gentleness of the Dos Santos sandwich belt system. It was known, by the nature of the hugging pressure, that this was a gentle system so the next step was to demonstrate this.

## GRAIN QUALITY

Damage testing was performed on three (3) USDA Grade 1 grains to demonstrate the gentle distribution of the hugging pressure on the sandwiched material. Five one-bushel samples were loaded into oversized burlap sacks from each of a common batch of soybeans, wheat and seed corn. The first bushel of each grain was set aside to serve as the control sample, while the next four bushels were conveyed at 60 degrees, the full length of the 1524mm (60") belt width demonstration unit, two, four, six and eight times respectively for corresponding conveying distances of 45.7 meters, 91.4 meters, 137.2 meters and 182.9 meters. Samples (2.555 grams) from each bushel sack were then analyzed at a State of Alabama Department of Agriculture laboratory for the various forms of damage and contamination, and at the Alabama State Seed Laboratory Department of Agriculture and Industries for germination potential. The results showed **"no"** damage to any of the three grains tested, as a result of conveying in the high angle conveying unit.

## WOOD CHIP QUALITY

The first commercial installation in wood chips replaced a positive pressure pneumatic system to elevate screened product continuously to the digester. This system was purchased precisely on the claimed gentleness of the Dos Santos Sandwich Belt system, as the pneumatic system resulted in substantial degradation of the wood chips resulting in expensive fiber loss. Prior to the purchase, Boise Cascade (the customer) conducted additional independent damage testing at our 1524mm (60") belt width demonstration unit. Once again we found that there was **"no"** damage to the product.



Many subsequent installations have handled various friable and damage prone materials including; various grains, wood chips, pebble lime, sulfur pellets, prills, pastilles, and urea, amidas prills. These have consistently demonstrated the gentleness of the system. Like any conventional conveyor, the areas of wear and tear are always at the transfers not along the conveyor carrying path.

Further advantages of the DSI Sandwich conveyor include:

- Low power/energy requirements.
- No degradation of wood pellets.
- All conventional conveyor components.
- Smooth surfaced rubber belts that can be continuously scraped clean.
- High reliability which ensures uninterrupted operation.
- Low maintenance costs.



The DSI Sandwich Belt also has low wear exposure. The conventional components and equipment are technically and commercially mature having proven long life and low cost.

