



Triple/S Dynamics, Inc.

1031 South Haskell Avenue

Dallas, TX 75223

800-527-2116

www.sssdynamics.com

SOLUTION STORY - REWORLD HILLSBOROUGH 190 FT LONG

23 January 2025

T/SD SERIAL NUMBER: HDC-2023-24
END USER / LOCATION: REWORLD HILLSBOROUGH
PLANT LOCATION: Tampa, FL

APPLICATION:
PRODUCT: WASTE-TO-ENERGY
CAPACITY (lb/hr): BOTTOM ASH
100,000 LB/HR (50 TPH)
BULK DENSITY (lb/ft³): 45-60
DUTY: 24/7
DRIVE: HDC-40 / 6.0 / LH
CONVEYOR PAN SIZE: 48/70"W x 11 5/8"D X 190'-1 3/16"L

TIMELINE:
DATE (1):

2007. Covanta Energy – Hillsborough purchased their first Slipstick Horizontal Motion Vibratory Conveyor to replace an aging spring driven natural frequency style conveyor.

The new Main Ash Slipstick Conveyor was designed to handle a maximum of 100,000 pounds of hour of quenched MSW bottom ash with a bulk density of 45 to 60 pounds per cubic foot, in a temperature range of 0° F to 200° F.

The conveyor pan was fabricated from 3/8" thick thru abrasive resistant steel plate 48" wide at the bottom, 72" wide at the top, and 12" deep. Total length of the pan was 202'-6" long from the conveyor's feed end to the tip of the grizzly bars.

The Slipstick drive unit was a number HDC40 gear coupled, parallel shaft differential inertia drive that was attached to the continuous pan/truss assembly by a drive adapter located at the feed end of the conveyor. The drive adapter transmitted the inertia load horizontally from the drive to the pan/truss assembly.

The entire 202-foot drive/pan/truss assembly was freely suspended from suspension rod assemblies. Nominally spaced 15-20 feet apart, the pairs of telescoping rigid pedestals were installed upon existing concrete sub-bases to allow setting the conveyor at the proper elevation.



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DATE (2):

2023. After sixteen years of continuous 24/7 operation in the harsh, abrasive ash environment, the Slipstick Conveyor was approaching the end of its useful life. REWORLD – HILLSBOROUGH (rebranded from COVANTA) decided to replace the original Slipstick with a new Slipstick Horizontal Motion Conveyor.

CUSTOMER CHALLENGES:

- Over the years, the harsh environment had taken a toll on the structural steel within the concrete sub-bases resulting in a degraded, unreliable base that supported the Slipstick. Once out of alignment and in conjunction with the negative effects of corrosion, the conveyor pan experienced fractures.
- Damage to the discharge grizzly section throughout the years drove the need to replace the grizzly.
- The Slipstick pan needed to be reset as it had become out of level.
- Demolition of the existing conveyor followed by installation of the new conveyor needed to occur during a tight window in order to keep the plant from being down.

SOLUTION:

- A new Slipstick Horizontal Motion Conveyor was purchased, installed, and suspended from new telescoping rigid support pedestals.
- The support pedestal pairs were relocated to either new steel sub-bases or reinforced concrete sub-bases during the first phase. During the second phase, the remaining concrete sub-bases will also be replaced with steel sub-bases.
- To reduce the plant downtime, the new support pedestals and sub-bases were scheduled to be located prior to shutdown.
- The new conveyor pan's length was shortened to 190 feet to accommodate an independent grizzly unit and thus free up the conveyor.

TRIPLE/S ADVANTAGE:

- Without being tied to components such as belts and rollers, Slipstick conveyor pans utilize suspension rods typically spaced at intervals of 10-15 ft apart.
- Slipsticks convey product along a continuous pan consisting of bottom and sides (and gasketed covers, if needed), and therefore, eliminates opportunities for product loss off the sides.
- Few spare parts or maintenance items required.



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- Slipstick pans often fit within those tight spaces. The pans can be narrow & tall OR wide & short to accommodate the client's capacity.
- Free of vertical pitching forces, the self-balancing forced vibration Slipstick Horizontal Motion Conveyor moves the pebble lime with a pure sliding motion.
- With the Slipstick Conveyor, the driving differential force is in line with the conveying direction, no vertical force component. Relative motion between the pan and material is pure sliding. Doesn't create dust.