



Wood Products Manufacturer
**En-Masse Twin Chain Retrofit Gets Operation
Running at Full Capacity**



THE SITUATION

A Brazilian manufacturer of OSB and MDF wood-based products used en-masse conveyors to move raw materials from off-load to distribution and manufacturing. Poor design and small conveyor size—complicated by incorrect flight selection—meant the conveyors could not handle the required loads or the characteristics of the material.

**THE CONVEYORS NEEDED
A REDESIGN TO IMPROVE
OUTPUT CAPACITY.**



The detrimental impact of misapplied conveying technology on manufacturing output.


THE CHALLENGE

After two years on a continual repair-and-replace cycle, the plant sought alternatives for the conveyors.

CDM WAS CALLED TO THE SITE TO ANALYZE THE CURRENT SYSTEM AND RECOMMEND A SOLUTION.

Upon review of the application and equipment, CDM submitted the following summary to the facility managers:

- Conveyors did not meet design capacity criteria
- Improper chain application
- Undersized and misapplied gear reducer
- Poorly designed conveyor housing and return system



CDM needed to cost-effectively redesign the existing conveyors to increase capacity and meet the plant's production goals, and solve for component failure due to chain breakage, bent flights and excessive wear.

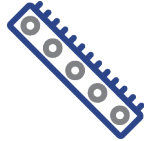
THE SOLUTION

CDM redesigned the undersized conveyors to handle the full volume of chips and flake. The primary conveyor needed to handle product from six flakers without plugging and shutting down.

PRODUCTS UTILIZED



Drop-Forged
Chain



En-Masse
Conveyor

Redesign strategy: Increase the conveyor's sidewall height

Redesign method: Bolt formed channels to the existing sidewall



THE SOLUTION

These extensions, combined with elevating the chain return rail, increased the area required to meet the capacity without increasing chain speed.


A zero speed switch and a CDM-exclusive Kick-Out End Flap were added to each conveyor, serving as a plug chute and chain break indicator. These significantly reduced damage and downtime.

Another trouble spot was the misapplication of the chain. Because no two strands of chain wear at exactly the same rates, a conveyor can eventually fail when the chain lengths become uneven. CDM corrected this with its exclusive Twin-Strand design, which has independent take-ups/chain tensioning.

Benefits of Twin-Strand Chain Design:

- Increases chain strength
- Increases chain flight strength
- Eliminates dangers of uneven elongation
- Eliminates bent flights

CDM provided the wood product manufacturer detailed fabrication drawings of the modifications to the existing conveyor to accommodate the conversion. The company used the drawings to hire local contractors to perform the fabrication and installation.



Many of the conveyor lengths were longer than 150 ft. (46 m). At this long span, CDM knew the dual strand design would not be the best selection.

THE RESULTS

Using local subcontractors saved thousands of dollars in shipping costs and taxes/tariffs on US-supplied components. CDM also provided fabrication details and design criteria for the terminal station retrofit, which were needed for the Twin-Strand design.

To support the full output capacity, CDM engineered a new drive package that could be purchased locally and supported the full material handling requirements.

CDM RELIED ON THEIR 40-PLUS YEARS OF EXPERIENCE IN BULK MATERIAL HANDLING AND EN-MASSE CONVEYOR DESIGN TO SATISFY THE MANUFACTURER'S GOALS AND RAISE PRODUCTION TO PEAK LEVELS.

Since the completed retrofit, the manufacturer has met full production targets and improved its bottom line.

The success of the project has led two sister companies of the wood product manufacturer to contact CDM for assistance with their struggling conveying systems.

