

Application: Corrugated Container Plant - Folder-Gluer

Data

OEM: Martin
Environment : Indoor, ambient temperature
Product on belt: Flat board with a slick surface. Varying sizes

Process description:

After leaving the dye cutter the board enters a folder gluer. In the folder-gluer the board is transported on two conveyor belts. The lower folding belts (pink) are next to each other with approximately a 25" (635mm) space in between. In order to prevent the corrugated board from sliding out of position, the two lower belts are under constant vacuum.



Not operating

First glue is added on the board. Then the parts of the board that have to be folded to the middle, hit folding rails. These rails, together with a second pair of conveyor belts (the upper folding belts) are running in conjunction to perform the folding process. This second pair of belts has soft pieces of rubber attached to them that act like fingers when folding the boxes. At the end a wheel is rolling between the two conveyors, this wheel presses the glue to the board.



Operating

Lower folding belt requirements:

Grip:

Since the surface board is very slick, the belt has to be very soft to grip the cardboard.

Non marking:

The covers of the belts may not discolor the board.

Previous Belt Problem:

3-ply Linatex with mechanical fasters

Because the vacuum belts runs over a sliderbed in a very abrasive application, the lace wears out easily. The belts were laced with mechanical fasteners and had a trailing flap sewed on to the bottom ply to protect the bed from the metal fasteners. As soon as the flap loosened from the lacing, the lacing wore out, and finally broke loose. Therefore the belt had to be replaced twice a week. This took two employees two hours each time. Replacement

was so frequent, the company purchased a lacing machine. Also, the lacing wore deep grooves in the slider bed, forcing replacement every year.

The company guarantees their customers a delivery time of one day, and cannot afford any unscheduled downtime. In this production process the folder-gluer machine is a bottleneck, and it is critical it remain in operation.

Solution:

Chemprene Big Pink ZipLink

ZipLink is made endless without lacing. There are no lace failures and there is no damage to the slider bed on the machine. The service life of the ZipLink belt is approximately 1 year, double that of the previous belt.

| Belt Replacement Cost Savings Analysis: | | | |
|--|------------------|------------------------------|-------------------|
| <i>Chemprene Big Pink ZipLink</i> | | <i>3-ply Linatex</i> | |
| Lifetime | : 12 months | Lifetime | : 6 months |
| | | Yearly relacing downtime * | : 108 hrs |
| | | Lacing machine (initial) | : \$1,200 |
| Belt cost | : \$ 2,500 | Belt cost | : \$ 5,000 |
| Installation labor (in House) | : \$ 35 | Relacing labor** | : \$ 3,640 |
| | | Slider bed replacement | : \$ 4,000+ |
| | | Total Cost (6 months) | : <u>\$ 8,640</u> |
| Total Cost (12 months) | : <u>\$2,535</u> | minus Total Cost (12 months) | : <u>\$21280</u> |
| = Yearly Savings using ZipLink: \$ 18745 | | | |
| + \$1,200 Initial costs for lacing machine | | | |
| + 108 hours of downtime | | | |
| * The previous belt had to be relaced twice a week. This took 2 employees 2 hours a time. That is 52 weeks times 4 hours a week. | | | |
| ** 2 Employees times 4 hours times 26 weeks time \$35 hourly wage. | | | |

Details:

Minimum pulley diameter : 3" (76.2mm)
 Center to center distance : 37'5.3" (11.41m)
 Belt width : 6" (152.4mm)
 Speed : 100'/min (30.48 m/min)
 Splice : ZipLink
 Support : Slider bed
 Number of belts : 2
 Vacuum holes diameter : 1" (25.4mm)

Remark:

In this application there are no special standards required, the belts do not incline nor decline, have no knife edges, no crowning, no reverse bends, no scrapers, and are not troughed.

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