RUBBER & PLASTICS INC.

The Conveyor

Fall 1999

Rubber Ron's Report

Hurricane Floyd Fails to Stop NIBA Convention

Despite the fear caused by Hurricane Floyd and the intense 50-70 mph winds, 500 National Industrial Belting Association (NIBA) delegates made it to this year's convention in Orlando, Florida. There were stories of cancelled flights and airport closures. One couple from South Africa accumulated more than 40 hours in the air before finally arriving. Our hotel, located on the Disney World campus, sent us daily updates on the hurricane, and for the first time, the theme park closed for a day. Finally, once everyone settled in, we saw new products, received an update from the Technical Committee, and heard two excellent motivational speakers.

"It's state-of-the-art."

The Conference Booth Program was the highlight of the convention. Manufacturers shared several new and interesting products. We saw new hybrid splices (part rubber, part metal); belt vulcanizers with a digital heating and cooling control system and an automatic shutoff mechanism; and belt scrapers with segmented, replaceable, polyurethane blades. R & P is now selling the hybrid splices and belt scrapers, so call us for more information and pricing.

The Technical Committee reported that, for the first time, the Rubber Manufacturer's Association (RMA) invited NIBA to contribute belting information to their organization. I think this moves NIBA closer to being "the authority" on belting standards in North America. In addition, the committee provided us with an update on how ISO9002 is affecting belting standards.

At this year's convention, we benefited from two excellent keynote addresses. Keith Herrell (*Attitude is Everything*) and Tom Winniger (*Marketing: Mystery, Magic, or Method*) gave us insights into running our businesses more effectively.

Finally, my one-year term ended as NIBA's Treasurer, and I now take on the position of Second Vice President. I am the Program Committee chair for next year's convention, tentatively called The Rubber Revolution. I am already looking forward to planning the event and reuniting with everyone in Boston next September.

9-9-99 Computer Update

Rubber & Plastics successfully installed new Y2K compliant hardware and accounting software. We have tested both systems and are 100% sure that we will not have any interruptions with our invoicing process when the new year begins.

However, in case we have a power outage or some other problem, I am contacting a source in England for the name of a "London man [who] checked himself into a hospital saying that he'd swallowed the Millennium Bug. The unidentified man believed that by keeping the bug inside him, he would save millions of lives, even though he would die." *(Source unknown)*

In This Issue

RUBBER & PLASTICS INC.

SPECIAL TECH NOTES

CLIP AND SAVE FOR FUTURE REFERENCE

Pulley Lagging

If you want your conveyor systems to run more efficiently and economically, with less downtime, you must reduce the loads and wear on the conveyor system components. Although an often overlooked option, pulley lagging can reduce problems on existing conveyor systems and prevent problems from occurring on new installations. The use of lagging can:

- ✔ Prevent belt slippage (the primary reason for using lagging).
- ✔ Reduce wear on pulleys due to abrasive materials.
- ✔ Reduce the size of the drive, take-up, and other conveyor system components. (This can be extremely important because of the financial investment required for new conveyor systems.)
- ✔ Promote effective water shedding away from the pulley/belt interface.
- ✔ Increase drive pulley friction with the belt. (This reduces system loading on the drive, belt, pulleys, bearings, take-up, etc.)

Pulley lagging comes in a number of different styles and shapes. Lagging thickness can vary from several thousandths of an inch (for sprayed on coatings) to greater than one inch for some solid rubber varieties. The most common versions of heavyweight belt lagging are either rubber, ceramic, polyurethane, or ceramic tiles embedded in a rubber, fabric, or other material base. Rubber and ceramic tiles embedded in rubber (offered in both strip and sheet form) are used most frequently. Lightweight, monofilament belt lagging can be cast urethane, 65-75 durometer rubber, rubber or urethane tubing, or even rough-top belting.

Cutting a knurl in a lightweight, belt metal drive pulley can provide increased drive. However, this practice can cause premature belt wear of bare polyester fabrics. Use this practice with caution or avoid it entirely.

Both rubber and ceramic style lagging are molded with grooves to aid in the dispersement of water, mud, and other foreign materials from the lagging/belt interface. For rubber lagging, these grooves generally take the form of a herringbone, chevron, or diamond shape. In the chevron pattern, the grooves meet at the center of the pulley face. In the herringbone pattern, the grooves are offset at the pulley center by one-half of the groove pitch. Regardless of the pattern, the apex points in the direction of belt travel. Ceramic lagging typically consists of multiple rows of ceramic tiles (intended to span the pulley face width as installed) molded into rubber. You can use non-grooved rubber (except for longitudinal grooves running in the direction of the face width for water, mud, etc. dispersement) on non-drive pulleys in abrasive applications.

Heavy-Duty Belting Specials

Call for Prices

182'	x 30" wide	3-ply	450#	3/8 x 1/8	Boston Grade 2
230'	x 36" wide	5-ply	750#	1/4 x 1/16	Boston Grade 1
1020'	x 36" wide	3-ply	450#	1/4 x 1/16	Boston Grade 2
132'	x 42" wide	4-ply	600#	3/8 x 1/8	Boston Grade 2
190'	x 48" wide	6-ply	1200#	3/8 x 1/8	US Rubber Grade 2
197'	x 48" wide	4-ply	440#	1/2 x 1/8	Scandura Grade 1
281'	x 48" wide	3-ply	450#	3/8 x 1/8	US Rubber Grade 2
38'	x 48" wide	2-ply	800#	1/4 x 3/32	Georgia Duck Grade 1
32'	x 48" wide	2-ply	800#	1/4 x 1/8	Georgia Duck Grade 1
62'	x 48" wide	2-ply	800#	1/4 x 1/8	Georgia Duck Grade 1

Sometimes you just have to take the leap and build your wings on the way down.

–Kobi Yamada

Call Toll Free: 1-800-234-2358

SPECIAL

TECH NOTES

CLIP AND SAVE FOR FUTURE REFERENCE

Pulley Lagging (cont.)

Common methods of attachment are bolting, cementing, tack welding, and vulcanizing. Globally, the preferred methods are cementing and vulcanizing. Cold bonding has become most popular in recent years. The bolt-on and weld-on methods are used predominately in North America. When lagging a crowned pulley, use caution when selecting and applying the lagging so that you do not eliminate the pulley crown.

You should always use lagging on the drive pulleys in steel belt and other high modulus conveyor belt applications. You should also use it on any pulleys in these systems that contact the carrying side of the belt. For high-tension belt applications, we recommend vulcanized rubber, cold-bonded rubber, and ceramic lagging.

When deciding between rubber and ceramic lagging, you should consider several factors.

- ✔ How severe is the belt slippage? Ceramic lagging typically can provide two-to-three times more drive friction than rubber lagging.
- ✔ How much water, mud, etc. is in the system? How severe is its effect on the drive, between the belt and pulley? Even rubber lagging has limited drive friction if there is a significant amount of water, mud, etc. Ceramic lagging, particularly those with "dimples" (protruding ceramic shapes that embed themselves into the belt surface), can typically provide two-to-three times more drive friction than rubber lagging.
- ✔ How abrasive is the environment? Ceramic lagging has greater resistance to wear than rubber lagging.
- ✔ You should analyze the conveyor system for both design and operating conditions. If they are too severe, the lagging may not be able to overcome the deleterious effects. If the lagging cannot mask them, then slippage between the belt and lagging can occur. Under these conditions, ceramic lagging causes more belt wear than rubber lagging. Note that neither rubber nor ceramic lagging will cause belt wear in a properly designed and maintained conveyor system.

Hot Flash

R & P has perfected a method for vulcanizing rough-top lagging. The lagging bonds directly to the pulley in the vulcanizing process. This creates thousands of fingers that grip the belt and reduce slippage. The irregular surfaces increase the rubber's tractive capabilities and help keep the rubber clean.

A. 3/8" thick, black, smooth vulcanized lagging
B. Lagging with herringbone grooved pattern
C. 3/8" thick, 60/70 duro, black, vulcanized rough-top rubber

If you prefer to use traditional strip lagging, please contact us, and we will send you the specifications and other technical information you need.

- ✔ The initial investment for ceramic lagging is higher than rubber lagging. However, you should review both options to see which will work best with your system.

Coefficient of friction values for lagged and non-lagged pulleys should not be used as absolute values. They provide general relationships and conservative values for general application purposes. Use the values below for comparative purposes only.

Condition	Non-lagged Pulley	"Groved" Rubber Lagging	Ceramic Lagging
Dry	.25	.4	.75
Wet	.2	.25	.5-.7
Wet w/mud	.05-.1	.15-.2	.4-.5

If you decide to lag one or more pulleys in a conveyor system, contact R & P for an analysis of the system's conditions and lagging recommendations.

From an article by John Winkelman
Flexible Steel Lacing Company
Member, NIBA Technical Committee

RUBBER & PLASTICS INC.

BULK RATE
U.S. POSTAGE
PAID
PORTLAND, OR
PERMIT NO. 681

1313 N.E. Lombard Place
Portland, OR 97211

Phone: 503 289-7720 • 800 234-2358
Fax: 503 289-8920

Web site: www.conveyorbelt.com
E-mail: randp@conveyorbelt.com

RUBBER & PLASTICS INC.

Product Line

CONVEYOR BELT
Heavy-Duty Rubber Belt
Light-Weight Rubber Belt
PVC, RMV Belt
Rough-top (Profile) Belt
Food Handling Belt
V-Cleat Belt
Mini-Chevron Belt
Integrally Molded, Cleated Belt

CUSTOM FABRICATION
Cleated Belt
Chevron Pattern (Open, Closed)
V-Guides
Corrugated Sidewall
Vanner Edges
Dewatering Belts
Elevator Belts
Specialty OEM Applications

ADHESIVES
Truflex/Pang Products
Belt Splice Kits
Neoprene Contact Cement
PVC Cement
Urethanes

CONVEYOR PULLEYS
Drum Type Pulleys
Wing Type Pulleys
Motorized Drive Pulleys
Vulcanized Lagging
Rough-top Lagging
Pad-Lag/Slide-Lag
Magnetic Pulleys

SHEET RUBBER, ETC.
Skirtboard Rubber
Crown Bar Rubber
Pure Gum Sheeting
Metal Back Rubber
Chute Lining
Neoprene Sheeting
Urethane Sheeting

CONVEYOR IDLERS
Troughing Idlers
Return & Flat Carrier Idlers
Impact Idlers
Self-Aligning Idlers
Live Shaft Idlers
Replacement Rollers
Food Grade Idlers
Sleeve & PVC Idlers

SPECIALTY ITEMS
Bolt-On Cleats
Dock Bumpers
Floor Mats
Cut Parts
Trailer Flaps
Belt Scraper Blades

OTHER SERVICES
Conveyor Consulting
Engineering & Technical Assistance
Field Service & Vulcanizing
Belt Surveys
Field Splicing, Repairs, & Installations
Used Belts

Call Toll Free: 1-800-234-2358