

# MERCURIO NEWS

ISSUE #1 • APRIL 2018



## MERCURIO EXPANDS PRODUCTION TO NORTH OF BRAZIL



**A** company established 72 years ago and the leader of Brazil's conveyor belt industry, Mercurio has once again solidified its pioneering position by expanding its operations. The company brought its huge business capacity to the north of Brazil by opening a new plant in the Industrial District of Marabá, state of Pará, in October 2016.

Total investments of R\$100 million into 100,000 square meters of land and three-shift operations led to 200 new jobs, significantly supporting regional development. Mercurio believes that the Marabá Unit plays a strategic role in consolidating the company's leadership in the domestic conveyor belt industry, and also enables the expansion of its global operations.

After the first stage of gradually increasing production and calibrating machinery, the plant is now fully operational, including the rubber compound mixing plant inaugurated at the end of 2017.

Mercurio's CEO, Ivan Zanovello Ciruelos, deems the company's Marabá operations a success. "This is the result of the company's commitment to long-term strategic goals. Thanks to this vision and strict planning, we were able to overcome the challenges inherent to such projects and share very positive news," concluded Ciruelos.

The new plant, which takes up nearly 30,000 square meters, was devised based on the line production model and is smart and optimized, adopting innovative strategies to achieve high-performance results.

As required by law, the plant has adopted technologies with lower environmental impact, such as waste reduction and treatment of all wastewater. The new facilities are equipped with natural ventilation, energy co-generation and daylighting systems, as well as a system for reuse of rainwater and drainage, in accordance with the Brazilian Association of Technical Standards (ABNT) and other standards established for the ISO 14000 certification.

"Mercurio's Marabá Unit plays a key role in the company's growth plan. This was a major step to make Brazil self-sufficient in conveyor belt production, a feat we are very proud of," emphasized Walter Kawall, Chairman of Mercurio's board.



# SUSTAINABLE LEADERSHIP

WALTER KAWALL, CHAIRMAN OF THE BOARD, EXPLAINS HOW MERCURIO INVESTS IN INNOVATION AND EXPANSION OF PRODUCTION AND DISTRIBUTION CAPACITY TO STRENGTHEN ITS MARKET LEADERSHIP

**M**ercurio was founded in 1945 by two professionals from the textile and rubber industries.

After having achieved excellence in its original product line, it took wing with high-performance industrial solutions. Mercurio currently has two production plants. One is located in the city of Jundiaí, state of São Paulo, and the other in Marabá, state of Pará.

Mercurio's board of directors includes Walter Kawall as chairman, his three brothers and independent members. In this interview, Walter discussed Mercurio's goal to become its clients' preferred partner with a comprehensive portfolio of specialty products and services. With 72 years of operation and annual revenue of R\$300 million, Latin America's largest conveyor belt manufacturer wants to achieve a lot more!

**What role does the board play in Mercurio's strategy?**

Our management has been professional for a few years and we do not take part in any operating issues, which has proven to be the right choice. We follow the same standards as large companies, where the board monitors projects and weighs in on strategic decisions.

**What is the importance of having a market CEO?**

It is because of our executive staff's

comprehensive experience and knowledge of their fields that we have been operating with excellence for 72 years. The same rationale applies to the CEO, who was formerly Mercurio's CFO.

**How does Mercurio position itself against competitors?**

Our competitive advantage is due to our close relationship with clients and the excellent services we provide. We are the clear leaders of the domestic market and Latin America's largest conveyor belt manufacturer. The Marabá Unit is the only plant in this industry located in Northern Brazil. We monitor market conditions, but our focus is to grow and strengthen our leadership.

**What does Mercurio do to stay at the top?**

Our growth plan includes consistent planning of projects divided into various fronts. It starts with increasing production capacity with the plant in Marabá, which is connected to the global expansion front, driven by the Chilean business unit and export activities. Thus we are paving the way for achieving leadership in all of Latin America. We are also monitoring the domestic market and believe there is a need to increase agility, especially in the light conveyor belt segment. That's when we came up with the idea for the

“ Our competitive advantage is due to our close relationship with clients and the excellent services we provide ”

Walter Kawall  
Chairman of the Board

Mercurio Distribution Center, in Jundiaí, which has the highest inventory of light conveyor belts in Brazil. Lastly, we are constantly looking for ways to improve processes and management.

**What are your expectations for the Marabá plant?**

The plant plays a key role in our growth plan. It allows us to maintain domestic leadership and expand operations throughout Latin America. It was devised based on the line production model and is smart and optimized, already performing well. We chose Marabá because of its strategic location and high social and economic potential.

**What about the distribution center opened in 2016?**

We needed to expedite the shipment of light conveyor belts. The initiative expanded our distribution capacity to the domestic and South-American markets. It represents our commitment to service excellence.

## EDITORIAL

### CONNECTED TO SOCIETY

**A**t the time of its founding, it would have been hard to predict Mercurio's potential for social impact. Now, more than 70 years later, the company is an example for the region of Jundiaí and the entire country, due to its strong operation.

Mercurio is essentially a Brazilian company, which uses domestic workforce and inputs to help our economy grow. Therefore, expanding to the north of the country with the Marabá Unit makes perfect sense within the bold growth plan established by the leading conveyor belt company.

As a result, it became imperative for Mercurio to come up with an official channel to communicate with the market and society. This is the purpose of this newsletter featuring an introduction of our fronts of operation, which are many and increasingly relevant. That's why we plan to establish an even stronger bond with everyone around us!

Enjoy your reading!

Ivan Zanovello Ciruelos

## EDITORIAL BOARD



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## MERCURIO APP

### EVERYTHING YOU NEED AT THE TOUCH OF A SCREEN!

**C**reated to provide clients with a more comfortable experience, the Mercurio App gives access to the company's product portfolio, news, video lessons and even manuals and other technical information in a safe, fast and convenient way. The Mercurio App also allows you to access the entire content of the Mercurio News newsletter.

#### MERCURIO SMART

Another benefit of using this tool is Mercurio Smart, which allows clients to manage their conveyor belts. The app helps track the performance of conveyor belts in operation by creating a history of replacements and lifespan. All seamlessly, conveniently and automatically.

With this information at hand, our clients feel more confident to make decisions to improve results and gain productivity.

The Mercurio App is free of charge and is available for Android and iOS. You can download it to your smartphone or tablet.





# REMARKABLE PERFORMANCE

## REPLACEMENT OF CONVENTIONAL CONVEYOR BELTS WITH AN ARAMID SOLUTION IN THE ANGLOGOLD ASHANTI OPERATION MORE THAN QUADRUPLED DURABILITY AND LED TO SAVINGS OF OVER R\$1.2 MILLION IN THREE YEARS

The Serra Grande unit of Mercurio's client AngloGold Ashanti, located in the city of Crixás, state of Goiás, uses conveyor belts in its underground mining operations to extract quartz, dolomite and graphite schist.

The extracted material has high granulometry, lamellar shape and presence of sharp particles. David Souza, Account Manager at Mercurio, explained that "this is a very crude ore, and it feeds the entire crushing process."

In one of his regular visits to clients with the Mercurio team, Souza identified a critical issue in the mine's operation. "It

came to my attention that they were replacing the product every eight months or less due to wear and tear," he said, referring to the conveyor belt that carries the ore extracted from the mine. "Since it's a high-cost product, I informed our technical team so we could evaluate the case and find a solution," he concluded.

After all, in addition to the high cost of conveyor belts, frequent maintenance shutdowns or replacements due to product loss would result in many idle hours and low productivity.

### ARAMID SOLUTION

At the time, in the second half of 2014,

Mercurio was developing a product that is currently the highlight of its portfolio: the aramid conveyor belt. Having undergone the necessary evaluations and specifications to adjust to the company's operations, the aramid conveyor belt was supplied to AngloGold Ashanti on a trial basis in December 2014. "The aramid conveyor belt way exceeded initial expectations that it would last 12 months; 36 months later, it's still operating 24 hours a day," celebrated Souza. "The expectation now is that it will remain in operation for many months to come," he added.

Since it's an extreme operation,

there was one incident during this period that caused some damage to the conveyor belt, though much less severe than in previous incidents. A shutdown was scheduled for repair, eliminating the problem as Mercurio's instructions were followed.

The client was very satisfied with the amount of resources, time and

workforce saved. "They have achieved operational security and reliability. They no longer need to allocate workers to maintenance activities," Souza pointed out.

The result was so satisfactory that AngloGold Ashanti now uses the aramid solution in other applications. The product performed extremely well, espe-

### ESTIMATED MONTHLY EXPENSES ELIMINATED BY THE ARAMID CONVEYOR BELT

MAINTENANCE	MONTHLY AMOUNT	NUMBER OF MONTHS	TOTAL AMOUNT
Materials	R\$ 13,040.00	36	R\$ 469,440.00
Workforce	R\$ 22,400.00	36	R\$ 806,400.00
Total savings provided by the aramid conveyor belt			R\$ 1,275,840.00

### ABOUT ARAMID

Mercurio's aramid conveyor belt has the name of the canvas it is made of. This material is five times stronger and lighter than steel. As such, it has extremely superior tensile strength, weight tolerance and stretching capacity.

Its performance is so impressive that in some applications it can even replace steel conveyor belts. However, its performance stands out the most in severe applications, such as the Serra Grande mine. In such environments, the aramid conveyor belt has proven to be highly resistant to ripping and capable of absorbing strong impact.

cially with materials of higher granulometry, providing great value for money.

The aramid conveyor belt is not only more resistant, but it also weighs less, therefore requiring less energy to operate. According to the client's estimates, savings reached 8%, allowing for the replacement of a 30cv drive with a 25cv drive.

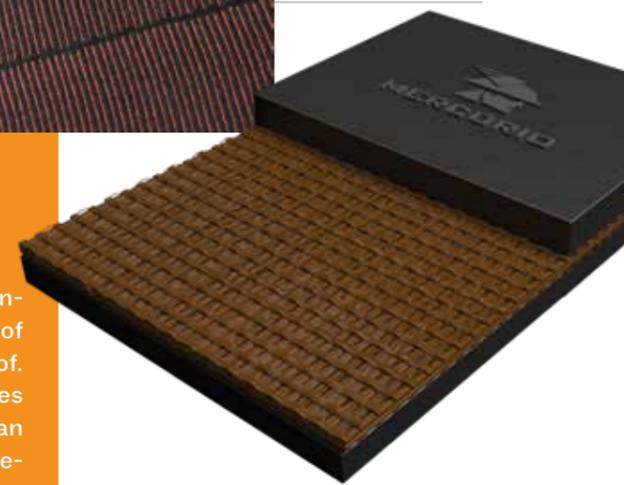
### HIGHER VALUE FOR MONEY

Compared to the previous solution, considering acquisition costs only, the aramid conveyor belt was more expensive.

However, throughout its 36 months of operation, the aramid conveyor belt has accounted for savings of over R\$1.2 million for AngloGold Ashanti. The gains are not limited to the cost of the conveyor belt per se. The client no longer has two shutdowns every month, significantly increasing productivity.

After all, since the aramid conveyor belt doesn't need to be replaced every eight months, the acquisition cost has been absorbed. Moreover, AngloGold Ashanti no longer has high maintenance costs and has remained operational.

The experience has been very positive for the client, despite their initial fears regarding the thinness of the conveyor belt, which has only one canvas, as opposed to three in the previous model. Upon installing the new conveyor belt, the client was able to witness the true performance of aramid, which does not change position, has very low dilation and is highly resistant.



# CONVEYOR BELT SYSTEM

LEARN MORE ABOUT THE COMPONENTS AND OPERATION OF THESE EXTREMELY RELIABLE SYSTEMS, CAPABLE OF CARRYING LARGE AMOUNTS OF CARGO ACROSS LONG DISTANCES AND AT LOW COSTS

Using complex mechanisms and high-end technology, conveyor belt systems are based on very simple concepts.

To understand what they are and how they work, think about the use of conveyor belts on supermarket cashier counters. They expedite the checkout process, allowing hundreds of customers to checkout in a row.

The same principle applies to moving pathways that help people go faster from one spot to another in large venues, such as airports.

## SOLUTION ON AN INDUSTRIAL SCALE

The same concept applied on an extremely larger scale inspired the development of conveyor belt systems. These systems are commonly used in industrial and mining operations, carrying a variety of materials from one location to another at lower costs and in the shortest time possible.

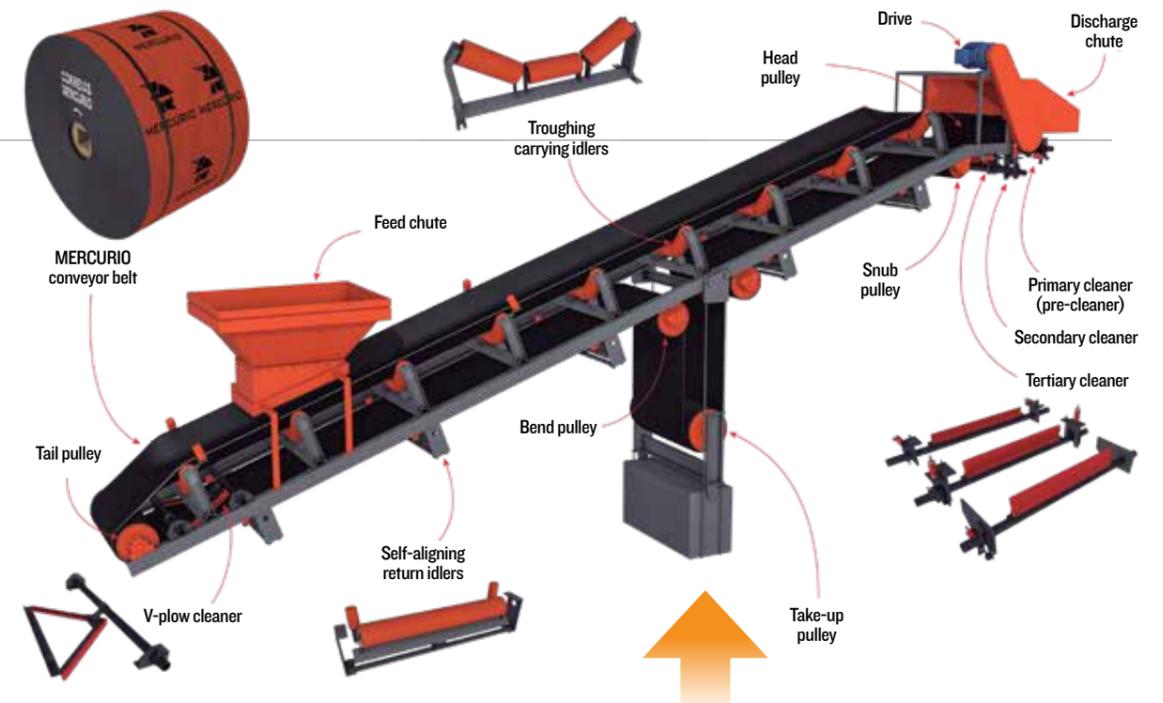
They are essentially the same: a conveyor belt is a large and strong rubber strip, stretched around two or more pulleys and running at a specific speed to carry large amounts

of materials across long distances. It is a strong and reliable method capable of overcoming adversity, such as steep terrain, natural obstacles or sharp bends.

They are commonly used in crushing and sieving operations, loading and unloading of freight cars and ships, and stacking and recovery activities. They can carry materials of various sizes, shapes and consistencies, always at a lower cost per ton.

## CHARACTERISTICS OF THE OPERATION

Alan Ferreira, Technical Support Engineer at Mercurio, explained that “the speed of a conveyor belt is inherent to the amount of material expected to be transported by the system.” In some cases, they go faster than 6.0 m/s.



On the other hand, a system’s cargo capacity is directly related to its width, speed and filling level, i.e. the amount of material that can be placed on top of the conveyor belt. “We have systems in Brazil with capacity for up to 24,000 tons per hour,” he pointed out.

Conveyor belt systems provide high performance, speed and savings in materials handling. They are also extremely reliable. “The most common problems are related to lack of maintenance of the systems and its components,” said Ferreira.

## VERSATILITY

According to Ferreira, “the highest demand for conveyor belts comes from the mining industry.” However, the solution is not only used to carry ore (iron, copper, bauxite, nickel), but also beans (corn, soy, wheat), food products (sugar, coffee), chalk, petroleum coke, coal, sacks, boxes and many other applications.

These systems are versatile and appropriate for a wide range of materials, and can also travel various distances, from a few feet to many miles.

Ferreira explained that the “length of a conveyor belt depends on the project and layout of each system, the location of the mines and the processing facilities. Conveyor belts operating long distances have a specific name: Long Distance Conveyor Belts (LDCBs).

## SYSTEM OPERATION

To understand how a conveyor belt system works, you need to know its components, as shown in the illustration.

They are:

- ▶ **DRIVE UNIT:** comprising the drives, fluid coupling, speed reducers and pulleys, it is responsible for running the belt and the transported cargo
- ▶ **HEAD PULLEY:** activated by one or more drives, it transfers the power of the drive to the belt by friction
- ▶ **SNUB PULLEY:** increases the contact area between the belt and the surface of the pulley, improving motion and preventing slippage
- ▶ **TAIL PULLEY:** changes the direction and orientation of the belt and, in some cases, tensions it
- ▶ **BEND PULLEY:** usually located in the take-up units, it changes the direction of the belt running
- ▶ **TAKE-UP PULLEY:** it tensions the belt, improving performance and preventing slippage
- ▶ **SET OF TROUGHING CARRYING AND RETURN IDLERS:** supports

the conveyor belt and the transported cargo running in both directions

- ▶ **FEED CHUTE:** a funnel-shaped device that receives the transported material and feeds it onto the belt
- ▶ **DISCHARGE CHUTE:** usually located next to the head pulley, it is responsible for discharging the material to the desired spot
- ▶ **CLEANING UNIT:** comprising cleaners and scrapers, it removes any remains of the transported material from the belt surface
- ▶ **COUNTER WEIGHT:** prevents belt from slipping on the head pulley, offsets variations in belt length caused by stretching, and adds more length for emergency splicing
- ▶ **SKIRT BLOCK:** located next to the feed chute, it helps centralize the material on the belt, preventing it from spilling over the side edges
- ▶ **CONVEYOR BELT:** the most important item in the whole system, it transports the material from one location to another



## MERCORIP: COVER FOR SEVERE APPLICATIONS

SPECIAL RUBBER COMPOUND INCREASES PRODUCTIVITY AND REDUCES MAINTENANCE IN TRANSPORTATION OF SHARP MATERIALS AND HIGH-IMPACT CONDITIONS

Seeking to offer solutions fit for challenging demands, Mercurio developed the conveyor belt cover MercoRip. “It’s a rubber compound developed for applications with a high level of impact and ripping caused by the transported material,” explained Alan Ferreira, an Engineer at Mercurio.

The cover was developed in accordance with the needs of clients with extreme applications. Its specification is particularly recommended for lamellar materials with high granulometry and frequency of impact, i.e. very large and heavy rocks with extremely sharp edges and sides.

It is also recommended for conveyor belts systems with a fast evolution cycle, taking little time to complete a full circuit.

### OPTIMIZED OPERATION

With strong performance and high durability, MercoRip has a much longer lifespan than the market average. In high-impact applications, it significantly reduces cost per transported ton by decreasing the number of non-sche-

duled shutdowns. Consequently, it increases the equipment’s operating time and provides direct productivity gains.

MercoRip also has greater resistance to stretching and ripping, as well as high resilience. This means that the conveyor belt returns to its original shape after undergoing elastic strain.

### COMBINED SOLUTION

Depending on the application needs, MercoRip can be used together with other technologies developed and offered by Mercurio. It can be used in combination with an aramid framework, steel cables or tarps and various protection unit accessories, such as Rip Proof, Rip Stop and dampening fabric.

MercoRip’s specification is perfect for when there is a “need for a cover rubber working in combination with the conveyor’s framework, as well as accessories that increase its lifespan, supporting the application’s severity,” Ferreira pointed out.

You can find more information about MercoRip and other Mercurio products on the Mercurio App (see App News on page 2).

## SCHEDULE



## MERCURIO’S COLD SPLICING TRAINING

This is the fourth year of our training program in conveyor belt cold splicing, with a theoretical and practical approach.

The program targets Mercurio’s clients who work as engineers, technicians, mechanics and other roles that require the use of conveyor belts.

The two-day program is a differential exclusively offered by Mercurio to its clients, providing comprehensive training in the subject. It covers topics such as conveyor belt components, manufacturing processes, specification and selection, storage and handling, sizes and tolerance, maintenance, theory and practice of cold splicing, among others.

The classes are taught by Mercurio’s Technical Team.

### INFORMATION

#### UPCOMING DATES:

June 6 and 7, 2018

LOCATION: Mercúrio Jundiaí

If you’re interested, please request application to your sales manager or salesperson in charge.