

# Usina de Notícias

Number 22

- **Market** J. Malucelli breaks an RCC compacting record
- **Infrastructure** ASSA works on large projects in Colombia



SPECIAL

## Pavement recycling in Brazil



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# SUMMARY

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THE "USINA DE NOTÍCIAS"  
IS A PUBLICATION OF CIBER  
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**Print run:**  
6,000 copies (Portuguese)  
2,000 copies (Spanish)  
300 copies (English)

**Free distribution.**

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## Recycling technique in Brazil

The companies  
Paulifresa, Pavisan,  
and Terrabrás are  
pioneers and bring  
to their customers  
this method as  
a solution for  
different projects



Page 08

## Chile invests in infrastructure projects



Chilean contractors  
operate in various  
regions, offering their  
services to projects for  
building and improving  
the country's roads

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## Positive **scenario**

**Walter Rauhen**  
Ciber's CEO



OPINION

After the crisis that began in the last quarter of 2008, Latin America's economy has emerged with good indicators of recovery. One of the areas that received heavy investments was infrastructure. In order to follow this trend we continue innovating in solutions and equipment that add value to the work undertaken by our clients. Innovation is a constant in the development of our products, always applying new technologies to the market's needs since this is a constant concern for contractors. Proof of this is that this issue of "Usina de Notícias" is carrying articles of companies of different nationalities updating their technology and innovating their fleet of machines in order to meet the needs of large projects in their countries of origin. This is the case of contractors in Uruguay and Paraguay that acquired new releases such as the Kompakt 500, showing a willingness to invest in cutting-edge technology. In fact, the Kompakt 500 was included on the list of finalists for the German Designpreis 2010 Award. The indication in itself represents a great achievement considering that this award is viewed as one of the most important in the segment of design in the world. Despite its short time on the market, this plant that was launched in 2009 already has in its portfolio winning the gold prize of the 2nd Idea Award/Brazil, which is the national version of the International Design Excellence Award (IDEA) of the United States. This is a recognition of Ciber's effort to develop and produce equipment based on concepts of innovation. We have applied quality programs to raise the level of excellence of our products and processes. The market's positive signs and solid forecasts for 2011 caused the company to increase the installed capacity of Porto Alegre's plant. We have given a lot of attention to this growing market and we do not want to miss any opportunity that this contemporary scenario has to offer!

## Highway safety projects

The contractor Sconntec carries out building projects throughout the entire country. The company focuses its operations on security projects and the development of Brazilian highways such as concrete barriers, which are efficient devices for the protection of vehicles and drivers. Sconntec has already built more than one thousand kilometers of barriers along the roads of the country, serving major customers. Headquartered in Curitiba, the capital city of the state of Paraná, the company recently acquired an SP-150 slipform paver. The equipment is used for concreting small walls and New Jersey barriers. The equipment is also being used for a project of about 250 km between the cities of Osório in Rio Grande do Sul and Palhoça in Santa Catarina.



Equipment in operation along BR-101 in the city of Terra de Areia

## Contractor Río Paraná covers the market in Paraguay

The contractor Río Paraná participates in building projects in Alto Paraná, which is an administrative subdivision of Paraguay. The work includes painting and pavement recovery. The company uses a Kompakt 500 asphalt plant, which is set up in the district of Minga Guazu (about 20 km from Ciudad del Este). With headquarters in the Paraguayan city of Encarnación located 370 kilometers south of Asunción, the Río Paraná began its activities in 1999 in the segment of civil construction and road enterprise in the eastern part of Paraguay.



Company operating with a Kompakt 500 in Alto Paraná



## Deltamaq and Ciber at Exposibram in Belém

Ciber participates to the second edition of Exposibram Amazon from November 22 to 25 in Belém, the capital of Pará (Brazil). The event, which includes the International Exhibit of Mining in the Amazon and the 2nd Congress of Mining in the Amazon, has the theme The Sustainable Nature of the Mining Industry and is for the mining companies in the region. The organizers hope to outdo the marks of 8,000 visitors and 1,000 participants at the congress, which were reached in the previous edition in 2008. Ciber will be represented by its dealer Delta Máquinas, whose subsidiary is located in Ananindeua near Belém. The company's booth of 150 square meters will show a scale model of the Wirtgen 2500 SN surface miner. The cities of Belém and Belo Horizonte take turns to host the Exposibram, which occurs annually. In this edition, the intention is to attract attention



A miniature of the 2500 SM shown at the event was at Bauma 2010

to the sustainability of the mining projects, especially in the Amazon. The chairman of the Brazilian Mining Institute, Paulo Penna, affirms that the current scenario is

very positive for the mining industry. According to him, the estimate is that US\$ 47 billion will be invested in developing new ventures, and of this total US\$ 23.8 billion will be invested in Pará.



## Técnica General does work in the mountainous region of Ecuador

Técnica General de Construcciones has been in the Ecuadorian market for over 40 years in building projects throughout the country. Headquartered in the capital city of Quito, its business focus is on the segment of road building and its scope is nationwide. The company has worked for nearly two years on a repaving project from Pedernales to Tababuela, going from sea level to 2,200 meters above this with all types of soils and conditions. To do this job Técnica General has a counterflow plant model UACF I7 P -2 Advanced. It is an important endeavor because it is the road connecting the coast to the mountainous region of northern Ecuador, reducing the course by two hours.

## Cimasa at a new address

Cimasa, Wirtgen Group's dealer in Paraguay, inaugurated its new headquarters in the Paraguayan city of Asunción. The location holds the administrative department, sales, and a place to exhibit products for the construction, highway, and industrial sectors.

## Resansil promotes a course for customers in Venezuela

The reason why Resansil, Wirtgen Group's dealer in Venezuela, held a workshop for its customers was to develop initiatives aimed at training to add quality to the processes and give more support in the operation and maintenance of asphalt plants. The activity took place in July on the premises of the Institute of Highway and Transportation of the Portuguesa State and brought together about 80 participants. It included 24 hours of theoretical and practical studies addressing issues such as creating, producing, and controlling hot asphalt mixtures.



Group of customers who attended the activity

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The company has applied the technique of **micro fine milling** because it is a solution that **adds agility** in **developing** the project

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# Paulifresa works in the Marginal Tietê building project

**T**he construction work being done along the Marginal Tietê, one of the most important expressways in the city of São Paulo and in Brazil, required different methodologies from the contractors. In the case of micro fine milling, it was used to

erase the old horizontal lane markings for the reorganization of the new ones. The solution was presented and executed by the Brazilian company Paulifresa, which has been investing in this market niche for about 20 years.







Milling during the Smooth Asphalt project in Rio de Janeiro

According to Gabriel Turani, Paulifresa's milling coordinator, the work of micro fine milling is coming along well and meeting the expectations of the contracting agency in the aspects of productivity and quality. "Other methods had been used previously and did not achieve the same efficacy," said the engineer. The company applied in this jobsite the Wirtgen cold milling machine, model W350 and a micro fine milling drum of a width of 35 cm and 120 teeth. Its technology brings benefits such as a fine finish and adherence, which favors the application of micro-pavement and eliminates the deformities that increase the concentration of emulsion and cause spreading and exudation. Furthermore, it is capable of completely obliterating the paint used for marking the road, provides mobility for the team, immediate opening to traffic, and little aggression to the pavement. The W350 is compact and ideal equipment for partial repairs on roads and to remove internal pavements (asphalt or concrete). It makes it possible to reduce the weight of the operation because it has a support wheel that can be pulled in, making it ideal for lane markings.

### Many milestones

Since it started its activities in 1990, Paulifresa has spared no efforts to serve the Brazilian market with leading edge technology, offering its customers technological alternatives and resources that can help contribute so that the services carried out reach a high level of excellence. Since then, the organization has worked on several large projects with pavement rehabilitation services through recycling (more details follow on pages 8, 9, and 10), milling, and micro fine milling. Júlio César Lima e Arantes, the executive director of the company, recalls that the company operated the first milling project in a Brazilian airport as well as at the Interlagos and Nelson Piquet race track. "Many years ago we used this technique to do a job in the state of Roraima, meeting a demand of the Brazilian Air Force. The milling machine was shipped by a Hercules cargo plane." Today Paulifresa participates in the largest milling project in the country, which is connected to the Smooth Asphalt program of Rio de Janeiro. The initiative of the municipal administration in Rio includes 182 thoroughfares and investments of



Júlio César Lima e Arantes, executive director of Paulifresa

R\$ 463.1 million for 700 km of arterial roads in the city. "Milling is common for road repair projects and micro fine milling for efforts of improvement and "comfort" primarily for the concessionaires," says Arantes.



Micro fine milling at the Marginal Tietê

## INNOVATIVE SOLUTION





# Adherence to the concept of recycling

**Brazilian companies** such as **Paulifresa**, **Pavisan**, and **Terrabrás** are on the market **to offer** the **technique** as a **solution** to clients in the **public** and **private sector**

**T**o recycle road pavement when repairing them consists of a cycle that feeds itself, saves time, resources, and minimizes environmental impacts. The contractors in Brazil have already realized its benefits and have found solutions for reaching quality results in road maintenance. Paulifresa and Terrabrás meet the regional and national demands of repairing roads by making use of recycled asphalt.

Road construction projects have a dynamic character due to the natural wear of the roads. Both public bodies and nongovernmental companies try to constantly intervene in order to preserve the technical and operational characteristics of various roads, triggering several actions of conservation. This is because there is a concern to give the user an economical, comfortable, and safe trip. Paulifresa, for example, signs contracts with concessionaires and organizations of private initiative that have public contracts. According to its executive director, Júlio César Lima e Arantes, the work involves major construction procedures and not only functional repair. On the company's résumé are several projects on the main roads and airports in Brazil, taking the concept of recycling to the client. "We spearheaded the first on-site recycling initiative on Brazilian soil on the BR-393 near Além Paraíba (a city in Minas Gerais that lies on the border with the state of Rio de Janeiro). For some years we were pioneers in on-site hot recycling

by importing a Wirtgen Remix setup. But it has been four years now since we decided to invest heavily in this niche and today we are the second largest fleet in the country."

## Leading Edge Technology in Action

Since early October/2009, Paulifresa has participated with Delta Construções in a project of the Highway Department of Rio de Janeiro (DER-RJ) with the goal of repairing 60 kilometers of pavement on the RJ-116 highway in the city of Santo Antônio de Pádua. It is a recycling of the base with the addition of 5 cm of cover in HMA, adding foamed bitumen and cement. The application of the technique takes place along the highway's entire platform (12-meter wide lane and shoulder) at a thickness of 15 cm with the addition of 4% of PAC 15/30 and 2.5% of cement. According to Alexandre Machado Correa, Paulifresa's recycling coordinator, the lab results have confirmed the good performance of this technique when using the equipment correctly and with a proper mixture and monitoring technology. "Beyond the support machinery we use the Wirtgen WR 2000 Recycler equipped with a foam system," explains the engineer.

## Terrabrás also invests in the solution

Terrabrás, a company of over four decades, also operates in the recycling business. Most of the company's contracts are in the Northeast of Brazil. Its headquarters are





Paulifresa over a project of 60 km in Rio de Janeiro

located in Salvador, but it also has offices in Fortaleza, São Paulo, and Pernambuco. It has a functional team of 1,200 employees. André Luiz de Castro, the company's managing director of equipment, says that the contractor's pioneering spirit in the

segment has been its main quality over time. "In 2003 we purchased a WR 2000 from Ciber for recycling asphalt pavement in Ceará for DNIT. We did 113 kilometers in 10 months. A real record," he points out. Since then, Castro noted, this procedure has

become stronger every year. "This market is growing every day due to its many benefits such as low aggression to the environment, lower costs, and an aggregate of excellent quality."

Currently Terrabrás is working on two recycling fronts along portions in Ceará of highway BR-116, totaling about 56 kilometers close to the city of Milagres on the border with Paraíba and Pernambuco. "80% of the work has been finished and the initiative is extremely representative because it is a connection point of the Northeast with the South of Brazil," added Castro.

### Pavisan expands the technique

Until recently recycling was only done on federal and state projects, but now it has gained followers in the municipal arena. It is a market that is just beginning, but that is emerging as a resource to provide increased capacity for urban roads that need to support the traffic of buses and trucks. "Municipal administrations are realizing the cost benefits of this technique. In the city of Rio Grande do Sul, Cachoeirinha, for example, we are going to start working on an avenue to improve its structure," comments Ismael Alvin, director of Pavisan, a company established in the Minas Gerais city of Belo Horizonte. A 40-year old company, Pavisan has worked on various fronts where the concept of recycling was present. In 2010, the company took on a contract for highway BR-135 in the state of Minas Gerais where 400,00 cubic meters of recycling has been done. "In the region of Goiás, we are spearheading an initiative that estimates to recycle 160,000 cubic meters," says Alvin.

### Ciber Dream Team

The Ciber Dream Team Event took to South Africa 13 large companies to participate in a seminar on recycling with world renowned specialist Dave Collings, as well as training in labs and classrooms. The customers were also able to watch the World Cup match between Brazil and Portugal. The following

contractors sent representatives: SBS Engenharia e Construções Ltda., Instale, Queiroz Galvão, Tamasa Engenharia S.A., Ane Pavimentação e Construções Ltda., Paulifresa, Pavisan, Amorim Barreto Engenharia Ltda., Terrabrás, CEBEMI, J.Malucelli, Cavalca Construções, e Meta Serviços e Projetos.



Ciber customers in technical training for recycling in South Africa



# Technical Advice

Number 02 – Usina de Notícias 22



## THE IMPORTANCE OF THE AUGER BLADE ON ASPHALT PAVERS

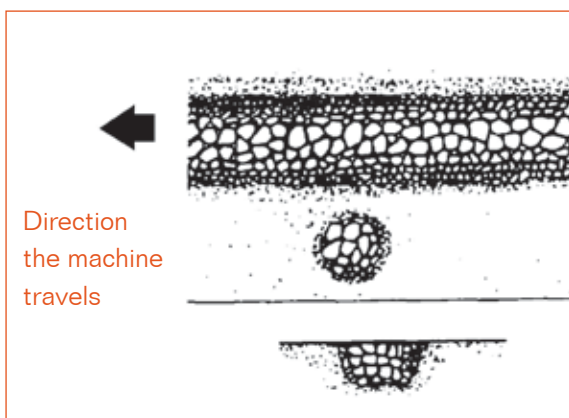
**T**he main function of the asphalt paver is to apply in a level and uniform way the various layers of materials used in the composition of flexible pavements. Therefore, we have prepared a practical guide for checking and installing auger blade, which is a very important component responsible for filling the central region of the screed with material. Made of a resistant metal alloy and totaling two units, this is fastened to the screw conveyor in the central region of the shaft. The screw conveyor or auger is divided into two parts and consists of flighting that directs the material from the center to the ends of the screed, but the auger blade, as the name implies, directs the material inversely, meaning to the center.

One of the causes of the segregation of material or even a lack of material in the central

region of the screed can be attributed, however, to excessive wear of the flighting or to the fact that it is not in the correct position of fixation.



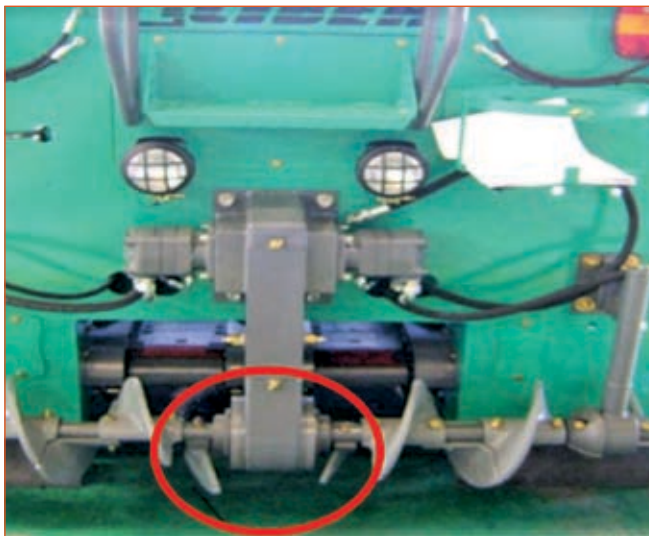
Indication of the equipment's travel direction and comparison of the region affected



Too many empty spaces in the central region of the screed caused by wear of the auger blade



Central, longitudinal line caused by incorrect positioning of the auger blade



Position of the auger blade fastened to the screw conveyor of a compact series paver



Flow of material according to the screw conveyor's movement

Because of the great importance of the auger blade, we should pay attention to their correct positioning, fastening, and wear.

### Positioning

They should be positioned on the shaft so that they are opposite to the other flighting so that they direct the material toward the center of the equipment and not to the ends as the others.

### Fastening

It should be well secured to the shaft. It cannot be loose because it could change its original inclination and thereby lose the function of directing the material to the center.

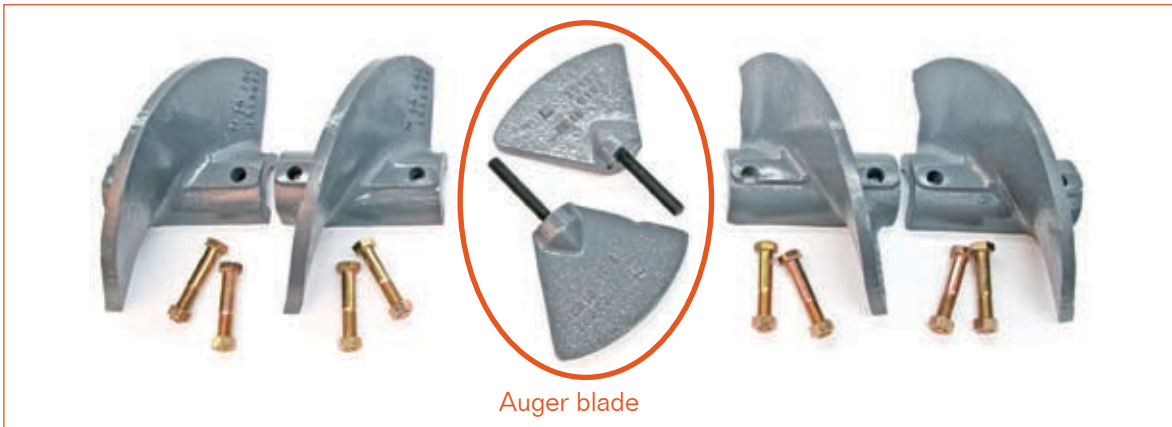
### Wear

Due to the large flow of material and depending on its abrasiveness, auger blade may undergo strong wear.



Auger blade: double attention at the time of positioning and fastening it





Currently the auger blade can be mounted on any one of the distribution screw conveyors, but be extra careful at the time of positioning them on the base. The auger blade has a guide pin that should fit into one of the two holes in the base. These holes have the purpose of setting the angle of inclination, which will allow the material to be directed



**Step 1:** Place the screw conveyor so that you can see the bottom of the first spiral after the auger blade



**Step 2:** Place the base of the auger blade on the screw conveyor



**Step 3:** Notice the holes at base of the auger blade—they should match the pin of the auger blade



**Step 4:** Make sure that the guide pin of the auger blade fits correctly into one of the holes in the base



**Step 5:** Insert the auger blade at the base, placing it in the opposite direction of the auger



**Step 6:** Position the auger blade so that the top end of flighting points to the center of the equipment



**Step 7:** Fit the guide pin into the hole at the base



**Step 8:** Insert the spring washer and nut on the shaft of the auger blade



**Step 9:** Position the screw conveyor in such a way that the nut is facing the screed



**Step 10:** Tighten the lock nut of the auger blade firmly

**IMPORTANT:**

Never perform this procedure with the equipment running, and if in doubt contact the Ciber dealer in your area.





Technology Days is  
a **Wirtgen Group**  
initiative that  
brought together  
large contractors  
from **Brazil** and  
**Latin America**

## Meeting brings together world renowned contractors

**T**he main Brazilian and Latin American contractors participated in Technology Days sponsored by the Wirtgen Group in September in Germany. During two days, 2,600 guests from over 80 countries gathered to follow the event's vast schedule that highlighted innovative technologies, machine demonstrations, talks with experts, and a guided tour of the new production unit of Kleemann GmbH, a renowned manufacturer of crushing and screening plants and a subsidiary of the Wirtgen Group since 2006.

Technology Days have become an international meeting point for the sector and attracted contractors from all parts of Europe—from the North Cape to Andalusia—as well as hundreds of guests from Asia and more than 250 from North and South America, and several from the Middle East, Australia, and Africa. The movement of companies toward technology demonstrates this segment's concern with adding value to their processes. Not even the last world crisis slowed down the pace of the

contractors. Wirtgen Group's encouraging predictions for 2010 were confirmed. Sales trends indicate a total turnover close to € 1.5 billion, which corresponds to a growth of approximately 27% compared to last year.

Group of clients  
from Latin  
America and Brazil





The tradition of a company with more than four decades of roads, dams, and other structures was confirmed.

**JMalucelli breaks a compaction record of Roller-Compacted Concrete (RCC)**

## JMalucelli: 44 years working in Brazil

**L**arge building projects call for great responsibility. The Cruzeiro do Sul Energy Consortium, made up of Companhia Paranaense de Energia and Eletrosul, which is responsible for the Mauá Hydroelectric Plant, apparently agrees. A consortium of contractors consisting of four companies was contracted to build the plant, which includes J Malucelli Construtora de Obras that not only leads the others, but also handles the civil construction of the venture; VLB Engenharia that draws up all the project's blueprints; Sadefem Equipment & Assembly, responsible for the electromechanical assembly; and GE Hydro Inepar do Brasil that will supply the turbines.

The dam began to be built in 2008 on the Tibagi River close to the cities of Telêmaco Borba and Ortigueira in the central region of the state of Paraná. About two thousand people were evacuated from the reservoir area of 84 km<sup>2</sup>. The project, estimated at R\$ 1.2 billion, once

complete will produce 361 MW, which is enough energy for over one million people.

### Traditional competence

The grandeur of the venture seems common place for JMalucelli. Accustomed to large building projects, the company was founded in 1966 by Joel Malucelli (cousin of the company's Accounts and Maintenance director, Juarez Malucelli) and has grown because of the experience and expertise acquired over the years. With operations across the country, the company's most important project at the moment is the execution of Mauá Hydroelectric Plant. For building the dam, which will be 85 meters high and 745 meters long, Malucelli has 1,600 employees working two 12-hour shifts along with 25 engineers. The frenetic pace at the construction site explains, in part, the need to meet the deadline with respect to the project's phases.



“There are several contractual terms. We have the diversion of the river for building the dam and to start concreting the large structures. Of the seven major structures, three are ready and the others are in progress. The part of excavations in both rock and in common soil is already over. Of the volume of concrete, which for this job is 800,000 cubic meters, already 550,000 cubic meters have been done,” says Ricardo Mello Malucelli, production engineer of the Mauá Hydroelectric Plant.

The forecast, if the execution continues on schedule, is that the filling of the reservoir will be ready by April 2011. This way the first of three turbines that will generate power begins to turn in August and at the end of next year the entire project will be finished.

### Value of the equipment

In addition to strong and efficient equipment, the contractor is also very concerned with improving the quality of use of its machines, working with Wirtgen Group's maintenance teams. For the construction of the dam, J Malucelli uses three Hamm 3411 compactors. After all, it is 650,000 cubic meters of roller-compacted concrete (RCC) and only 150,000 cubic meters of vibrated concrete. The responsibility with having R\$ 450 million invested in the execution highlights the importance of having the right tools.

Ricardo Malucelli says that Ciber's compactors were chosen because their compacting in RCC is very good. He affirms that in a test conducted by the contractor, compaction was at 98% after eight passes.

“With the three compactors we bought from Ciber we broke the



Clauci Mortari (Ciber's Commercial Director) and Juarez Maluceli (Accounts and Maintenance director of J Malucelli) during a technical event on pavement recycling in South Africa

national record in production of RCC. We reached 88,000 m<sup>3</sup> in a month, which is 16,000 m<sup>3</sup> higher than the earlier mark,” attests the engineer, noting that this is one of the major factors for the project not to be delayed.

The utilization of the 3411 Hamm compactors does not end with the completion of the plant. Present in the Special Purpose Company (SPC) that will build the hydroelectric plant of Belo Monte on the Xingu River in Pará, J. Malucelli will be responsible for R\$ 3.5 billion in construction projects of the total of R\$ 19.6 billion estimated by the Ministry of Mines and Energy. For Joel Malucelli, CEO of the Malucelli Group, the execution of the Mauá Hydroelectric Plant gave the company the reputation needed

to participate in the Belo Monte SPC, mainly due to keeping to deadlines.

### Good times

The forecast for J Malucelli Group is to grow 80% in 2010 compared to R\$ 800 million last year, perhaps reaching even R\$ 1.8 billion.

According to the CEO

of this company from Paraná, the only local factor for this growth is the Mauá Hydroelectric Plant, the single major project in the state. According to Cedic Vian, the after-sales manager of Vianmaq, Wirtgen Group's exclusive dealer in Paraná, the high performance obtained by the application of the Hamm equipment in the Mauá project is the result of a partnership relationship between Vianmaq and J Malucelli: “The goal has always been to provide high availability of the equipment and because of the contractor's own philosophy and that of the engineer Antonio Augusto from J Malucelli in using genuine parts and highly skilled labor in its operations and maintenance.”



Hamm compactors in operation at Mauá Plant

Contractors **Pavimentos Quilín** and **San Felipe** operate in various projects around **Chile** focused on **maintaining** and **building** the road network

# Chile invests in road works

**L**ocated in the southwest part of South America, Chile accounts for roughly 17 million inhabitants and is an important partner for Brazil, with whom it has maintained political and economic relations throughout history. The country is registering positive numbers even after facing losses from a series of earthquakes that struck in early 2010. In the second quarter, its GDP expanded by 6.5% compared to the same period in 2009. More than ever the national government seeks to restructure and maintain the pace of investment in structural building projects. The Chilean contractors Pavimentos Quilín and San Felipe are among the list of contractors who work in the territory, participating in the implementation of projects aimed at improving regional roads.

Model UACF 19P-2 is the choice of San Felipe and Pavimentos Quilín for projects in Chile

## San Felipe's Projects

San Felipe is a company specialized in designing and executing building projects

for highways. It began in 1982 with the aim of meeting the demands of Chile and thus contributes to the progress of various urban centers. Its headquarters are located in Santiago, but it has the peculiar characteristic of establishing administrative offices in places where it operates in order to meet its customers' needs with precision. According to Felipe Montero, the company's executive, almost 100% of its contracts are with the Department of Public Works (MOP). "Typically the work is related to inter-city connections," he says. Montero explains that the public bodies are aware of the importance of investing in the infrastructure segment in order to achieve a standard of development. "The country leads the System Works Concessions in Latin America. The market is very mature and also the private sector is more protagonist in proposing plans and solutions."

Some of the activities performed by San Felipe are the projects being carried out in the cities of Huara and Colchán—an international route that borders Bolivia. This "path" represents a link to the Bolivian and Brazilian territories. The company also provides services along the stretch known as Route 5 (the road linking Arica to Iquique) and along the highway linking Angol and Los Sauces—both nearing completion. San Felipe uses a UACF 19P-2 to prepare its hot mix asphalt, which is currently being used for projects in the region of Sara-Huara. The technological

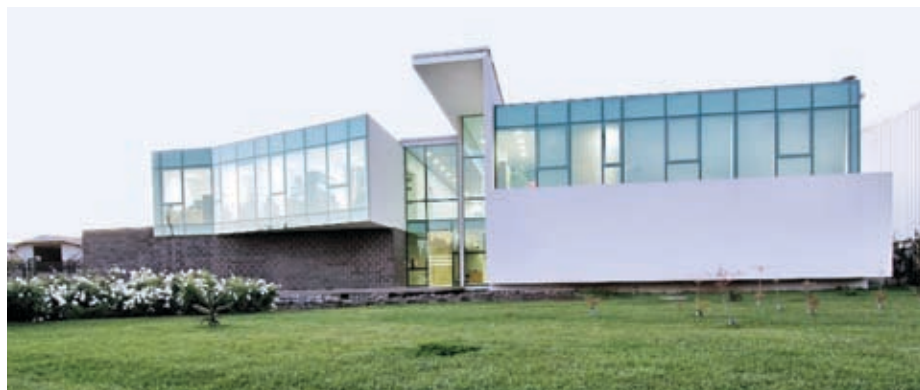




innovation of the equipment, points out Montero, enhanced production with less impact on the environment, facilitating the operations of many projects.

## The Business of Pavimentos Quilín

Also located in Santiago, Pavimentos Quilín carries out its activities in several parts of the country for 20 years. Its clients include the private and governmental sector for maintaining and building urban and interurban roads. One of the important achievements of this contractor was done in the years 2003 to 2005 when it laid new pavement in the central and northern sector of the Costanera Norte highway. This highway is 35.26 kilometers long and crosses the city



San Felipe works with several types of projects

from east to west along the north bank of the Mapocho River between La Dehesa Bridge and intersection with Route 68 thus passing through the cities of Lo Barnechea, Vitacura, Providencia, Recoleta, Santiago, Independencia, Quinta Normal, Renca, Cerro Navia, and Pudahuel. “We increased the urban networks in the Chilean capital, which included

paving roads and the new public transportation system of the city (the Transantiago),” says Cristóbal Paul from Pavimentos Quilín. In 2008 the company purchased from Ciber a UACF 19P-2 and since then has used the equipment to meet the needs of various building projects. “The plant is working in the city of Concepción,” he adds.

## PUG MILL MIXER MAINTENANCE: HIGH QUALITY ASPHALT MIXTURE.



The market demand for quality in special mixtures requires Ciber asphalt plants external pug mill mixer system, which provides as one of its main advantages the fact that the mixing takes place outside the drum dryer, preserving the binding agent's physical and chemical properties.

In order to ensure its excellence, an evaluation of customer maintenance costs has proven the importance of using genuine Ciber parts, which highlight our constant investment in research and development, thus aiming to provide our customers with the best possible results.



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## Ciabol and Minerva invest in Bolivia

**These contractors** are based in Bolivia and work with initiatives to improve the country's road system

**T**he Bolivian government invests in road maintenance projects, using asphalt and rigid pavement. The action plan extends to nine states in Bolivia with the aim of improving the national road infrastructure. Bringing on board important projects, the companies Ciabol and Minerva cover the entire country of Bolivia.

Ciabol develops large projects in the cities of La Paz, Oruro, Potosi, and Tarija. In Oruro, a city in the state with the same name and located at an altitude of 3,706 meters, the contractor operates in an area of 53.58 square kilometers situated to the east of Bolivia and bordered to the north by La Paz, Cochabamba, and Potosi, and to the West by Chile. The company also works on the Poopó Lake Circuit along a stretch of the Avaroa-Orinoca highway, including the completion of landfill sites and layers of sub-base and base. The contract cost the Bolivian coffers US\$ 44.5 million comprising of earthwork, paving, a drainage system, and signs. "The Avaroa-Orinoca project is in the earthmoving phase and placement of the structural package. The work started on January 7, 2010 and it should be finished in the month of December," explains Ciabol's communications director, Marcel Avila Reese. This road is important to the country because it is part of the national and international integration of corridors especially with Peru and Chile.

Another project considered important in Bolivia is Route Cotagaita-Tupiza-Villazón in which Section III (Cotagaita-Tupiza) is being built by the Accidental Association Ciabol-Compasul-ICCILA with a length of 78.4 kilometers. The company used a Vögele Super 1300-2 Paver and a UACF 17 P-2 Advanced counterflow model asphalt plant. So far, reports Reese, over 12.5 km have been opened in an area called Rio Blanco. "Little is lacking to close the total scheduled for the base layer and then continue with the paving and minor works of art such as lane markings and others."

The Minerva Cruceña-Terra consortium on the other hand, located in Santa Cruz, currently operates along Section IV (Tupiza-Villazón), overseeing 91.4 km of flexible asphalt and signs. The contractor has a Ciber UACF 17 P2 Advanced Continuous Asphalt Plant and a Vögele Super 1300-2 Paver.

According to Felix Vezjak, director of Vezla, Wirtgen Group's exclusive dealer in Bolivia, the route is extremely important because it borders Argentina. The project's inspector for Administradora Boliviana de Carreteras (ABC), Jesus Mamani, explains that "the construction of the Cotagaita-Tupiza-Villazón road is in its final stages, lacking only 75 km to pave, 48 of which belong to Section III and 27 to Section IV."



# ASSA Concesiones takes on large projects in Colombia

This **contractor**, headquartered in **Colombia**, works with projects for **repairing major roads** in the country

**F**ertile ground for ventures, Colombia is investing in improvements on its highways. There are several projects from a strategic plan of the Ministry of Transportation to increase the country's infrastructure. The objective is that the capital invested in such ventures reach around 8% of the country's GDP. According to Francisco Isaza, president of Fiza, it has been six years now that the highway construction market shows significant growth. The reason for this is that the national government has turned its eyes on this niche. "While there is still much to do, in 2010 we started major projects such as the Rota do Sol with more than 1,000 kilometers that involves Colombian and international engineering teams," he says.

Taking advantage of the good winds blowing over Colombian territory, the contractor ASSA Concesiones S.A., with headquarters in Bogotá (the largest city of that nation), develops important projects

at a regional level. The company operates two large concessions. One of them is the project led by the consortium Autopista de La Sabana S.A. that has a contract to build approximately 300 kilometers of new double-lane roads with shoulders in the departments of Antioquia, Córdoba, Sucre, and Bolívar. ASSA is also part of the Autopista del Sol S.A. as is responsible to architect some 210 kilometers of roads in Bolívar and Atlántico. This profile corresponds to most of the projects focused on the country's highway segment, including the development of new roads and repairing of older roads. The maintenance of pavements is expected to have a lifespan of 22 years. The methodology used in the construction and the materials employed follow the standards of the National Highway Institute of Colombia. The measure aims to ensure quality and durability of the roads, which are essential means for logistics and cargo transportation as well as for traveling passenger vehicles.

Colombia invests heavily in road improvements



## Technology in the Field

The contractor applies state-of-the-art technology to meet the demands with excellence and contemporary market requirements. In both projects, the concessions of Autopista de La Sabana S.A. and Autopistas Del Sol S.A., it operates two Ciber UACF 17 P-2 Advanced continuous asphalt plants with four storage silos and a UAB 18 E Advanced batch plant. This year it will also start up the operation of one more unit of the UAB 18 E Advanced line. The geographical distribution of the equipment was done in such a way so as to ensure a proper distribution of production at several work fronts. "These plants produce blends of type MDC2 (hot and dense). The reforms have opened about 50 km of new roads and 100 km of existing



Representatives of ASSA along with other Colombian contractors visiting the factories of the Wirtgen Group in Germany: Anibal Ojeda (Assa), Juan Carlos Roman (Concrescol), Alberto Arango (Construcciones El Condor), Oscar Torres (Concrescol), Julio Espinel (Assa), Gustavo Rodriguez (Grodco), Menzel Amin (Assa), Jorge Marin (Cámara de Infraestructura en Colombia), and Francisco Isaza (Fiza)

roads in the departments of Córdoba, Sucre, Bolívar, and Atlántico," explains German Rivadeneira, the CEO of ASSA.

For Francisco Isaza, of Fiza, ASSA is a company with many

challenges ahead and with a great future in Colombian engineering. "It's an excellent team led by Rivadeneira and has a highly qualified team made up mostly of young professionals."

## Award



# Ciber nominated for Designpreis 2011

The company was among the finalists in the category of Product Design with the asphalt plant Kompakt 500, which combines functional design to a compact model

Ciber Equipamentos Rodoviários was one of the finalists in the award Designpreis 2010 in the category of Product Design with the asphalt plant Kompakt 500. The award is sponsored by the Federal Ministry of Industry and Technology of Germany and is one of the main distinctions of the design area in the world. Only products that have won some previous awards of world recognition can be registered for this award. In 2009, Ciber won the gold prize of the 2nd Idea Prize/Brazil, the national version

of the design award from the United States, the International Design Excellence Award (IDEA).





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