WIRTGEN GROUP CIBER

December 2009/January 2010

Usina de Notícias

Number 20

- **Kompakt** Design wins national award
- **Latin America** Ecuador and Venezuela Invest in Infrastructure

SPECIAL

Infrastructure: Brazil under construction

VERSATILITY IN STATE-OF-THE-ART EQUIPMENT.

WIRTGEN GROUP

Close to our customers

KOMPAKT SERIES.

The best in Asphalt Plants, now in a compact version.

- Perfect for fast execution work in hard to access areas;
- Innovative design combined with cutting edge technology, facilitating operation and mobility;
- As it is simple and fast, its operation ensures the best cost-benefit ratio;
- Shorter set-up time, simplified and fast assembly;
- Versatile, produces the widest variety of asphalt mixtures, maintaining quality;
- Efficient filtering system;
- Easy to maintain and clean, allowing for more working hours.

idea PREMIADO WINNER. IDSA '09 BRASIL

ROAD AND MINERAL TECHNOLOGIES

www.wirtgen-group.com
www.ciber.com.br

TABLE OF CONTENTS

Editorial Staff

USINA DE NOTÍCIAS MAGAZINE
IS PUBLISHED
BY CIBER EQUIPAMENTOS
RODOVIÁRIOS LTDA.
A WIRTGEN GROUP COMPANY

Rua Senhor do Bom Fim, 177
CEP (Zip Code) 91140-380
Porto Alegre – RS – Brazil
Phone: (51) 3364-9200
Fax: (51) 3364-9222
ciber@ciber.com.br
www.ciber.com.br

General Coordination:
Luiz Marcelo Tegon
(Vice president)

Stella Richetti
(Marketing Analyst)

Production and execution:
temática PUBLICAÇÕES
Phone: (51) 3346-1194
redacao@tematica-rs.com.br

Edition:
Fernanda Reche (MTb 9474) and
Svendla Chaves (MTb 9698)

Reports:
Patricia Campello

Revision:
www.pos-texto.com.br

Translated by:
www.traduzca.com.br

Artwork:
Eduardo Mello

Printing run:
5.000 copies (Portuguese)
1,800 copies (Spanish)
500 copies (English)

Free distribution.

Brazilian market growing

Brazilian contractors take advantage of positive phase in infrastructure investments in the national territory

Página 10

Queiroz Galvão repairs BR-101

The contractor, headquartered in Brazil, is working on duplicating the highway. The unique feature of the paving is the use of North American "Super-Pave" technology

Página 20

OPINION

Country of the future

Clauci Mortari
Ciber Sales Director

Surprising. In a word, that is how you could describe 2009 for Ciber, which is already celebrating positive results, even during a period marked by worldwide economic turbulence. Despite the much-feared international recession, the Brazilian market and all of Latin America remained stable and even grew slightly with a few lines of machines. For example, among the countries in which Wirtgen Group is present, Brazil has been extremely successful in comparison with the markets in Europe and the United States.

One of the factors that has contributed to the sector's growth have been public investments by the Federal Government in the area of infrastructure with programs like the PAC (Growth Acceleration Program) and Finame (Agency for Funding of Machinery and Equipment). These initiatives, in addition to Brazilian economic stability, encouraged successful sales this year. And we are sure that this trend will continue in the future. Also because of the large scale sporting events to be hosted by Brazil, such as the 2016 Olympics and the 2014 World Cup, which are going to open up new opportunities on structural terms.

Other Latin American countries, such as Peru, Chile, Panama and Colombia are also betting on infrastructure improvements. Equipment from the Wirtgen Group is being used on important Latin American projects. In short, both in Brazil and its surrounding countries, the future is bright!

Usimix bets on the asphalt mix production niche

Usimix, a Brazilian company, has been in the asphalt production business, selling Hot Mix Asphalt since 1998. The company's business focus includes all of Mato Grosso do Sul (Brazilian Midwest). Among the company's outstanding clients is Campo Grande's City Hall, where its headquarters are located. "We supply fine mixes for use in maintaining streets and bus corridors," they said.

In order to produce this raw material with excellence, the company put a UACF 15P-1 Advanced unit with a Dual system into operation in the Mato Grosso do Sul region. "This is the only way we have succeeded in ensuring our product's homogeneity and quality." The machine is part of Ciber's line of counter-flow asphalt plants, belonging to the category dedicated to medium-sized projects. This plant has a production capacity of 80 tons per hour.

The dynamic dosing of aggregates and the plant's versatility and technology, able to reduce its impact on the environment, attracted the attention of Usimix's technical-director Michel Issa Filho. According to the engineer, the company's choice of the model is justified by the possibility of installing a special burner for NGL and natural gas. In Issa Filho's opinion, another of the plant's advantages lies in its reduction of pollution to near-zero levels, with lower sulfur content. "The bag filters have brought enormous gains in terms of preserving nature," he stated. The pleated bags provide for particle filtering that is five times more efficient than the traditional smooth variety. In addition, they contribute to improving filtering by purifying exhaust fumes, complying with the strictest environmental legislation.

Ferfranco at work on highway project in Midwestern Brazil

Brazilian contractor Ferfranco is responsible for paving a 58 kilometer stretch of MG-188 in the city of Unai, Minas Gerais, on the border between that state and Goiás (Brazil). This undertaking should be completed in June of 2010 and is relying on vanguard technology to assess the work's quality.

As a matter of fact, automation has been an ally for contractors in carrying out quality projects. For Ferfranco, the technological contribution also represents an important factor when thinking about which equipment to acquire. With the objective to add value to the company's fleet of machines, they recently acquired a WR 2000 cold recycler (operating on the Unai project). The idea is to use the equipment in base stabilization work and for recycling. "It is going to facilitate operations, saving our motor grader for example, in addition to improving the service," evaluated Rodrigo Pinto Sousa, the company's director.

Sultepa works on revitalization of Brazilian highway

Sultepa, a contractor headquartered in the capital of Rio Grande do Sul, is working on an important project to revitalize BR-116. The work includes an approximately 100 kilometer stretch that begins with its junction with the Porto Alegre freeway and passing through the cities of Canoas, Esteio, Sapucaia do Sul, São Leopoldo, Novo Hamburgo, Estância Velha, Dois Irmãos, Morro Reuter, Picada Café and Nova Petrópolis. In all, the stretch of highway cuts through 11 locations.

The road repairs include milling and compaction of HMA asphalt, renovations on overpasses and bridges, the construction of new on-ramps and renovation of all of the highway's signage. The construction work is part of the federal government's Growth Acceleration Program. BR-116 carries more than 70% of the state's entire highway traffic. The undertaking began in May of 2009 and is scheduled to be completed in 2010. For the asphalt repair aspect of the project, the two-lane stretch started in Nova Petrópolis. Currently, the work is located around Km 188 in Picada Café, in an area known as the "Romance Route". The highland region is a

tourist attraction, attracting visitors from all across Brazil, especially during the winter. For its part, the four-lane highway includes the segment between Porto Alegre and Estância Velha, for which several intervals have already been developed.

This undertaking relies on the Hamm technology of HD90 and GRW18 compactors for asphalt compaction. Sultepa had already bought the same models, which are currently compacting on sites in the Brazilian state of Maranhão. However, the contractor decided to acquire two more new models to work exclusively on the revitalization of BR-116. According to Juliano Gewehr, who works in Ciber's Application Engineering department, the equipment provides quality results. "The HD90 provides perfect visibility of the compacting cylinders and the water spraying system, allowing work to be carried out with precision and excellence. For its part, the GRW 18 handles very smoothly. The steering on both sides of the compactor makes it possible to effectively monitor the asphalt's mat," he said.

Ferfranco operates mainly in the states of Minas Gerais, where its headquarters are located in the city of Belo Horizonte, Espírito Santo and Rio de Janeiro. Among the many jobs they can tackle, highlights include the construction of highways and dams, asphalt and highway restoration.

Widening of Porto Alegre airport runway

Salgado Filho Airport in Porto Alegre, in the Brazilian state of Rio Grande do Sul, has begun a renovation process by widening its main runway by eight meters – from its current 42 meters to 50 meters. The undertaking foresees the pavement's repair, as well as a complete milling and recapping. The runway is currently 2,280 meters long. After the project is completed, it will be 3,200 meters long.

Three Ciber machines are in operation for the project. One paver equipped with electronic pavement grading control that adds more precision to its operation, and two milling machines with technology to adjust the milling's depth at each millimeter.

In order to avoid cancelling daytime flights the work is being done at night, between 12:30 a.m. and 5 a.m. This narrow time window increases the work's complexity. In addition, two other factors that need to be dealt with are the climate changes (frequent at this time of year) and the absence of sun and heat to accelerate the curing process for the binding agents used to apply the asphalt.

The improvements in the runway are aiming towards regularizing the surface to provide greater safety during landing. In addition, the work will provide for takeoffs and favorable conditions for larger airplanes with load and fuel capacities that are close to the limit. This way flights will be able to leave Porto Alegre directly on their way to airports in other countries.

Ane Pavimentação invests in the execution of debris recycling

The use of recycled debris in paving work has been growing and consolidating in Brazil According to Valmir Bonfim, director of Ane Pavimentação e Construção Ltda., a company located in the city of Barueri, São Paulo, recycling is no longer considered experimental in Brazil. This is because the market has had equipment with state-of-the-art technology available for some time now, such as the KMA 200 cold recycling mobile plant, which is able to work perfectly on this kind of process.

One of the advantages of using recycled materials rests in their being properly "disposed of", in so far as an environmental liability is transformed into raw material for the fabrication of the paving base, generating even greater economic advantage for the company. "At times, the material can be just as good as new material - such is the case with materials resulting from the demolition of reinforced concrete."

Bonfim emphasized that when talking about recycling, one needs to be aware that not all raw materials will be up to snuff. "Oftentimes, demolition elements from many different sites are recycled after being delivered in city dump trucks. In those cases, first you need to pick and choose, removing the undesirable materials like plastic, wood and rust." It is best to use good quality rocky materials. By taking care with this and verifying several other factors, the final product has everything you need to achieve an excellent end product. "Final quality is related to the paving project, the material employed and its dosing, as well as the control of its application."

The first KMA 200 Ciber sold in Latin America was bought by Ane Pavimentação e Construção Ltda. The equipment has been used in recycling the milled material with asphalt foam and Portland cement and for bases with new stone materials. "The plant should be employed during the recycling of all the material coming from the demolition of stadiums to be replaced for the World Cup, scheduled to take place in Brazil, such as those in Salvador and Natal," informed Bonfim.

KMA 200 recycles scrap

Wirtgen Group welcomes Ane Group board of directors at M&T 2009

Strong investment in highway projects in Panama

Panama is undergoing a period of transformation in its infrastructure. One of the largest Panamanian highway feats has been placed in the hands of Construtora Vial S.A., which is working on building an overpass on the north side of Panama City, the country's capital of approximately 1 million inhabitants. The bridge begins at the Allbrok terminal and ends at Tocumen airport. For its execution, Resancil, Ciber's representative in that country, supplied the contractor with a Vogele Super 1203 paver and two Hamm compactors (HD090V and 3411).

16 kilometers of four-lane highway are included in the project. 14.5 kilometers remain to complete the project. The undertaking was originally planned to be completed in 2009. However, with the change in governments, the work was stalled by technical and economic revisions.

According to Jairo Ângulo, Resansil's director for Central America, the corridor will solve several traffic problems, such as the traffic jams in the San Miguelito district and on other surrounding highways. The overpass will also help the transportation of shipments, since the region is the country's main route for production flow.

Panamian president Ricardo Martinelli, elected last May, is facing huge economic challenges for the nation's development. One of them is to move forward with the project to expand the Panama Canal, at a budgeted cost of US$ 5 million, preparing it to allow for the passage of large ships. In spite of the short time he has been chief of state, Martinelli is also already carrying out feasibility studies for a subway in the country, arousing positive expectations about what he will be investing in terms of infrastructure. "Originally a businessperson from the supermarket segment, he believes that the costs of the core list of staple foods can be reduced by investing in the area of energy and logistics. For this reason, he began carrying out improvements on Panama's highway infrastructure to facilitate access to the country's farming and cattle raising centers," said Ângulo.

Venezuelan companies join forces to build highway

Contractors hard at **work** on **large** **Venezuelan** roadbuilding **project** that will facilitate **land-based** logistics

Venezuela, which has one of the world's largest crude oil reserves, has developed significant projects for improving its highway infrastructure. General José Antonio Paez highway has become one the country's most important current undertakings. In order to work on the project, a UACF 17P-1 counter-flow asphalt plant, a Hamm HD90 and a GRW 15 compactor and an AF 5000 Plus paver have crossed the Brazilian border.

The work aims to facilitate logistics for land-based shipping of food and materials from Colombia. The highway connects the country's entire Midwestern region, linking the Venezuelan states of Cojedes, Portuguesa and Barinas, which are part of Troncal 5, a path that leads to the city of San Antonio de Táchira on the border with Colombia. Entirely new infrastructure is being elaborated, including overpasses.

The work should be completed in roughly 20 years and is under the responsibility of two contractors: Vialidad y Construcciones Sucre and Hormi-gones e TevialCA. In all, the highway includes approximately 400 kilometers. Currently, the work is being done just a few kilometers away from Campo Carabobo, a mountainous region with very irregular topography. "In addition to improving the connection between the states in Venezuela's western and central regions, it is also going to encourage those regions' development, encouraging the construction of homes and lowering transportation costs," explained Gerardo Siblesz, of Resansil, the company that represents Ciber in Venezuela.

Approved brand

It is not only on General José Antonio Paez highway that Ciber products are circulating. The brand's market share is growing in Venezuela. Acceptance of the company's equipment is mainly due to its constant technological development, making the equipment more robust and productive, and guaranteeing quality end results. For example, the asphalt plants are very well accepted because of their production capacity and ease of operation in that region. According to Rodrigo López, who works in Resansil's Technical Assistance department, 24 asphalt plants have already been sold in that country, from the UACF 12P ME to the 19 P2 Advanced, in all of its configurations. "Local clients value aspects that have an influence on the excellence of the final product," he added.

More than just a piece of equipment, a work of art

Design is becoming industry's **ally** Aspect that led the **Kompakt to win** national award for **innovative** projects

Before reaching the market, products must undergo a long process. Launching something truly new requires careful study and research, as well as many months of dedication, complying with such tasks as creation, production, testing and approval. This is intense work, carried out by a team of professionals that involves the Development Engineering department, with additional work being done by the design department.

The interaction between these different disciplines resulted in the Kompakt counter-flow asphalt plant's innovative concept. The project relied on the support of Bertussi Design Industrial, a company from the state of Rio Grande do Sul that, together with Ciber's Research & Development and Engineering departments, added value to the machine, greater functionality and a configuration that facilitates its assembly and logistics.

The equipment won a gold at 2nd Idea/Brasil awards, the national version of the design competition from the United States, the International Design Excellence Award (Idea), a bronze at the international awards, and a silver medal at the 2009 CNI Awards (National Confederation of Industries) in the Medium and Large Scale Industry modality. "Technical and esthetic qualities result in competitive advantages and reinforce the company's reputation as an innovator," said Walter Rauen, Ciber's managing director.

During the machine's planning the team considered the need for the machine to operate in difficult to access regions. Formal elements (surfaces, finishes and colors) all contributed to making the plant's competitive advantages more apparent. "Before beginning the project, we sought to understand the manufacturer's world and its challenges. After that was achieved, we looked more specifically at the product and what it represented as part of a client's fleet, as well as the target audience we were aiming for," explained Tobias Bertussi, the design studio's architect and owner.

Rauen receiving the 2nd Idea/Brasil Award

Project wins award for innovation

An element that increases value

The industry is has begun awakening to design's importance in adding value to a piece of equipment. Consumers are very choosy. They are looking for greater uniqueness and esthetic solutions that set the products apart from the competition.

In the case of the Kompakt, one of the strongest elements was to show that it was a reliable plant with sufficient technology to do the job for which it was designed well. "What is most important is to understand industrial design as a permanent tool towards the launching of new products, as part of the innovation strategy," he concluded.

Investment in Ecuadorian infrastructure

Alvarado Ortiz Constructores present at the execution of **work** on **important** Ecuadorian **highways**

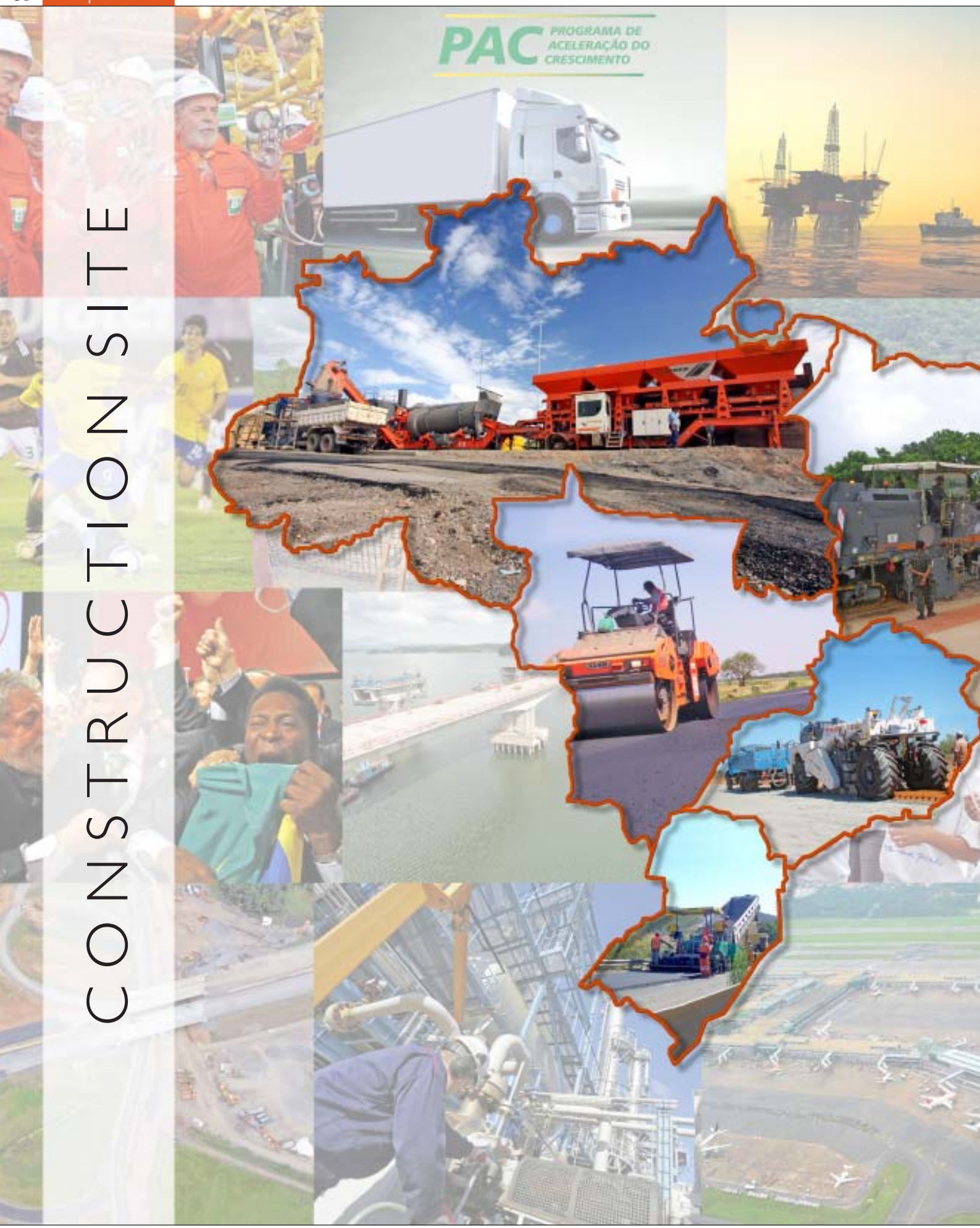
Bilateral Brazil-Ecuador relations have been intensifying, resulting in technical cooperation in different sectors of the economy. Brazilian made Ciber equipment is also operating in Ecuador, contributing to the expansion of its highway infrastructure. In order to work on important undertakings in the country, contractor Alvarado Ortiz Constructores Cia Ltda is using four Ciber machines that are part of its fleet: a UACF 17P ME and a UACF 17P Advanced asphalt plant, both acquired this decade, a UADM-1465 plant and a SA-115C paver. "We chose the brand because of its technology and price in comparison with the competition," explained Daniel Vásconez, the company's chief administrator. The purpose of this technological array is to prepare and place asphalt in projects from contracts with both the public sector and private clients.

The company focuses its work on planning, supervising and building highways and on civil, sanitation, hydraulic and electrical infrastructure related projects. It also does business in the market producing and supplying construction materials such as sand, cement and cold and hot mix asphalt. In addition to the contractor, the business group is relying on eight other companies in the fields of construction, imports and vehicles.

Currently, Alvarado Ortiz is carrying out work in the provinces of Tungurahua, Cotopaxi, Pastaza and Imbabura. The majority of the work is being done on roadways connecting cities in the province of Tungurahua and aims to improve traffic and the transportation of products manufactured in the region. The local highways were too narrow, which made them dangerous for vehicles and large trucks. As a result of this danger, a plan was drawn up to widen the roadway to six meters.

One point in favor of the sector in the country are the investments being made by the current government, presided over by Rafael Correa, towards the creation of highway infrastructure projects. "The new plan foresees work in several of the country's regions, integrating cities located in humid or desert areas. Therefore, the work is heavily dependent upon weather conditions, which oftentimes delay the work," explained Vásconez. He pointed out that the production capacity of Ciber equipment made it possible to overcome weather related difficulties.

In October, the Interamerican Development Bank (IBD) approved a US$ 1 billion line of credit for Ecuador's highway infrastructure. The goal is to increase the South American country's economic and social inclusion and territorial integration, reducing transportation costs and times and increasing highway safety.



CONSTRUCTION SITE

Work in sight: Brazilian market growing

With an eye on the **sporting events** that are to be hosted **in Brazil** and on **programs** like the **PAC** (Growth Acceleration Program) and **Crema** (Highway Conservation and Repair Program), the **construction-related production** chain is preparing itself to dive into the work and **increase revenues**

Brazilian public administration is becoming increasingly aware of the economic and social advantages of investing in structural development. From northern to southern Brazil a variety of projects are coming off the drawing board to meet the needs of a country that is ready to take off economically. So much so that on the Brazilian agenda, one item that is receiving great attention is the subject of progress. This premise, based on the "housecleaning" philosophy, has created business niches for contractors. For example, the Growth Acceleration Program (PAC) created by the federal government is investing funds of roughly R$ 503.9 billion in the areas of transportation, energy, sanitation, habitation and water resources, aiming to add momentum to national growth.

And the future is already bright for the civil engineering sector and its entire production chain, including the construction equipment segment. Rio de Janeiro being chosen to host the 2016 Olympic Games and Brazil's winning the 2014 World Cup championships will both result in heavy investments in infrastructure. This fact has justified the creation of a PAC program specifically for the World Cup. According to the Minister of Cities, R$ 5 billion are planned to be invested in financing initiatives like urban mobility. "Studies are being done to expand transportation systems in the host cities or to implant light vehicles, either on tracks or wheels (LRVs and Buses), Bus Rapid Transit (BRT) systems or air-rails, all working in an integrated manner. The BRT system consists of more than just simple

bus corridors, it includes isolated lanes where articulated vehicles with large passenger capacities circulate," said the agency's press agent.

Investment in the Northeast

With a prosperous future in sight, goals are sure to be scored off the field as well. On account of the sporting events, states like Bahia in northeastern Brazil are already getting into the swing of things. Along with other cities, Salvador has been included as a sub-host for the championship and changes to its highway system should take place in 2010 to meet Fifa's requirements. "I am confident that despite the world financial crisis, which also affected us, we will be able to begin growing again as had been occurring in 2007 and 2008," analyzed Ronald Velame, director of Paviservice Serviços de Pavimentação, a contractor located in the capital of Bahia.

Novatec: Asphalt recapping project

Aside from the events, the federal government is working at an accelerated rate on 27 projects included in the Highway Conservation and Repair Program's first stage (Crema), totaling 3,400 kilometers of highways in Bahia. "The contracts are for two years and have kept companies busy over the course of 2009 and should also keep them busy next year," explained Velame. The National Department of Transportation Infrastructure (DNIT) is still planning to open bidding on projects to build several new stretches for highways like BR-235 and BR-135.

CGR visiting Wirtgen Group stand at M&T 2009

In terms of projects set to be put into action by the government of Bahia, there are also positive expectations. The bidding process has already begun for 1,200,000 km of construction work, part of the Programa Premar (similar to the federal government's Crema), with partial financing from the World Bank. These represent real opportunities for new undertakings for the nation's contractors. "This initiative is generating solid business expectations for contractors and other members of the production chain." Another significant opportunity for the sector was the signature, during the second semester of 2009, of a concession contract for BR-324 and BR-116, which Via Bahia won in the bidding process. The project involves public services to repair and conserve the highways, in addition to increasing the highway system's capacity on the respective stretches.

CGR Equipment on Roadbuilding Project in Mato Grosso do Sul

Bets on Enlargement of Fleet

Another northeastern Brazilian state with a wide variety of services is Pernambuco. One significant project there is the asphalt recapping of BR-101, within the Pernambuco territory. The work, scheduled to be completed in April of 2010, includes the stretch which connects the state of Paraíba with the states of Rio Grande do Norte and Pernambuco, on the sub-stretch between state highway PB-025, near the city of Lucena. Lot 5, as the site is referred to, is 54.9 kilometers long.

The undertaking is of great regional significance, since BR-101 is an important route for tourists in the northeast. Undertaken by Grupo Novatec (from the city of Recife), the paving is relying on the technological resources of the contractor's fleet of machines, which strives to keep up with the market's demands and is betting on automation to add value to the work it carries out. "This is a way for us to reassure our clients and present qualified services, carried out within the deadlines established in the contract," stated Alexandre Albuquerque Teixeira, Novatec's partner-director. That, according to the executive, was a good reason for them to look to the Wirtgen Group when acquiring machinery: "Not only because of their excellent assistance and how well they meet our needs, but because they are a company that has treated us like a true partner for many years now." Within the last two years, they have acquired: two UACF 17 P1, two UACF15 P1s, one UACF 12P ME, three AF 4500 and one AF 5000 Plus pavers, one WR 2000 recycler, and Hamm compactors (three GRW 18, two HD75, two HD 090V and one HD 90). In addition, their fleet of machinery already includes one W 1900 milling machine and one SA 114 CR.

Revitalization in the Midwest

Positive change is on its way to the state of Mato Grosso do Sul. The PAC (Growth Acceleration Program) has encouraged investments of approximately R$ 2.3 billion to be applied in work on construction, revitalization, restoration and improved traffic capacity on highways in Midwestern Brazil. Mato Grosso do Sul, where CGR provides services in a more substantial way, is undergoing a period of strong development. According to Dalvim Junior, from its Engineering Department, approximately R$ 1.8 billion in funds are guaranteed to the state, R$ 1.2 billion of which will be invested in the implantation and modernization of already existing infrastructure. "The remaining R$ 600 million is destined for maintenance of the road network, such as repairs on BR-262 (MS), which connects the bio-oceanic Brazil-Bolivia-Chile corridor."

The unfolding of this growth in the structural realm in Mato Grosso do Sul has stepped up the rhythm of the work, leading CGR to reinforce its fleet of equipment to meet the demand. And in order to operate within the quality standards, the machinery's efficiency is fundamental. Before deciding on one product or another, the company does long term planning to make sure the purchase is going to meet their costs of acquisition, maintenance, operation, while still providing effective production to generate profits. This is the reason the company acquired, in 2009 alone: three Hamm compactors (HDO75K, GRW 18 and 3520), one Plus series paver, one UACF 15P-1 plant and one WR 2000 recycler.

Always in touch with the trends, CGR is constantly improving its use of recycling for paving. "This resource is already in widespread

CGR plant operating in Mato Grosso do Sul

use in Europe and the United States. This allows for increased support capacity, with minimum usage of new materials." The process, emphasized Júnior, is nothing more than grinding up, incorporating and homogenizing material from the asphalt cap layer to the pavement's new structure. The technique is being applied by the contractor in the recuperation of highway BR-060 on an 80 kilometer stretch between Campo Grande (MS) and Sidrolândia (MS). "The job, contracted by the DNIT, interconnects cities in southeastern Mato Grosso do Sul. Work began in April of 2009 and is scheduled to end in April of 2011," he explained.

Since March of 2009 the contractor has also been in charge of paving BR-359, which connects the cities of Coxim MS and Alcinópolis (MS). CGR is in charge of Lot 1 from km 94.3 to km 149.6, a total of 55.3 kilometers. "Contracted by the state government, the project is making use of a base on "soil improved with cement" for the pavement structure, since in that region the closest deposits of stony material to be found are at least 90 kilometers away from the construction site." With this work, the flow of shipments via highways will have one more channel for easy access to northern Mato Grosso do Sul, Mato Grosso, Goiás and São Paulo.

Megaproject in São Paulo

On its way to southeastern Brazil, another undertaking is calling attention to the size of the currently scheduled highway revitalization. The Rodoanel (Ring Road), an undertaking by the government of São Paulo and the Growth Acceleration Program, is promising in terms of improving logistics for the São Paulo Metropolitan Area, in addition to favoring the country by facilitating the flow of production, incorporating the Port of Santos and Mercosur's main highways to the nation's transportation logistics system.

SP 850 in full activity on Southern Stretch

The new route will surround greater São Paulo, connecting the highways that enter the capital of São Paulo: Bandeirantes, Anhanguera, Castello Branco, Raposo Tavares, Régis Bittencourt, Anchieta, Imigrantes, Ayrton Senna, Fernão Dias and Dutra. According to Dersa (Desenvolvimento Rodoviário S.A.), a government controlled company subordinated to the State of São Paulo Secretary of Transportation, the Rodoanel (Ring Road): "will reduce the cost of transportation, facilitating exports and encourage growth in a variety of sectors.

Started on May 28, 2007, work on the Trecho Sul (southern stretch) is scheduled for completion in April 2010 and is 57 kilometers long, plus another 4.4 kilometers interconnecting it with Avenida Papa João XXIII.

The investments are estimated at R$ 3.6 billion for construction of the highway, expropriations, relocations and environmental compensation. According to Dersa,

Pedro Kirilos/Riotur

Rio de Janeiro Olympic Games point towards more investments

the work will contribute to an approximately 43% reduction in truck traffic on the Marginal do Rio Pinheiros and 37% on Avenida Bandeirantes.

Ring Road in Progress

Ciber equipment is working on the job, providing support to three Brazilian contractors that integrate the consortiums responsible for Lots 1, 2, 3 and 4: Camargo Corrêa, Andrade Gutierrez and Pavisan Engenharia de Pavimentos Ltda. According to Ismael Mendes Alvim, Pavisan director and engineer, currently the service is focusing on the final layer of land planing and paving. "We worked on lots 2 and 3 with 16 collaborators." The company relies on a Hamm 3520 for the compaction work. Alvim explained that the model is perfect for achieving the project's required density in fewer passes: "Since the volumes of soil-cement to be homogenized are significant - approximately 500,000 cubic meters on both lots – we chose to use heavier compactors in order to gain productivity."

For its part, Andrade Gutierrez is at work on Lot 1's 12.46 kilometer stretch, located in the cities of Mauá, Riberão Pires, Santo André and São Bernardo do Campo, all in the state of São Paulo. The contractor (along with Galvão Engenharia) is working on the entire undertaking, from cutting down the forests all the way to opening the highway to traffic, under the supervision of technical and environmental management organizations. "In September, the scope of services includes six bridges which are close to being completed and paving, which in itself includes reinforcement of the base layer, sub-base, base and pavement – flexible and rigid (asphalt and concrete), in proportions of nearly 50% each," emphasized the consortium's production manager, João Alberto Friestino. The staff at work on Lot 1 includes 834 direct employees and 410 outsourced workers, for a current total of 1,244 employees. In order to execute the rigid pavement in concrete that is 14.80 meters wide and 24 centimeters deep, the contractor chose to use a Wirtgen SP 850 Vario paver. "The machinery completes the paving in two passes of 8.20 and 6.60 meters wide each, for a total length of 6.5 kilometers.

The technology and available resources are factors that add ease of operation and quality to the end product, which is already being noticed by the client." The same model of paver was acquired by Camargo Corrêa, leader of the consortium that includes Serveng Civilsan to work on Lot 4. "We're in the final stage of the land moving and carrying out special works of art and the beginning of paving.

The SP 850 fully meets the needs of the job," stated Wagner Fernando da Silva, manager of the consortium's project.

Ismael Alvin (Pavisan director) and Walter Rauen (Ciber president)

Pavisan's Hamm 3520 Working on Ring Road

Overcoming adverse conditions in Amazon region

Both Comara and **Plastiflex** are overcoming the **Amazon Region's climate** and geographic difficulties to carry out their **work** by **using** a line of **products** with **cutting edge technology**

In addition to the important role it plays in ensuring the planet's environmental stability, the Amazon Region offers Brazil resources and riches of extreme economic importance. Investments in infrastructure (ports, highways and runways) represent a fundamental part of encouraging development and connecting the Amazônia Legal region's 24.7 million inhabitants (2009 estimate) to the rest of the world and country. Ciber equipment is present during this process, operating on structural changes that are essential for Brazil's economic and social growth.

Many projects are being carried out by the Amazon Region's Airport Commission (Comara), in the airport segment. In order to operate its undertakings, Comara is using an AF 5000 Plus paver on the city airports of 11 Amazon locations, aiming to overcome those airports' non-compliances, as pointed out by Anac (National Civil Aviation Agency) reports. For example, widening and reinforcing of the runways will be carried out in the Brazilian cities of Eirunepé, Yauarete, Estirão do Equador and Palmeiras do Jarí in the state of Amazonas, Tiriós (Pará) and Santa Rosa do Purus (Acre), among other initiatives.

Kompakt travels to Manaus to meet Plastiflex's needs

Comara is a military organization belonging to the Comando da Aeronáutica (Air Command) under the General Command of Air Operations (Comgar). Over the course of 53 years, the commission has already built approximately 150 airports, as well as more than 70 undertakings involving renovation of airport facilities and public roads. "These services are part of a series of measures aiming toward increasing airport safety, defense of the Brazilian territory and, indirectly, the integration of regional development, facilitating access and favoring the installation of economic activities," stated coronel Julio Américo Bianchi Reis, Comara's technical advisor.

Rough weather

The peculiarities of this part of Brazil's climate and geography require careful planning to carry out the paving

Work in Vilhena, in the state of Rondônia

work. A variety of adverse conditions must be overcome: nine months of rain, instable soils, the inexistence of stone and the need to produce gravel, in addition to the great distances that need to be crossed when transporting machinery and materials. "It takes 27 days to travel from Manaus to Eirunepé by ferry, and it can only be done between December and June," Reis exemplified. In order to meet the challenge, Comara has its own fleet of 14 ferries and eight push boats. They also have two quarries with gravel crushing centers. "We receive air support whenever necessary. It is also fundamental to not push nature to avoid the risk of seeing the work we have done ruined and wasting resources."

Search for technology

Due to motives brought up by Reis, the current trend is to build roads in the Western Amazon Region in concrete – cement, which costs more but has a lower need for maintenance. "The search for quality is one of the organization's top priorities, especially through better performing, more durable machines that are easier to operate and maintain," Reis analyzed.

For work being done in locations that are difficult to reach, functions that help clients in their interventions become necessary, such as the control panel which offers real time diagnostics. The display, connected to the network, keeps the data always up-to-date, making information available so the operator, when carrying out maintenance work, can analyze a problem's cause quickly and objectively. This technology helps reduce down time.

The pavers are also great for working in large undertakings such as airports, since they associate high technology with an electronic grading system that makes it possible to use several different types of sensors and provide excellent performance, resulting in quality and precision in the execution of all types of pavement. Finally, it also provides excellent stability and robustness, leading to excellent profitability, through a modern hydrostatic transmission system that allows for excellent performance under a wide range of operating conditions.

Easy adaptation

Following the same line of thinking as Comara, Plastiflex Empreendimentos da Amazônia Ltda., located in the Brazilian city of Manaus (in northern Brazil), also sought out improved technology to meet its operating needs in a beneficial way. In October, they bought a Kompakt asphalt plant. According to Gileno Vieira da Rocha, coordinator of the company's roadbuilding work, their choice of the model was endorsed by its ease of movement: "Since we work in several cities in the state's rural areas, the machine's ease of movement from one site to another is an advantage." The plant will first be used to pave 34 kilometers of the highway system for Nova Aripuanã, an Amazonian city located on the border between the states of Pará and Mato Grosso. "The land moving has almost been concluded. The job should be finished in 2010."

Plastiflex has been operating in that region for 28 years in the field of civil construction and for two years in the paving segment. Among the large scale projects being carried out by the contractor, Rocha points out the enlargement of the headquarters of the Amazonas Government Palace. "That was a R$ 36 million job, carried out in a record time of 120 days," he said.

Paver in Tiriós, in the state of Pará

Technology redefines the concept of control

New **control** systems in **Ciber's pavers** have been designed to work in **favor** of the operator and **contribute** to carrying out quality, safe and **precise work**

Ciber's line of pavers meets the needs of a wide range of applications. Constant investments in innovation and patents by the company aims to provide the market with technological contributions, in this way providing conditions for companies to work with quality on jobs planned in Brazil and across Latin America. For example, the new control panel was designed with an efficient automation system for maintaining precise control of the machine's operation.

Technology is the key word to define the new paver's control concept, based on two main points: the electrical system, which brings together all of the equipment's facilities in a single printed

circuit board that lends precision to its actions and reduces the volume of harnesses and connectors considerably, consequentially lowering the possibility for errors. The second point is the control panel, which was designed in fiberglass with a much more ergonomic and sturdy design.

Operating ease

Ciber's complete line of pavers includes two pieces of important technology. These are Easy Paving® and Driving Control®.

Easy Paving® is synonymous with practicality and ease of operation, directly influencing the excellence of the final results. The control system was designed to favor the human/machine interaction, making it more independent and apt to identify monitoring needs.

The system has a visual display, on which all of the functions, alarms and diagnostics can be viewed with real time images and messages. By having access to data that is always up-to-date, when interventions become necessary workers are equipped with all the information they need, making it possible to analyze the problem's cause in a fast, objective way, considerably reducing down time. "Thus, it does away with the use of a variety of instruments, which besides taking up a great deal of space, need to be interpreted by the operator. For its part, the display supplies ready information in a clear, objective way," explained Rodrigo Pereira, from Ciber's Application Engineering department.

Paving precision

Then there is Driving Control ®, which lends precision to paving jobs.

This technology is responsible for the control and monitoring of the paver's steering and transmission system, bringing together a display and two control modules interconnected by a high-speed network, the CANopen (Controlled Area Network). "The machinery's main functions are controlled automatically. Parameters, such as those for the transmission and power, are automatically adjustable, adapting the equipment to different types of requirements," stated Pereira. In addition, the system is meant to meet several different kinds of demands, with the aim to bring accuracy to the process, avoiding rework and production delays.

Another important point is related to the question of safety. Other basic functions are included on the paver's control panel, such as an emergency button, horn, reverse movement alarm and parking brake. "These features keep the working team safe during inspections or when interventions become necessary. The panel is easy to operate, since it makes use of internationally recognized symbols," he added.

Easy Paving

Easy Paving ® Technology

- Greater precision and ease in controlling the equipment;
- Intelligent automation system monitors and controls all functions

General Characteristics

Ciber offers the market two different lines of pavers. The Compacta series (AF4000 and AF4500) and the PLUS series. The Compacta line is defined by its reduced size that makes it easier to move during urban paving services.

The AF5000 PLUS offers great profitability for a wide variety of applications, for medium and large scale jobs, and is ideal for jobs that require great traction efforts. The AF5500 PLUS has wheels designed to carry out paving while using High Flotation 14.00R24 tires, providing great mobility and speed. The main objective is to facilitate constant movement between job fronts.

Contractor Queiroz Galvão on job strategically important for Brazil

The Brazilian contractor is responsible for three of the **project's** lots, based on the North American **"Super Pave"** method, under the responsibility of **Petrobras**

Ciber is leaving its mark on the project to duplicate highway BR-101. Among the fleet of machines working on the undertaking is a UACF 17P-2 Advanced. The equipment was acquired by Queiroz Galvão – a contractor present in several Brazilian states, Latin America and on the African continent – responsible for work being done on three of the four lots the National Department of Transportation Infrastructure (DNIT) bidded for in the state of Rio Grande do Sul. The plant has already produced 70,000 tons.

The company is carrying out changes on the federal highway, on stretches crossing the cities of Dom Pedro de Alcântara, Maquiné, Osório, Terra de Areia, Torres, Três Cachoeiras and Três Forquilhas. As part of the project to widen the highway, one of the jobs that stands out is the building of two tunnels on Morro Alto (high hill), on Rio Grande do Sul's northern coast, which will reduce the route between the city of Osório, Rio Grande do Sul and Palhoça, Santa Catarina by 11 kilometers. According to the contractor, the 1,837 meter tunnels will have two lanes and cross sections of 125 square meters each.

Work being done on Morro Alto tunnel

The work being done is of great economic significance to Brazil. According to DNIT,10,000 vehicles on average circulate on highway BR-101's stretch between Florianópolis (capital of Santa Catarina) and Osório. This number will jump to 40,000 after the work is concluded. In addition to reducing accidents and providing greater safety for drivers, the duplication will improve logistics and the flow of merchandise from the southern region of Brazil to its mid-northern region. The area is also of strategic importance to the integration of Mercosur countries.

Unique techniques

Due to the intense traffic on highway BR-101, the pavement's thickness has been designed to stand up to the loads of heavy commercial vehicles, with three layers of asphalt being applied. Under the responsibility of Petrobras, the creation of the project was based on the North American"Super Pave" method, under the

responsibility of Petrobrás, with different percentages of HMAC serving to avoid permanent plastic deformation and cracking. According to engineer Raljo Borges Naylor, of Queiroz Galvão, on lots 1 and 2 the lower, intermediate and lane layers are 5 centimeters thick each, with 5.1%, 4.5% and 4.2% HMAC, respectively. For their part, the measurements for the third lot's layers have other characteristics: lower (6 centimeters and 6.4% HMAC), intermediate (5 centimeters and 4.5% HMAC) and roadway (5 centimeters and 4.6% HMAC). In order to optimize its adhesion, 0.12% Betudope is applied.

The different percentages of HMAC between the layers will result in its ascending flow depending on what the traffic demands.

This will make the pavement more durable.

State-of-the-art technology

Achieving process excellence also requires using the right technology. The UACF 17P-2 Advanced unit contributed to this end. Naylor emphasizes that Ciber's longstanding recognition in the market influenced their decision to acquire the unit: "One of its advantages is its having an external pugmill type mixer.

The UACF Advanced counter-flow plants add value to jobs of great magnitude, such as this one being carried out by Queiroz Galvão. That is because it combines complete portability (obtained with constant production technology) with mix quality. The useful life of the asphalt mix is ensured by the fact that the HMAC is not exposed to high temperatures. These are versatile and reliable plants that can be adapted to use different materials and face different weather conditions.

UACF 17P-2 Advanced operating on BR-101

Characteristics of each layer

Lots 1 and 2:

Roadway layer	**Thickness:** 5 cm **Properties:** B1: 45%; B0: 22%; Powder: 32%; Calcium Hydroxide: 1% **HMAC:** 4.2% (with 0.12% Betudop to optimize adhesiveness)
Intermediate Layer	**Thickness:** 5 cm **Properties:** B1: 49%; B0: 15%; Powder: 36% **HMAC:** 4.5% (with 0.12% Betudop to optimize adhesiveness)
Lower Layer	**Thickness:** 5 cm **Properties:** B1: 49%; B0: 15%; Powder: 36% **HMAC:** 5.1% (with 0.12% Betudop to optimize adhesiveness)

Lot 3:

Roadway layer	**Thickness:** 5 cm **Properties:** B1: 38%; B0: 24%; Powder: 31%; Fine sand: 5.5%; Calcium Hydroxide: 1,5% **HMAC:** 4.6% (with 0.12% Betudop to optimize adhesiveness)
Intermediate Layer	**Thickness:** 5 cm **Properties:** B1: 38%; B0: 25%; Powder: 31%; Fine sand: 6% **HMAC:** 4.5% (with 0.12% Betudop to optimize adhesiveness)
Lower Layer	**Thickness:** 6 cm **Properties:** B1: 33%; B0: 17%; Powder: 50% **HMAC:** 6.4% (with 0.12% Betudop to optimize adhesiveness)

WORD FROM THE SPECIALIST

Milling Machines and Recyclers

Lídio Coutinho Ciber's Service Coordinator

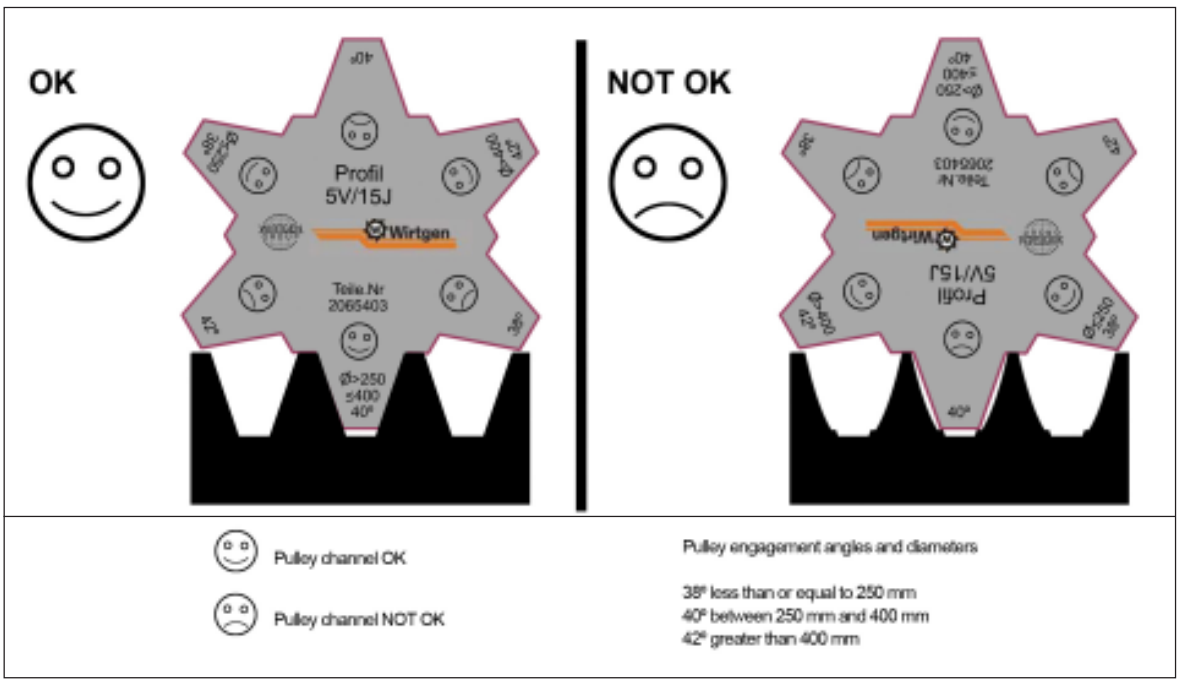
Clients are increasingly concerned with optimizing their services, meeting deadlines, and also maintaining their equipment. In order to efficiently serve their clientele, machine availability becomes crucial. A piece of equipment's working life is ensured by a high level of preventive maintenance carried out according to the manufacturer's specifications in combination with the equipment's quality and robustness.

For Milling Machines and Recyclers one kind of preventive maintenance operation that is important for ensuring the equipment's availability is to check on the wear of the "V" belts and pulleys of the milling roller's drive system. Oftentimes, belt wear is related to natural wear of the pulley's channels. This wear drastically reduces the contact area of the belt with the pulley's channel.

Thinking of this, Wirtgen included a gauge in the equipment's tool kit that makes it possible to quickly and effectively check on the pulley channels' level of wear. In this way it becomes very easy for those responsible for maintenance to monitor the wear on the pulleys and make timely decisions to replace this part, without the risk of purchasing unnecessary belts and avoiding the down time involved in replacing them outside the maintenance schedule.

The gauge is very simple to use and can be used on the entire range of diameters and angles of pulleys used in Wirtgen machines that use the milling roller drive system with "V" belts.

The Image below shows how simple and easy it is to use the gauge.



Ciber's Service Department is always ready to serve our clients. Contact us by email at service@ciber.com.br or by telephone at 55 (51) 3364-9261. +55 (51)

EQUIPMENT THAT MEETS ALL YOUR WORK NEEDS

WIRTGEN GROUP

Close to our customers

ADVANCED SERIES

Counterflow Asphalt Plants

- Accurate and easy-to-operate control system
- External mixer with double shafts that ensures an excellent mixture
- Filtration system through bag-house filters: solutions that exceed the most rigid environmental standards
- Compact, easy transport and install, with high-quality productivity

ROAD AND MINERAL TECHNOLOGIES

www.wirtgen-group.com
www.ciber.com.br

FIVE STRONG BRANDS, AN UNMATCHED PORTFOLIO FOR ROAD CONSTRUCTION AND MINERAL TECHNOLOGIES

WIRTGEN GROUP

Close to our customers

KLEEMANN MR 122 Z

VÖGELE SUPER 1600-2

CIBER UACF 17P-1 Advanced

HAMM 3411 P

WIRTGEN W 1900

ROAD AND MINERAL TECHNOLOGIES

www.wirtgen-group.com
www.ciber.com.br