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Usina de Notícias

Number 23

- **Market** AAA Triple A Asphalt operating in Western Australia
- **Infraestrutura** Rubber asphalt used in Colares & Linhares construction work

SPECIAL

Year of Kleemann Brand in Brazil

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Kleemann Arrives in Brazil and Colombia

In 2011, Ciber began selling Kleemann products in Brazil. The brand was already a strong presence in Colombia, with clients like ASSA, KMA and Grodco

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Unifresa and FBS on IndyCar track

Two Brazilian-based companies, Unifresa and FBS are working on improvements to the IndyCar track, where special milling techniques and asphalt mix were used.

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OPINION

New times

Clauci Mortari
Ciber Commercial-Director

This year, Brazil underwent intense political changes as a result of the 2010 presidential election, a transition period that also had an influence on business. This is because the country is in the process of adapting and reorganizing the projects in progress. These are provisional times; nevertheless, this has not done away with the expectations for an investment boom in 2012.

Confidence is so strong that Ciber has expanded its participation in the Brazilian market, making yet another Wirtgen Group brand available to its Brazilian clients: Kleemann. With its factory in Germany, the brand has arrived to serve an important market demand, namely the mining sector. Its products are here to introduce a change of concepts for crushing equipment. We have begun selling mobile crushing units, considered a global trend. In addition to having access to this innovative technology, companies will also be able to rely on technical and after-sales service right here in Brazil.

Kleemann's arrival in Brazil gives another choice for the contracting segment, which has long relied on a wide range of Wirtgen Group products for work on large and small scale construction projects. The corporation, of which Ciber is a subsidiary company, offers complete solutions for paving work, compaction, recycling and now, crushing. All its choices have the same high quality expected from a group with over half a century of experience.

Another important initiative being undertaken is the inauguration of Wirtgen Brasil. It has its own facilities for technical support and parts, as well as providing assistance in the states of Rio Grande do Sul, Santa Catarina, Goiás, Federal District, Mato Grosso, Tocantins and Maranhão. The main idea is to be able to serve our clients in all their needs.

New Vögele factory inaugurated

Ludwigshafen am Rhein, Germany has become home to the new factory of Vögele, a subsidiary of the Wirtgen Group. The fruit of a 100 million euro investment, the factory unit, inaugurated at the beginning of 2011, includes a large technological apparatus and a special educational and training center. The factory has a total area of 370,000 m², with 70,000 m² of that area being indoors, as well as a 10,000 m² administrative building. Vögele is considered to be the world's most advanced paver manufacturer. In Brazil, Porto Alegre-based Ciber sales the Vögele product line.

The factory complex has a total area of 370,000 m²

City in Minas Gerais invests in paver

Recently, the Conselheiro Lafaiete City Hall (Minas Gerais, Brazil) bought a paver from Ciber to use for its urban paving work. According to Luiz Carlos Godoy Pereira, secretary of the city's Construction and Environmental Department, the government's goal is to pave the roads providing access to the city's districts and neighborhoods, as well as invest in paving those streets currently paved with flagstones. The initiative is part of a plan of action towards promoting the development of Conselheiro Lafaiete and aims to improve asphalt quality. "We are planning to pave approximately 80,000 meters of roads, which means 4,400 meters per month," calculated Pereira.

Equipment to operate on 80,000 meters of roads

Ciber supports community project for children and adolescents

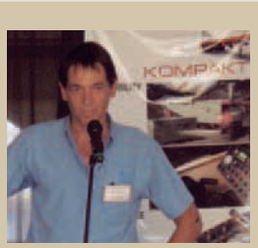
Ciber Equipamentos Rodoviários, a subsidiary of the Wirtgen Group, has embraced the cause of the Centro de Promoção da Criança e do Adolescente São Francisco de Assis (CPAC), located in Lomba do Pinheiro neighborhood on the outskirts of the city of Porto Alegre, Rio Grande do Sul, Brazil. Last year, the company entered a partnership with the institution to support the work it promotes. The support contributes to building a new center for CPAC, which was named Casa Santa Clara. The space has three different environments, with two rooms for serving children and another for administration and serving the families of the children and adolescents it works with. The partnership also involves ongoing, on-site maintenance and improvements. The center works as a network of services and programs for the neighborhood community, with initiatives concerned with strengthening family ties and providing professional training for adolescents and adults, in addition to mediating conflicts and creating rehabilitation groups for young people who have committed crimes. Children aged 6-14 years of age benefit from before or after school educational activities, cultural and sports workshops, homework help and meals. "More than 800 people visit the institution every day. This is an at-risk population, surviving in precarious conditions and far away from practically all government services. Our programs are based specifically on promoting access to rights and projects of an educational nature," stated Everton Silveira, educational director of Instituto Cultural São Francisco de Assis.

A new space for CPAC services

Africa meets the Kompakt 500

On March 2, Ciber held an event to launch the Kompakt 500 in Africa. The activity was held in the Johannesburg Metropolitan Area, with the goal of presenting clients from the African continent a choice of equipment for urban and highway work, with a compact design that makes it easy to assemble for operation.

Clients at Kompakt 500 launch



Heinrich Schulenburg – director of Wirtgen South Africa

In South Africa, Ciber gathers clients to present the Kompakt 500 and its competitive advantages

Soebe uses oscillation technology for soil compaction

A **Hamm 3414 VIO** compaction unit was adopted by **Soebe contractor** to operate on a **construction project** on an **important roadway** for the Brazilian city of **São Paulo**

São Paulo-based Soebe Construção e Pavimentação is working on a project on Marechal Rondon Highway. Officially known as SP-300, the road is considered one of the most important for the state's highway system. The company has been active in the Brazilian market since 1964, with an industrial park equipped for the production of asphalt emulsions used in road surface maintenance and highway construction.

For the SP-300 project, the contractor made use of Hamm 3000 Series oscillation technology. The compaction unit is working on improving the highway's shoulders on a 40 kilometer stretch and repairing the third lane. Soebe's 3414 VIO is the first single-drum roller model in Brazil designed for earth compaction and with a base that makes use of oscillating technology. According to engineer Carlos Bedin, who works on the contractor's team, the project was launched 10 months ago and the equipment has already logged in 250 work hours.

Unique Solution

With Hamm-patented VIO technology, the rotation is based on the two cams located inside the compaction drum, so that the force applied is directed according to the mode selected. Using them shallower and more horizontally causes the oscillation reflections to reach a smaller area, since it elevates the concentration of shock waves generated. This solution makes its use possible near buildings that are fragile and over water conduits, pipes and tubes without breaking them.

Cusco City Hall working on roads

The **plant** was purchased by **Cusco City Hall** for paving work **in the city**

Compact plant for work in inhospitable regions

Located in Peru, South America, the city of Cusco has been making significant investments into preserving its road infrastructure. The injection of funding fulfills the need to preserve the territory known as the Sacred Valley of the Incas, which attracts tourists from different parts of the world. In order to do the work, the city government acquired a Kompakt 500 counterflow asphalt plant, the first sold in that country by Ciber.

The equipment arrived in Cusco at the beginning of the year and is already providing positive results. Neither the geographic location, nor extreme altitude (3,500 meters) and humidity have had a negative influence on the plant's operating capacity. The Kompakt 500 was designed specifically for construction projects that need to be carried out quickly, in inhospitable regions like the Peruvian highways, which are located in mountainous areas of the Andes region and have accentuated curves.

Left to right: Gilbert Galdós, head of team responsible for the plant; Fernando Palma, city secretary; Luis Flórez García, Cusco mayor; Cristiano Lameira Ciber, commercial manager; Juan Manuel Draxl, general manager of Intermaq SAC; and José Luis Farfán, infrastructure manager

KLEEMANN IN BRAZIL

Crushing with innovative concept

Brazilian civil **construction contractors** now have the option to use the **products of the Kleemann line**, which make up the mix of items offered to the market by **Ciber**

Ciber Equipamentos Rodoviários intensifies its participation in Brazil, selling a wide range of mobile crushers from Kleemann, which is a subsidiary of the Wirtgen Group. The equipment is imported from the factory in Germany and aims to supply companies in different segments such as mining, quarrying, construction, and paving. Besides having access to cutting-edge German technology, the Brazilian infrastructure sector also now has another advantage: personalized customer service in their country of origin, which extends from pre-sales to after-sales.

Kleemann solutions arrive in Brazil during a positive period and one of peak demands in construction. The equipment of this brand comes on the scene as one more element to supply the projects related to recycling spearheaded by the National Government. Among them are the services stimulated by the federal law that deals with managing the waste generated from construction—resolution from the National Council on the Environment (Conama).

The measure aims to minimize the significant percentages of liabilities generated in urban municipal areas.

Positive contribution

This is a great opportunity for the segment and a huge market to be embraced that requires technical feasibility. "The production chain of this sector starts with the production of raw material, which requires modern and efficient crushing and screening equipment with full mobility. This market niche is Kleemann's target," says Ernani Martineschen from Wirtgen Brazil.

The tradition of the Wirtgen Group with its strong presence in the roadbuilding niche is an important premise of consolidation of the new brand in Brazil. "Competition among the players in the industry is natural. However, it is something easy to overcome because the company has a network of satisfied clients who are confident in the products it offers," he points out.

The sales coverage comes with support from Ciber's network of dealers across the country who in turn are supported by Wirtgen Brazil (WB). The Wirtgen Brazil sales directly only in the states where there are no dealers such as Rio Grande do Sul, Santa Catarina, Goiás, Distrito Federal, Mato Grosso, Tocantins, and Maranhão. The team includes professionals who are capable of identifying and proposing the best options—for example, new components or a preventive maintenance plan. The large inventory of spare parts has a capacity to meet consumer demand in Brazil.

The new line that arrives in Brazil comes with an innovative concept in mobile crushing units: the electro-hydraulic feeding system. This mechanism is the result of years of research, surpassing other similar hydraulics that can only use diesel. Kleemann solutions maintain the option to apply this fuel, but also offer an electrical configuration. It is a competitive advantage because it implies in a 50% savings in diesel consumption.

A highlight of the brand's product mix is the Mobile Impact Crusher Mobirex 110 Z EVO with an Integrated Return Screen. The model combines the most modern technology in the world for recycling construction wastes with high rates of granule size reduction, high productivity, coupled with low operating costs.

Experience combined with cutting edge technology

Kleemann is a Germany company that started its activities in 1857. They have been in existence for 157 years, 90 of which dedicated to producing innovative and high technology grinding equipment. The brand was incorporated into the Wirtgen Group in 2006 and, just like other subsidiaries, passed through a process of intense structural investment with the injection of funds in the order of 68 million Euros for the construction of a model factory in technology and quality.

This project considered the need to expand the business line of mineral technologies to a global scale. Kleemann's manufacturing unit was completed in November 2009 and was designed from a state-of-the-art architectural standpoint following the most modern German standard also

in the category of construction technology, automation, and operational logistics. The plant occupies 125,000 m2 with 35,000 m2 of production area and 4,000 m2 for the administration building. "We have the ideal foundation for future success. We have established the technical foundations for our skilled workforce to supply high quality crushing and screening plants to the international markets," says the plant's managing director, Gerhard Schumacher.

KLEEMANN COLOMBIA

ASSA bets heavily on Kleemann

Kleemann equipment belongs to the **KMA/ASSA** and **Grodco fleet**, which is operating on a project in **Colombia**

Although Kleemann is a recent entry to the Brazilian market, its acceptance in other regions of Latin America is a consummated fact. That's the case in Colombia. Among the many Ciber clients who are fans of the crushing solutions that bear the reputation of this line, by a subsidiary of the Wirtgen Group, are Colombian companies like KMA, ASSA and Grodco. Both have bet on the equipment to work on national scale projects. The operating success and number of crushers circulating in that country prove the brand's potential.

Since 2009, the contractors KMA and ASSA have been working a fifteen year government concession on the so-called Caribbean Route, in the city of Arroyo

de Piedra, in the Atlantic. It is an extremely relevant initiative for the region, since it involves the highway that crosses the departments of Cartagena and Barranquilla – an area of intense heavy vehicle traffic, the result of merchandise being sent inland and loads sent out to the ports.

In the KMA and ASSA fleet

For the construction site, the company took six Kleemann products purchased last year. Its machine fleet has two units of each model: MR 110 Z EVO, MC 110 Z and Mobiscreen MS 19 D mobile screeners. The contractors' choice of this unique, world recognized technology considered the special need to provide highly demanding services, also converging on the two companies' policy to work using the total quality concept. "Many factors influenced our decision to purchase Kleemann products. Among them were maneuverability, speed in replacing worn elements and robustness," stated ASSA's Germán Rivadeneira.

Kleemann machines operating on Colombian soil

Grodco's Bet

In the same way, maintaining the excellence of its processes is an ongoing goal for Grodco. The Colombian company is part of the team of contractors engaged in works concerned with encouraging the development of the highway infrastructure and consequentially, the national economy. Currently, it is in charge of maintenance on a road between Bucaramanga and Santander, where it relies on the support of Kleemann equipment: Mobicat MC 100 R, Mobicat 110 Z, two Mobicone MCO 11 SX and two Mobiscreen MS 19 D units. By way of a government contract, Grodco is caring for maintenance on the stretch in order to ensure good traffic conditions and safety on the road.

Set of mobile crushers - Arroyo de Piedra - Colombia

Colombia: the time for asphalt plants

The **UACF Advanced** models occupy an **important position** in the **projects** of contractors in Colombia towards the **development** of **sustainable** business

Companies of several nationalities have begun using Ciber's asphalt plants, especially in Colombia. In that country, there are approximately 40 pieces of equipment from that line working on government and private projects. Three large Colombian groups have given in to the exclusive advantages that combine operating capacity and environmental well-being. Grodco used the UACF 17 P-1 model on the work done in the Bucaramanga and Guajira region. ASSA and KMA, for their part, opted for a UACF 17 P-2 and two UAB 18 E gravimetric plants for their work on the Caribbean Route, in Arroyo de Piedra.

The country, with approximately 42 million inhabitants, can be considered strategic for Latin America. The federal government has long been injecting funding towards infrastructure improvements, including heavy investments in road projects. "We have seen wide development for the Colombian market over the last 16 years. To give you an idea, more than 350 Wirtgen Group machines have been sold, including the Voegele, Hamm, Ciber and Kleemann brands," stated Francisco Isaza, president of Fiza.

Peculiarity on the Pavement

Plants perfectly meet the specific profile of work done in the country. Intensely influenced by the Andes Mountains and high altitudes, the Colombian territory requires equipment with systems ready to overcome such adversity. Singularities of this type were considered during design of the Ciber line, which has attributes that ensure heat efficiency, as well as configurations that allow for practical, quick movement in mountainous areas.

No less important are the plants' mechanisms for controlling the impact of their activities on the environment. One vital point for contractors who need to do their construction work while obeying the strict regulations of Colombia's environmental agencies. These rules aim to oversee the burning and combustion methods used outdoors in rural areas, as well as elimination of sulfur dioxide emissions.

Technical Advice
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FUEL FLOW CALIBRATION

Environmental sustainability is a constant management concern for contemporary organizations. Companies are seeking to carry out their operations using practices that minimize their impact on the environment. Among these concerns, reducing energy expenses and reduced fuel usage stand out.

Ciber, with its over 50 years of experience, developed the market's most economical asphalt plant. Both in the form of training offered and in the publication of technical advice, we strive to stay close to our customers, informing and instructing them on the best way to operate our equipment.

Ciber's counterflow asphalt plants have a dryer that is completely dedicated to drying, heating and homogenizing the additives. This is so important that, in order to achieve excellent efficiency, we have to take several variables directly linked to the plant's production into consideration. They are: additive moisture, environmental temperature, grain size (additive type and classification), additive flow, dryer positioning, burner potential and the fuel employed (its heating power, flow and pressure).

In terms of flow, Ciber's burners come pre-specified for each type of asphalt plant (see the table below). This data, associated with the pressure to atomize the fuel-oil, plus efficient exhaustion of the gases, will result in a "rich burning" system.

Another very important detail is related to the fuel's burning temperature. However, some fuels do not require heating, such as diesel, which can be burned at room temperature. For their part, heavy fuels like BPF, BTE and schist, among others, require heating to lower their viscosity and optimize burning. If not, dense, cold particles will not burn completely and will be sent on by the exhaust to the bag filter, accelerating its saturation, while another part will be sent to the additives, harming the HMA application process.

Kompakt 500 – 6" blower:	Up to 300 l/h* = 5.0 l/min - 6.000.000 kcal/h
UACF 15 P1/P2 Advanced MC – 8:	Up to 400 l/h* = 6.7 l/min - 8.000.000 kcal/h
UACF 17 P1/P2 Advanced MC –10:	Up to 600 l/h* = 10.0 l/min - 10.000.000 kcal/h
UACF 19 P2 Advanced MC –10:	Up to 750 l/h* = 12.5 l/min - 12.000.000 kcal/h

To this end, we have prepared several technical tips for correctly adjusting the fuel flow for your plant:

Keep the fuel outflow for the plant's tank closed (manual valve);

The fuel should be at the same temperature as the burning;

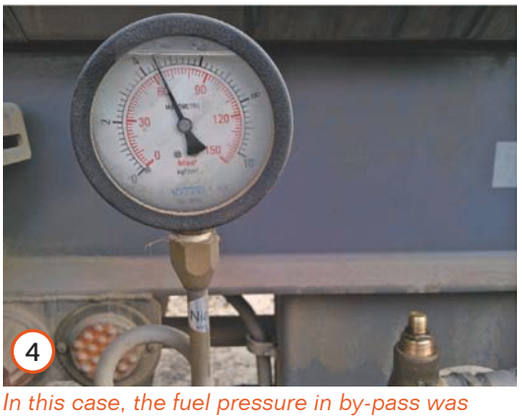
Open the thermal oil heating system, if using heavy fuel;

Turn on the fuel pump;

Pre-adjust the fuel pressure to between 3 and 5 Kgf/cm²;

Check the pressure of the by-pass and adjust it if necessary, on the valve next to the pressure gauge;

In the example in this photo, the pressure was 6.0 bar;



In this case, the fuel pressure in by-pass was adjusted to 4.4 Kgf/cm²;

Controlling the plant via the manual panel, keep the fuel pump on and also turn on the compressor;

Put the burner control on maximum, increasing the air/fuel ratio to 100%;

Check what the maximum point of the metering valve was;

This adjustment will be for the plant's maximum flow capacity;

7

Controlling the plant via the monitor, keep the fuel pump on and also turn on the compressor;

Open the burner control and increase the air/fuel percentage until the air reaches 100%;

The fuel should reach 80% to 90%;

If using diesel, calibrate the environmental temperature;

9

Move the "pilot" screw on the fuel valve from 0 to I position;

When the pilot is in 0 position, the valve will be in automatic mode;

11

Disconnect the fuel hose from the burner;

Have a recipient that will withstand temperatures of up to 150°C;

The collection temperature of the fuel should be the same as the burning temperature;

8

Check if the meter has reached a maximum value between 3 and 5 on the scale;

10

With the pilot in position I, the valve will be in manual and always open, in the case of compressed air;

With the air pressure the valve will open;

12

The recipient should be marked in liters or be weighed and tared;

13

Use Individual Protection Equipment;

Place the hose in the recipient to collect the fuel;

The line should be filled with fuel prior to collection;

Time 1 minute from the opening of the tank's manual fuel outflow valve;

The fuel collected should be measured or weighted;

In this example, we are using a 600 l/h or 10 l/h capacity;

After 1 minute, close the valve;

Adjust the metering valve, loosening the actuator shaft with a 10 mm wrench;

With your hand, turn it to the right, opening from 3 to 3.5;

Weigh the content collected, subtracting the tare of the recipient;

In this case, the fuel collected was 7.20 Kg, but it should have been 10 Kg;

Adjustments are necessary;

The collection should always be via the hose after the metering valve and before the burner entrance;

Fasten the actuator on the shaft of the metering valve;

Each 5 mm opened corresponds to approximately 3 liters more fuel; This test was carried out with diesel, less than 4.4 Kgf/cm^2;

Repeat the collection process;

After the second collection, we obtained 10 Kg and the adjustment was kept the same;

Return the pilot screw from I to 0 and reinstall the fuel hose;

Carry out production tests.

In this way, it will be possible to save fuel, prevent the filters from being saturated by excessive fuel, or that the fuel is too scarce, harming the HMA production by low temperatures.

Brazilian contractor **Polienge** involved in **large scale projects** in the **state of Pará** and contracts for **private companies** and the **government sector**

Polienge stands out in Pará

In northern Brazil, Polienge is one of a long list of contractors participating in important projects focused on regional development, contributing to increasing road infrastructure in the state of Pará. In recent years, the company has grown significantly with a portfolio of clients from both the government and private initiative spheres. Increased demand, along with the increased requirements for the work the company is hired for led to the need for greater investments and ongoing operational qualification.

Strong business led Polienge to expand its machinery fleet. Last year, the contractor closed a deal on a package of equipment with DeltaMáquinas, The new technological addition is an action to catalyze results, obeying the company's policy of staying up-to-date and competitive on the market.

Joaquin Ferreira and Mário Nóbrega of Deltamaq, in the company of Polienge director Alex Carvalho, and Ricardo Lobo, of Síntese Engenharia

Mega Contract

The contractor's recent Ciber acquisition was made on the occasion of closing a paving contract with Miriti Internacional Golfe Marina condominium, in the Brazilian city of Belém do Pará. The undertaking is under the supervision of RA Empreendimentos, made up of Marko Engenharia and Síntese Engenharia, which entrusted Polienge with the responsibility of paving and finishing a 16 kilometer stretch with high durability asphalt. According to Alex Carvalho, director of Polienge, the goal to surpass the contracting party's expectations and the need to deliver a quality end product is what motivated the decision to apply funding towards equipment that carries an internationally recognized brand. "We have several products by the Wirtgen Group. At the Miriti condominium, we're using compactors from the Hamm line and a Ciber paver (AF 4000 model)," he emphasized. The Kompakt 500 counterflow asphalt plant was also present on the construction site, with its characteristics that were custom designed for jobs that require compact, high productivity models.

Australian company **AAA Triple A Asphalt** operates across the country's western region, using **plants** with **Ciber technology**

Quality asphalt production in Australia

Ciber is also reaping excellent results in Oceania. AAA Triple A Asphalt company, located in the city of Bibra Lake, western Australia, chose to use equipment sold by the manufacturer, which has its factory in the state of Rio Grande do Sul, Brazil. Adding more technology means investing in resources for perfecting the jobs undertaken by way of significant government and private sector contracts. "Our goal is to be the best at what we do, ensuring an unbeatable level of service and quality," stated business owner Frank Italiano.

The company recently completed another sizeable port job in Broome, a tourism village located in Kimberley, western Australia. This program aims to structurally revitalize an area widely frequented by tourists who are fascinated by its Cosmopolitan characteristics and traces of Chinese and Japanese culture. Despite being a sparsely populated area with a fixed population of 14,000 Australians, the interest of foreigners in the region increases the monthly volume to 45,000.

Left to right: Frank Italiano (AAA Triple A Asphalt) and Guilherme Ratkiewicz (Ciber)

Job in the tourist village of Broome

At the Rhythm of the Market

The service sector is responsible for almost half of the country's economy, including immense centers aimed towards tourism, with restaurants, hotels and community housing for exchange students from different parts of the world. Another important economic sector is mineral exports. The territory is home to gigantic reserves. For this reason, there are several projects related to expanding the areas near the mines, focusing on logistics, railroads, ports and highways. According to Italiano, these sizeable investments in infrastructure

are matching the rhythm of growing demand for commodities, especially iron and gold mining and natural gas. "This positive situation catalyzed business in the civil construction segment, generating intense demand for quality asphalt components – the part we work with in projects."

For asphalt production, AAA Triple A Asphalt uses the UACF 17P-2 model. "In 2010, we bought a Kompakt 500. It was delivered to the city of Perth and has already logged in travel of approximately 10,000 kilometers, operating on five different fronts of western Australia," he explained.

The potential of the Australian market is very promising. According to Guilherme Ratkiewicz Rodrigues, of Ciber, the company's product lineup is ready for a wide variety of applications. "The UACF 17P-2 and UACF 19P-2 plants are the perfect solution for large scale work, while the Kompakt 500 is ideal for urban maintenance."

Kompakt 500 has logged in over 10,000 km

NG Asfalto invests in Ciber technology

In order to achieve high rates of quality, NG Asfalto combines innovative technology with specialized asphalt application techniques. Among their recent equipment purchases, stand outs include two Ciber pavers, the AF4000 and AF5000 PLUS models.

Left to right: Luiz Henrique Teixeira de Oliveira, construction director; Geraldo Teixeira de Oliveira, general director; Rodrigo Rodrigues Pereira, regional manager Wirtgen Brasil; and Samuel Sodré Carvalho, manager

Pavers operating on job in state of Goiás

The machines are operating on a project in the city of Aparecida de Goiânia, in the state of Goiás. NG was hired to apply 4 centimeter deep HMA type DNIT level "C" asphalt mix on a total of 22,000 m² in the city's industrial hub.

The company has operated in the Brazilian market for seven years now, extending its work throughout the country's midwest. Skilled in supplying complete assistance and services with the highest technical standards, NG has carried out more than three hundred jobs of different sizes. In its undertakings, it has laid approximately 1 million tons of asphalt.

Innovation with Rubber Asphalt

Raw material derived from **420,000** recycled **tires** was used **to repair** a 35 kilometer stretch of **highway** in **Rio de Janeiro**

Rubber asphalt is emerging in Brazil as an alternative for road repair work. It was adopted as a solution for the job on RJ-122, which links the cities of Guapimirim to Cachoeiras de Macacu, both in the state of Rio de Janeiro. The development of gap graded asphalt was placed under the responsibility of contractor Colares & Linhares, the Rio de Janeiro Highway Department (DER-RJ) and the Federal University of Rio de Janeiro. The technique used to produce the respective raw material is considered the first of its kind in Brazil, relying on the support of equipment imported from the United States and the UACF 17 P-2 Advanced, sold by Ciber.

Its pioneerism lies in the on-site incorporation of ground rubber into the asphalt binder, in other words, Colares & Linhares makes the AC (Asphalt Cement) mixture containing rubber right at the job site. This process results in a highly viscous end product, giving it increased elastic recovery properties (60% more in comparison with conventional tar) and increasing the pavement's durability to over 20 years. Before, low viscosity rubber asphalt was employed in Brazil, mixed in refineries far away from the roads, which made it difficult to apply large quantities of special mixtures.

Another important point lies in the significant improvements in terms of

sustainability. That is because the binder adds recycled tires – ground up and transformed into rubber powder – to its composition. In the case of RJ-122, 420,000 tires were used to repair the 35 kilometer stretch.

The Colares & Linhares Bet

This environmental bias guides every Colares & Linhares undertaking, focusing its actions based on concepts of excellence and respect for the environment. The contractor, which has over 11 years experience on the Brazilian market, serving DER-RJ, promoting jobs on a large part of the state highways in its highland region and metropolitan areas. Its operations are concerned with caring for roadways and aim towards improving the pavement for safe traffic conditions. The company's resume includes countless jobs in sanitation, drainage, paving work, river channeling and urbanization. Among its many projects, one of the standouts is the construction of state highway RJ-143, in the city of Valença, where a 22 kilometer stretch was paved, including changes in the route.

Its success on the first environmentally correct Rio de Janeiro state highway is also justified by the investment in innovation and equipment capable of ensuring quality service. Colares & Linhares has adopted the use of the UACF 17 P Advanced counterflow plant, with its vibrating screen that makes it possible to limit the grain size of additives in the binder to between 9.5 and 12.7 mm. The model, with a production capacity of 80 to 120 tons per hour, is extremely precise in its dosing, besides being easy to transport and install.

Economic and Sustainable Techniques

Rubber asphalt has arrived on Rio de Janeiro state highways. Read the interview with Ângelo Pinto, Rio de Janeiro highway department construction director, about this new model for paving work.

CIBER What motivated the Rio de Janeiro State Government to choose this new technology involving rubber asphalt mixed on-site?

PINTO While participating in several conferences across Brazil and abroad, engineers from our Department of Highways watched presentations by technicians, researchers and directors of other foreign government agencies, who gave very favorable evaluations of the use of asphalt mixed on-site. Among the many positive aspects that stand out are the cost-saving, technical, sustainability and safety advantages.

CIBER What are the technical advantages of rubber asphalt mixed on-site?

PINTO The viscosity of terminal blends is around 600 to 1000 cPoises, while rubber asphalt mixed on-site runs between 2000 and 5000 cPoises. This is a very important advantage, since it allows more binder to be used without the mixture dripping. In general, rubber asphalt manufactured on-site has a higher percentage of rubber than terminal blends. While the former has around 20-22% rubber, the latter contains between 8-15%, depending on the process used. From an energy usage point of view, in general you can make rubber asphalt on-site using less energy and releasing much less CO2 into the atmosphere than you would producing a terminal blend.

CIBER In terms of gap graded grain size and the SAMI system, what would you say were the benefits of one over the other?

PINTO The gap grain size makes it possible to use a larger quantity of binder, from 8-9%. Using more rubber increases the material's fatigue

resistance. The SAMI system also increases the binder's viscosity, reducing cracking by creating a less permeable membrane that better retains the additives.

CIBER What do users gain in terms of drivability and safety?

PINTO Gap and open grain sizes are less likely to promote hydroplaning, since the water is able to run across the surface between the protuberances of the additives. When the road is wet, it provides significantly improved adherence for tires, thereby increasing driving safety. For its part, open reduces the splashing caused by car and truck wheels. Even better regularity rates are achieved, adding quality to the highway surface, with notably reduced noise levels in comparison with conventional grain sizes.

The remodeling of the **auto racing circuit** relied on work by **São Paulo**-based companies **FBS** and Unifresa

Brazilian Companies on IndyCar RaceTrack

Brazilian company FBS Construtora, supported by another national company, Unifresa, headed up the job to make improvements to the IndyCar track. The competition took place on May 1st on a circuit put together on streets near the Anhembi sambódromo (the site where Carnival parades are held), in the city of São Paulo, Brazil. The work was done during March and April, involving a team of approximately 100 employees and Wirtgen Group equipment. Special additives and techniques stood out as a strategy

to achieve the goal of providing drivers with a safe track that was ready to host the sporting event.

The project met international standards, São Paulo City Hall technical specifications and included renovations to the drainage system, as well as grading corrections and irregularity quotient improvements (IQ). Two layers of level III Hot Mastic Asphalt (HMA) were laid, and a special mix known as Stone Matrix Asphalt (SMA) was used on the final driving surface.

The undertaking was full of peculiarities. FBS and São Paulo City Hall requested a study from the University of São Paulo Polytechnical School's Paving Technology Lab to discover the asphalt mix that would be most favorable to the situations of tangential acceleration forces inherent to auto racing. "In the analysis conducted by professor Liede Bariani Bernucci, it was found that the ideal surface for activities like auto racing, taking the drivers' safety into account, is one that combines SMA with Polymer AC (Asphalt Cement) and cellulose fiber. This is the same asphalt system used on the Interlagos race track, where we obtained great results in terms of adherence and mass stability under the action of the tires," pointed out Ricardo Carvalho, FBS construction coordinator.

Technological Precision

Just like the methodology and materials used in the process, another concern of the company is in gathering highly skilled labor and cutting edge technology.

Wirtgen Group equipment at work on IndyCar track

The engineer pointed out the participation of Wirtgen Group products towards obtaining greater surface texture than tracks with conventional grain sizes. "In this case, it was crucial to use a milling machine with technology that could precisely control the grading, as well as equipment to apply an extremely high quality asphalt mix, like the Vögele Super 1800. The paver's Spray-Jet system made it possible to simultaneously apply emulsion and asphalt, ensuring that the entire binding finish would be preserved.

Milling Quality

FBS relied on support from Unifresa, a subsidiary of the Ane Group, which is back for a second time on the IndyCar track to carry out the regularization milling, operating with a Wirtgen W1900 equipped with Multiplex sensors and a standard cylinder with 15 mm lateral spacing between its tools. In order to execute a cut with a profile that met the project requirements, including drainage, a plano-altimetric survey of the entire track in asphalt was done. "Every 5 meters longitudinally and 1.90 meters transversally, we had the cutting depth for the milling machine," clarified Valmir Bonfim, Unifresa's director.

During the 2010 edition, Unifresa employed micro fine milling on the route to solve problems identified just hours before the GP. "Last year, the classifying training sessions were cancelled due to lack of the Portland cement's adherence on the sambódromo straightaway. We eliminated those irregularities in record time. The work for 2011 focused on the asphalt concrete track, which generated the most driver complaints during the last race," stated Bonfim.

Industry meets at M&T Parts and Services 2011

Ciber showed its broad **structure set up** to provide **solutions** in support of **services** and **products** for its **customers**

M&T Parts and Services is the only trade show of its kind in Latin America and its first edition was held from August 10 to 13 in São Paulo (Brazil). Always present in the editions of M&T, Ciber was also present at M&T Parts and Services putting on display the portfolio of its entire structure—from additional support and services to training and availability of original parts.

Hundreds of visitors circulated through its booth during the four-day event. It was a moment to reaffirm the company's position to always offer complete solutions to its customers. The concern shown with customer service introduced at the trade show is what drives Ciber. Also announced at the Trade Show was the campaign recently launched for reviewing the items of the Hamm compactors line in order to facilitate the access of the customer public to the service for each operational cycle of the equipment. Adriano Correia, Ciber's product support manager, points out

Correia: Ciber reaffirms its wide range of solutions offered to customers

that the boom in the building sector paved the way for a refurbishing market before limited to large investments. "Customers are increasingly more demanding, requiring a high standard of technical support. This is explained by the significant increase in the number of machines in recent years," he points out.

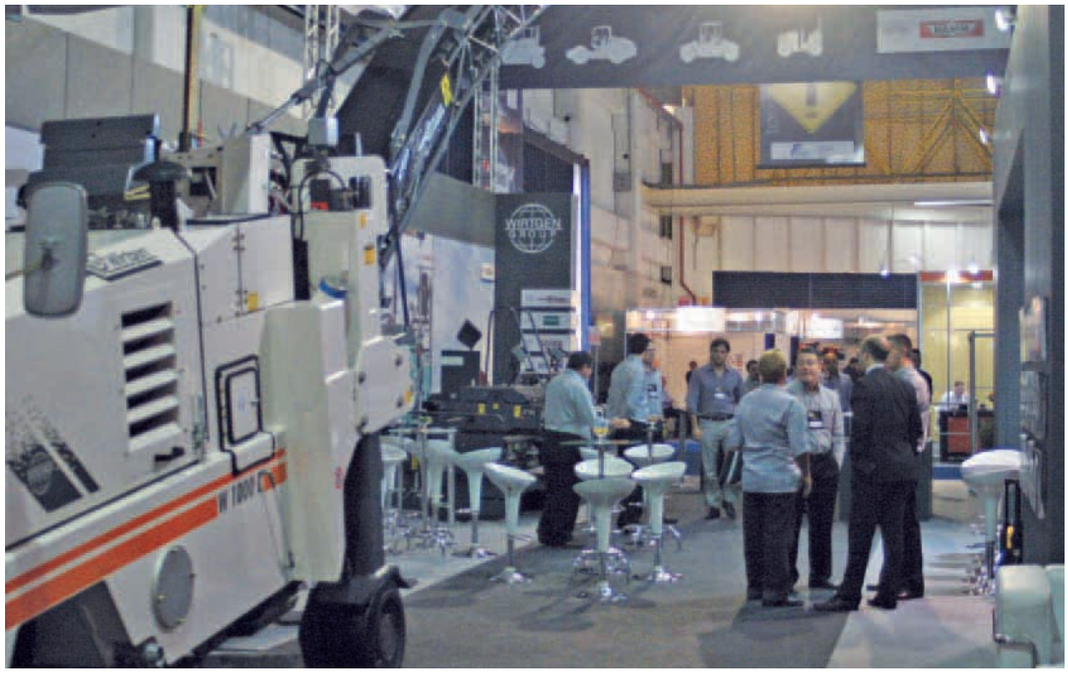
Ciber presented the advantages of the Wirtgen Group services

New model of pleated bags with exclusive filtering technology

During the event, Ciber presented the new model of pleated bags to be used in asphalt plants, which is a unique technology that increases the filtering area with the same amount of filtering elements. The benefits of this technology are increased productivity, maximum efficiency in dust retention, and better performance of the burner with consequent fuel savings. At Ciber/Wirtgen Group's booth, the visitors also had access to the manual on Filtering Systems. This is a new material with detailed descriptions and operating guidelines that help you get the most out of technology in terms of cost/benefit, higher productivity, and lower maintenance costs. The main advantage of this filtering system is the emission of approximately 10 times less than the limit set by well-known environmental agencies (maximum permitted: 50 mg/m^3, Ciber Asphalt Plants: 5.7 mg/m^3).

Ciber takes new developments to 2011 Brasil Road Expo

The southern Brazilian company presented the **Kleemann line** and unique models like the **Hamm 3307 compactor** and the **AF 5000 Plus Paver**'s new compacting screed



Ciber made its presence known at the 2011 Brasil Road Expo. The company, headquartered in the city of Porto Alegre, took Wirtgen Group products to the trade show, as well as different solutions for carrying out projects with the highest possible quality standards. The event, held April 4-6, gathered national and international big players, generating business for the production chain of the paving and road and highway infrastructure segments. At the exhibition grounds of Expo Center Norte, in the city of São Paulo, nearly 10,000 people visited to learn about the trends and latest market developments.

Ciber introduced the Kleemann brand, which recently entered the Brazilian market, and unique models like the Hamm 3307 compacter and the new compacting screed of the AF 5000 Plus Paver – fully hydraulic and with the capacity to reach a width of 5,000 mm, doing away with the need for mechanical extensions. Also displayed were the Hamm line HDO 90 V roller and a W 1000L milling machine. During the three days of the trade show, the 200 m² stand saw more than 1,000 visitors, proving the success of the initiative that provided an opportunity for Ciber to strengthen its relationship with clients from different regions and countries.

Clauci Mortari (Ciber), David Barbosa (Meta Engenharia member), Luiz Marcelo Tegon (Ciber), Fernando Caldeira (Meta Engenharia member) and Rodrigo Rodrigues Pereira (regional manager Wirtgen Brasil)

Instituto Pavimentar relies on Ciber support

Last year, the **program trained** over **320 asphalt paving** sector **professionals** in different **Brazilian cities**

Brazil is facing a so-called "blackout" of skilled professionals. This situation has influenced decisions by companies in the industrial segment to encourage training initiatives. Because it believes that service and product excellence is tied to well-prepared staff members, Ciber supports Instituto Pavimentar. Last year alone, the institution trained approximately 320 Brazilians to work in the asphalt paving sector, with a total of eight courses in the cities of Cuiabá (MT), Belo Horizonte (MG), Fortaleza (CE), Salvador (BA), Rio de Janeiro (RJ), São Paulo (SP), Curitiba (PR) and Porto Alegre (RS).

New groups are planned for the second half of 2011. According to Ciber's engineering manager, Bernardo Ronchetti, Pavimentar was especially created to bring professionals up to date and train those in search of the technical and practical knowledge they need to be hired in the job market. "This year, the moderating entity will be Senac. Ciber will continue actively participating in promotion and organization of the courses," observed Ronchetti, who also serves as vice-chairman of the Road Machinery Sectorial Chamber of the Brazilian Association of Machine & Equipment Manufacturers (Abimaq).

The program is the result of a partnership between the National Association of Highway Construction Companies (Aneor), Petrobras, the National Department of Transportation Infrastructure (Dnit) and the Brazilian Association of Asphalt Distribution Companies (Abeda). Technical and institutional support is provided by Ciber and Abimaq.

Engineer Marcelo Zubaran with participants of the Porto Alegre training

Courses provide technical professionalization

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