RoadNews for new roads

The WIRTGEN GROUP User Magazine // № 03

WIRTGEN VÖGELE HAMM KLEEMANN BENNINGHOVEN CIBER

A new era in asphalt plants:

iNOVA Series performing around the world

Contents

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Dear Customers,

High transport mobility, fast commissioning, high production performance, savings in fuel and easy and intuitive operation: the CIBER iNOVA Series is already marking its presence in the market. In this RoadNews edition, you can read up on two field applications with the iNOVA Series, one in Argentina and one in Brazil. In Matelândia, in Brazil, an iNOVA 1500 with a production capacity of up to 150t/h is operating in the construction of highway BR 277. Construction professionals in the neighbouring country, Argentina, who are currently working on a major construction project based on a federal government concession, are also impressed with the iNova Series asphalt plant, and by its combination of excellent high-volume asphalt delivery and efficient consumption.

References such as this one highlight the fact that CIBER understand the needs of customers and users, elevating standards with innovative asphalt plants in the iNOVA Series. VÖGELE can also provide the right machine for all requirements: the new SUPER 1600 and SUPER 1603 pavers, for instance, deliver maximum profitability and robustness, while meeting the most demanding quality standards of the world market leader.

Indeed, all machines in the WIRTGEN GROUP stand out in this respect, operating economically and producing high quality results. There are several examples. In Mexico, a W 150 CF compact milling machine from WIRTGEN was able to mill over a 1.8m width aided by a new extension kit designed to accommodate the milling drum. In the USA, a company that recycles construction materials is excited with the new KLEEMANN MOBIREX impact crusher. The MR 110 Zi EVO2 has two times the productivity of the previous model. In other words, WIRTGEN GROUP technologies always deliver top results for your construction works.

We hope you enjoy reading this third edition of RoadNews.

Best wishes from
Your RoadNews Team

iNOVA 2000 and Vial Agro asphalt plants:

Paving safer, higher quality roads for all Argentinians

Argentina // Tres Arroyos

Created in 1964 in the city of Tres Arroyos, province of Buenos Aires, Vial Agro S.A. is a family business founded by the engineer Carlos Alberto Quantin which has since become a top name in development and construction in Argentina, both in the public and private domains. High-quality services based on latest-generation equipment and technical excellence are essential aspects at Vial Agro. For this reason, the company seeks the most advanced, cutting-edge options for implementing its construction works. Vial Agro currently use 3 asphalt plants from CIBER Equipamentos Rodoviários on their wide range of works throughout the country. They have an iNOVA 2000, an iNOVA 1200 and an iNOVA UACF 19 asphalt plant along with other WIRTGEN GROUP equipment: a 1m and a 2m WIRTGEN milling machine and compaction equipment from HAMM. They operate in the provinces of Buenos Aires, Córdoba, Santa Fé, La Pampa and Rio Negro. »»

State-of-the-art technology: the iNOVA 2000 asphalt plant delivers high quality on job sites in Argentina.

iNOVA 2000

Production capacity:

100 – 200t/h

Number of mobile units: 2

Options for the iNOVA series

Tetrafuel burner:	light oils, heavy oils, LPG and NG
Compressor extension:	compressor position displacement as required
Video cameras:	4
Remote monitoring system:	during production
Additional vibrator:	kit of 3 vibrators in bin number 2
Filler dosing bin:	2m³
Fine dosing bin:	4m³
Fibre dosing bin:	2m³
Recycling system:	15% RAP in the mixer
Asphalt flow meter:	open- and closed-circuit operation
Fuel flow meter:	open-circuit operation

iNOVA 2000 asphalt plant

According to Vice President Gabriel Carlos Quantin, the brand and products were selected because equipment made in Brazil best caters to the needs of the company. The iNOVA 2000 asphalt plant is currently mixing asphalt for a road concession and was chosen due to its high production capacity. “We select the model for works with specific production requirements.” At present, the iNOVA 2000 asphalt plant is about to be installed for a new project which was part of a tender for a concession from the Argentinian federal government with works predicted for the end of the year. The plant will be located in Azul, a city in the province of Buenos Aires, 350km from the capital, Buenos Aires.

Ease of transport and installation

Since the tender is to be awarded by the federal government, a consortium of three companies was formed to subcontract the companies that will participate. "We don't know yet how the tasks will be divided among the companies nor what our own company will be responsible for, but we know there will be high-volume asphalt concrete production," explains the vice president of Vial Agro. Gabriel Quantin considers the fast installation of the iNOVA 2000 plant to be one of its main advantages, since it can be put into operation with a low requirement of man-hours. Mobility in the assembly and disassembly process and the low costs are major advantages of the iNOVA 2000, as highlighted by the vice president: "For transportation, you only need to couple it to lorries or tractors and move it. You do not need the support of cranes or trailers in this process. In Argentina, we only need a road permit and this can be obtained in about ten days here." As a mobile plant, the model is hallmarked by easy transportation and installation. Gabriel Quantin has found that the plant's asphalt mix production capacity matches the manufacturer's claims: "All the attributes promised to us have been delivered in real life situations. The plant bears out every statement made by CIBER Equipamentos Rodoviários on how much the plant will produce in tonnes per hour. It is all totally correct and accurate." Another aspect that goes down well with Vial Agro is the low to moderate fuel consumption by the plant and mixer. Equipment safety is evaluated as standard and the production cost of asphalt mix is within the expectations of the company's vice president.

iNOVA 1200 and UACF 19 plants

Vial Agro additionally have an iNOVA 1200 plant, which has been working on a recently completed construction project involving the production of 120,000t of asphalt in 18 months. The company also works with the iNOVA UACF 19 plant, which is currently producing asphalt concrete for a highway project that will require the production of 100,000t in three years. The locations of the two plants are some 500km apart. The first plant is producing an asphalt mix based on modified AM3 asphalt while the other is producing mix based on ordinary CA30 asphalt. The vice president is highly satisfied with the output of both plants and highlights the great benefit of the equipment on the job site: "The equipment is exceedingly reliable for this type of work." All the works being carried out by Vial Agro are having a huge impact on mobility in the country, testifying to the strong commitment to social responsibility and environmental concerns of this leading ISO 9001-certified company (IRAM quality management certification [Instituto Argentino de Normalización y Certificación], IQNET certification and certified management system). ///

iNOVA 1500 asphalt plant in an important construction project in western Paraná:

CIBER power for Highway BR 277

iNOVA 1500

Production capacity:

75–150t/h

Number of mobile units: 1

Brazil // Guarapuava

Acquired by ITAX, the iNOVA 1500 asphalt plant will play a part in the project on Highway BR 277, producing 150t/h of asphalt. Pavimentação e Terraplanagem Schmitt ltda., known as ITAX and headquartered in Guarapuava, is located in the central southern region of Paraná, between the cities of Curitiba and Foz do Iguaçu, in the vicinity of the BR 277, the main highway of Mercosur, which connects the Port of Paranaguá to Paraguay and Argentina. The company, which also has units in Cascavel, Matelândia and Laranjeiras do Sul in the state of Paraná, operates crushing and asphalt plants and services the gravel and heavy-duty construction markets in the central western and western regions of the state. According to Director of ITAX Anderson Schmitt, CIBER Equipamentos Rodoviários was chosen as the supplier because they manufacture a plant that fully meets his company's needs: the iNOVA 1500 plant, "a compact plant with excellent production and simple operation". Since the start of 2018, the plant has been operating in the city of Matelândia, fulfilling a BRL 25,000,000.00 contract for the toll concessionaire and implementing works in the western region of the state. The iNOVA 1500 model is producing an average of 150t/h for works in the city of Matelândia, on the section of Highway BR 277 between Céu Azul and Foz do Iguaçu and in nearby cities. "120,000t of asphalt mix will be processed in this plant in 2018. This is equivalent to 102km of lane track plus shoulder," Anderson explains. »»

iNOVA 1500 delivers quality just in time

Lane patching works will be carried out, as well as shoulder levelling and pavement rehabilitation, all using high-viscosity asphalt rubber with Grade B HMAC – 112/2009 DNIT (National Department of Transport Infrastructure); Grade B Binder – 112/2009 DNIT and Grade 4 HMA – DER/SP (Department of Roadways/State of São Paulo). The iNOVA 1500 plant will help to ensure that the schedule is complied with, that the mix is homogenized and that the specification parameters are met. The director of ITAX also highlights the importance of the project in increasing safety and comfort for users of one of the main import routes from Paraguay.

An average mixing capacity of 150t/h: the iNOVA 1500 is producing the mix that will be paved on a section of Highway BR 277.

ITAX relies on further equipment from the WIRTGEN GROUP

Apart from its iNOVA 1500 asphalt plant, ITAX also have 2 WIRTGEN W 1000 milling machines, 2 CIBER pavers and 5 HAMM rollers. Anderson Schmitt praises the excellence of the milling machines from CIBER Equipamentos Rodoviários and expresses his appreciation of the WIRTGEN GROUP's focus on customers: "I congratulate the WIRTGEN GROUP on the responsibility they show towards customers, testing products under the most demanding conditions (iNOVA plants) and correcting operating details prior to market launch. Congratulations on your concern for the sector and your customers". ///

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The iNOVA 1500 is a compact plant with excellent production and simple operation.

Anderson Schmitt, Director
ITAX

”

Robust technology, high cost-efficiency

Highlight 1:
100% VÖGELE quality

The uncompromising design and workmanship reflect the high standards of VÖGELE in every respect.

Highlight 2:
Easy-to-learn ErgoBasic operating concept

The particularly easy-to-learn and comprehensible VÖGELE operating concept sets standards.

The new SUPER 1600 tracked paver and SUPER 1603 wheeled paver mark the launch of a new generation of VÖGELE pavers: machines that stand for uncompromising quality and offer particularly good value for money.

In addition to the SUPER 1600 with crawler tracks, VÖGELE also offer the wheeled SUPER 1603. The AB 480 TV Extending Screed is also new and supports pave widths of up to 4.8m or up to 6.3m with bolt-on extensions.

Highlight 3: Cost-efficiency and robustness

These machines boast outstanding value for money in terms of both the investment and the total costs of ownership.

Uncompromising VÖGELE quality

The uncompromising design and workmanship of the new SUPER 1600 and SUPER 1603 pavers reflect the high standards of VÖGELE in every respect. This is above all evidenced by a wide array of components which are identical to those found on the SUPER pavers in VÖGELE's advanced "Dash 3" generation. These include the traction drives in closed loops, enabling positive tracking, precise steering and excellent manœuvrability.

The chassis, material handling system and augers are also the same as those found in VÖGELE's cutting-edge "Dash 3" pavers. The global market leader is thus laying the foundations for the high paving quality that customers and users around the world associate with SUPER pavers.

SUPER 1600: Precision on tracks

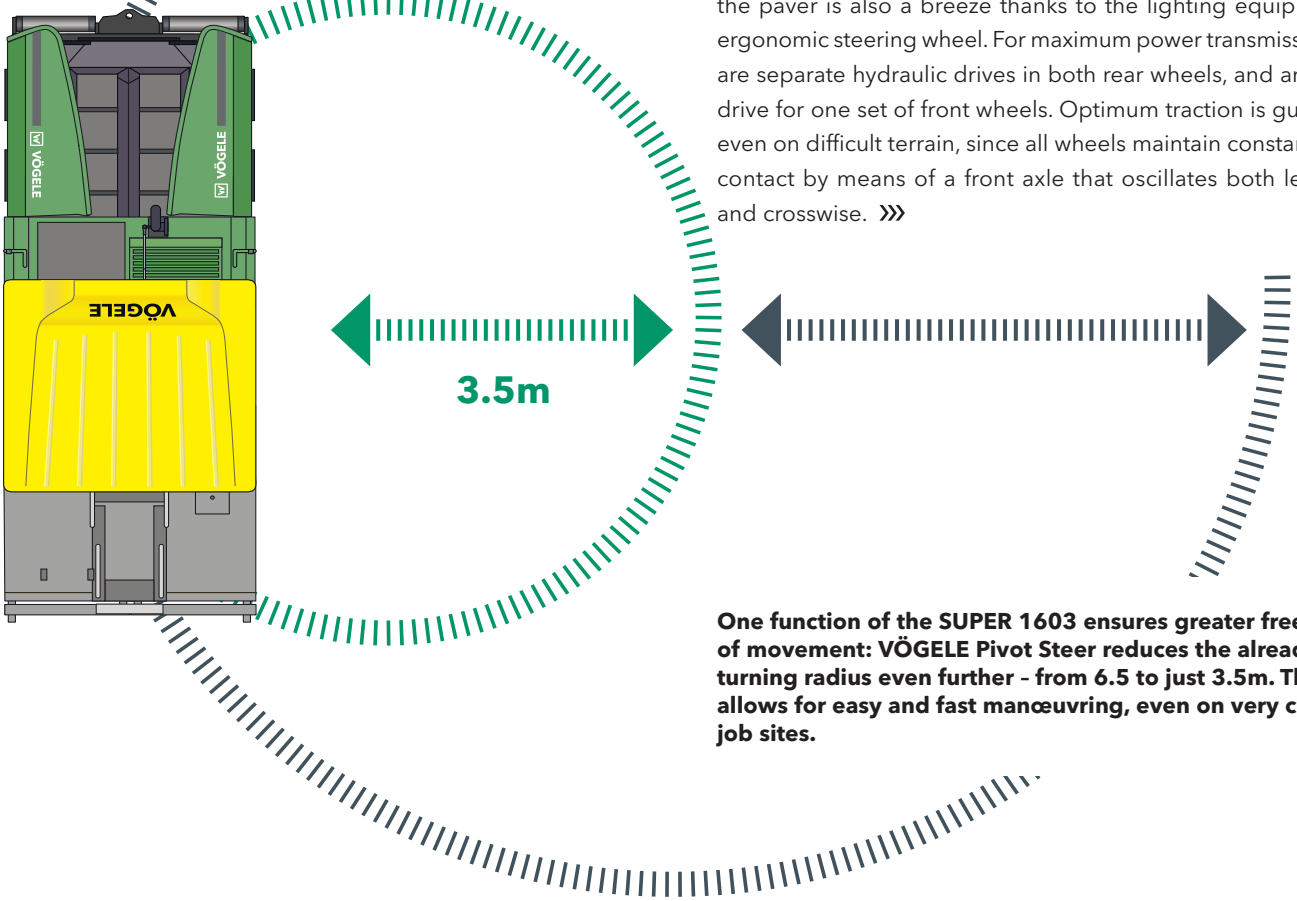
If high traction is called for, there is no beating VÖGELE's crawler tracks. Their large footprint ensures this, guaranteeing a constant operating speed even on difficult terrain. The key components of the popular drive concept are high-quality separate hydraulic drives, which enable the SUPER 1600 to deliver its great power to the road economically. To maximize efficiency, the hydraulic system for the traction drive operates in a closed circuit and the drives are integrated directly into the sprockets so that engine output is translated into pave speed with no loss of power.

Positive tracking when moving straight and accurate cornering: the separate drives and electronic control provided for each crawler track deliver the operating speed on the SUPER 1600.

High manœuvrability and mobility under its own power: the wheeled undercarriage is a winner thanks to its small turning radius and fast speed of up to 20km/h on the road.

SUPER 1603: Mobility on wheels

The ability to travel from one job site to the next under its own power at up to 20km/h – this is one of the key attributes of the VÖGELE wheeled paver. In the "Job Site" and "Positioning" modes, all paving functions are automatically switched off. Manœuvring the paver is also a breeze thanks to the lighting equipment and ergonomic steering wheel. For maximum power transmission, there are separate hydraulic drives in both rear wheels, and an optional drive for one set of front wheels. Optimum traction is guaranteed, even on difficult terrain, since all wheels maintain constant ground contact by means of a front axle that oscillates both lengthwise and crosswise. »»



One function of the SUPER 1603 ensures greater freedom of movement: VÖGELE Pivot Steer reduces the already small turning radius even further – from 6.5 to just 3.5m. This allows for easy and fast manœuvring, even on very confined job sites.

A firm grip on day-to-day operations – With the ErgoBasic operating concept

The best technology can only be of use if it is easy to understand and simple to operate. That's the conviction behind ErgoBasic. The operating concept was developed by VÖGELE on the basis of the proven ErgoPlus operating system of the "Dash 3" pavers and specially tailored to the needs and requirements of the users of SUPER 1600 and SUPER 1603 pavers. The aim was to enable the SUPER 1600 and SUPER 1603 pavers to be operated just as quickly, accurately and intuitively as the "Dash 3" machines. The core components of ErgoBasic are the paver operator's and the screed operator's consoles. But ErgoBasic offers more besides: a remote control unit for operating VÖGELE's Niveltronic Basic System for Automated Grade and Slope Control, and an ergonomic operator's platform that meets high standards in terms of comfort and safety.

The paver operator's ErgoBasic console

There is nothing quite like order and clarity for speeding up operations. That's why the paver and screed functions are arranged in a practical and logical layout that has clearly been inspired by the ErgoPlus 3 console. For instance, the type of buttons and symbols used are all in line with those on a paver operator's ErgoPlus 3 console, but have been tailored for the use of the two new pavers. LED lights show the status of all settings directly alongside the respective functions, while further LEDs display the set speed of the augers and compacting systems along with the filling level of the diesel tank. »»

ErgoBasic

ErgoBasic remote control units – For screed and for grade and slope control

Clear operation is critical to quality – and the safe handling of all screed functions is vital for laying high-quality paving. The ErgoBasic remote control unit for the screed lives up to these requirements in full. Designed for robustness, the keypad is laid out logically in line with the functional processes. To accompany the ErgoBasic operating concept, VÖGELE have also developed the Niveltronic Basic System for Automated Grade and Slope Control, which is controlled via a separate compact remote control unit for each side of the screed. These units are easily removed from their magnetic brackets, giving the operator a large range of action so that he can always take up the optimum position for every paving job.

ErgoBasic was developed on the basis of the advanced ErgoPlus operating concept. That makes VÖGELE the only manufacturer to offer a standardized operating concept for all paver classes.

Robust technology, economical paving

Great power, efficiently organized – the modern VÖGELE drive concept is perfectly adapted to the diverse application range of the Universal Class paver. It delivers an output of 116kW at 2,000rpm. The intelligent engine management includes an ECO mode that makes for particularly quiet and economical operation. When operating in this mode, the engine delivers an output of 106kW at 1,700rpm, which suffices for most applications. A large cooler assembly ensures that the power unit always delivers its full output. As a result, the machine can be operated without difficulty in all climatic regions around the world. The splitter gearbox also contributes to efficiency: it supplies all hydraulic consumers directly with hydraulic oil. The hydraulic pumps and valves are centrally located, making them easily accessible for servicing. Even the powerful generator for the electric screed heating is directly flange-mounted to the splitter gearbox, and thus fully maintenance-free.

Uncompromisingly high quality: the SUPER 1600 and SUPER 1603 pavers have the same sophisticated drive technology and material management as the "Dash 3" pavers.

For uncompromising paving quality: Perfect material management

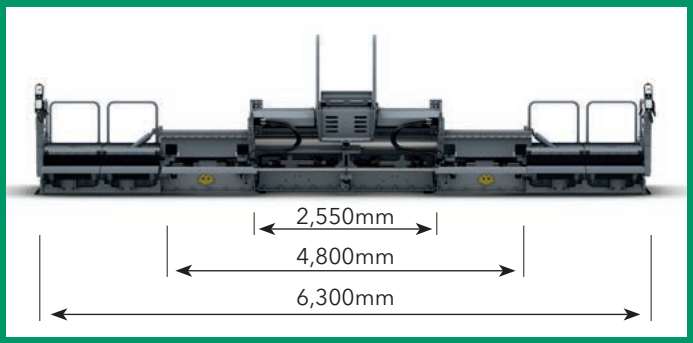
When it comes to paving quality, perfectly organized material management is a vital factor. So it goes without saying that VÖGELE never compromise on this point. That much is evident just from the material hopper. As with all VÖGELE pavers, supplying the SUPER 1600 and SUPER 1603 with mix is an extremely clean, safe and swift process. To that end, the pavers feature wide hopper sides and sturdy rubber baffles are fitted to the hopper front; what is more, the hopper is designed to hold up to 13t of material. This means that there is no difficult tiding over difficult situations – such as when paving under bridges. Proportional control and continuous monitoring provided for conveyors and augers guarantee a constant head of mix in front of the screed in line with requirements. The auger blades have a large diameter (400mm), supporting paving at greater widths of up to 6.3m and laydown rates of up to 600t/h. ///

Highlights of the new Universal Class SUPER 1600 and SUPER 1603 pavers

- Maximum pave width of 6.3m allows for a wide range of paving applications
- Maximum laydown rate up to 600t/h
- Transport width 2.55m
- Weight 17.6t (SUPER 1600) or 17t (SUPER 1603)
- Simple operation with the innovative and easy-to-grasp ErgoBasic operating concept
- Powerful Cummins diesel engine of the latest generation, with a rated output of 116kW and ECO mode
- Professional material management guarantees paving quality
- High precompaction with the AB 480 TV Extending Screed with tamper and vibrators

Developed for the new Universal Class pavers: The AB 480 TV Extending Screed

VÖGELE have developed a screed that is perfectly tailored to Universal Class pavers such as the SUPER 1600 and SUPER 1603. The AB 480 TV Extending Screed is optimally stabilized thanks to an amply dimensioned single-tube telescoping system for infinite hydraulic adjustment of the pave width. The "TV" suffix refers to the compacting systems Tamper (T) and Vibrators (V), which achieve an impressive degree of precompaction. The critical advantages lie in the paving quality: the number of roller passes can be reduced, and roller errors avoided. A further advantage lies in the electric screed heating. With this system, paving teams do not need to carry gas bottles. Moreover, the screed plate and all other parts that come into contact with mix are heated up quickly, in a process initiated at the press of a button.



The tool on the new SUPER 1600 and SUPER 1603 pavers: the AB 480 TV Extending Screed with tamper and vibrators can be continuously extended from its basic width of 2.55m to 4.8m or, with bolt-on extensions (2 x 0.75m) to a maximum width of 6.3m.

New VÖGELE Big MultiPlex Ski:

Perfect evenness – Speedy installation

Transporting and installing the Big MultiPlex Ski are now simpler tasks than ever before – and connecting the new sensors is an even faster process.

Users have already put VÖGELE's new Big MultiPlex Ski through its paces. For instance, when Faber Bau GmbH carried out a rehabilitation project on the B9 federal highway.

Extensive range of sensors for maximum evenness

From narrow radii when constructing roundabouts to long straights on long-distance roads – the requirements on sensors for grade and slope control can vary enormously, depending on the particular job. VÖGELE are responding with a comprehensive range of sensors encompassing various mechanical and sonic sensors and the Big MultiPlex Ski sensor system. By these means, VÖGELE are ensuring maximum evenness and surface accuracy in operation. These two factors have a key impact on asphalt paving quality.

New version of the Big MultiPlex Ski: Easy installation in seven minutes

The Big MultiPlex Ski from VÖGELE is a sensor system that is used frequently around the world. It is intended for jobs where absolute evenness in the longitudinal direction is essential. Now VÖGELE's engineers have completely revamped the Big MultiPlex Ski. They focused on simplifying assembly, handling and transport, so that one person can now install it completely in just seven minutes. That's thanks especially to the newly developed clamping fasteners, which allow completely tool-less attachment. To ensure that all parts are to hand at all times and are transported safely, the new Big MultiPlex Ski comes with a convenient transport box. »»

Technology in a neat package: the practical new transport box ensures that all parts of the Big MultiPlex Ski make it to the job site unscathed.

Ideal for levelling extended irregularities: The Big MultiPlex Ski

The completely revised Big MultiPlex Ski sensor system operates as standard with three multi-cell sonic sensors fitted to a beam which is 5 to 13m long. Up to five sensors can be connected to it, depending on the application. VÖGELE's Niveltronic Plus System for Automated Grade and Slope Control calculates a mean from the values picked up across the entire measuring range, making up for any irregularities even over long distances.

Easy installation in seven minutes plus a host of additional advantages: watch the video on the quick installation of the new Big MultiPlex Ski at www.voegele.info/big-multiplex-ski

The new Big MultiPlex Ski is easy to transport and quick to install – simply fantastic.

Michael Wenz, Paver Operator
Faber Bau GmbH

Ergonomic mount system accelerates start-up

It is not only the Big MultiPlex Ski that has the new clamping fasteners: the brackets for individual sensors also feature this system. This means that all sensors of the new generation – whether in the mechanical version as a ski or the non-contacting sonic sensors – can now be attached quickly and easily to the side plate of the SUPER pavers without the need for tools.

Sensors of the new generation incorporate practical innovations

The new sensors also incorporate some improvements to make work easier for users. This begins when setting up the sensors. A positioning aid in the form of an LED strip on the sensor indicates the sensor's distance from the reference: if the two middle LEDs light up, the correct position has been reached. Connection to the VÖGELE Niveltronic Plus and Niveltronic Basic Systems for Automated Grade and Slope Control is easy and follows the "plug & play" principle on the screed operator's console. This is where all adjustments for grade and slope control are made – with just a few presses of a button. This highlights a key advantage: the sensor technology comes from the same source as the machine technology, so they are perfectly coordinated.

LED crosses ensure clarity

During paving, two further highlights of the new sensors ensure that the screed operators can fully focus on the paving job: the LED displays attached to the sensor, known as LED crosses, provide continual information on whether the specified and actual values match – and if the light conditions are poor, or during the night, a powerful LED also integrated in the sensor supports the screed operator by illuminating the reference to be scanned very brightly.

Improvements deliver with high practical relevance

All in all, the new version of the Big MultiPlex Ski sensor system and the sensors of the new generation demonstrate once again that the global market leader consistently tailors its technology to the requirements of customers and especially of users: from transport and installation to paving, VÖGELE have integrated innovations that make all the difference in everyday job site operations. »»

Just seven minutes for one person: Fast and simple installation

Use the new bracket system to attach and set up the new Big MultiPlex Ski even more quickly and conveniently. One person can complete the entire installation in just seven minutes by following seven simple steps – using no tools at all. What is more, VÖGELE supply the Big MultiPlex Ski in a rigid transport box so that all parts are accessible at any time and can be stowed and transported safely. ///

7 steps in 7 min

1

Fit the two brackets to the screed arm

2

Attach the swivelling arms

3

Fix the central beam in position

utes

7

Route cables and connect sensors

6

Attach the sensors

5

Fit the sensor bracket

4

Suspend the extension beam

Soil stabilization has the

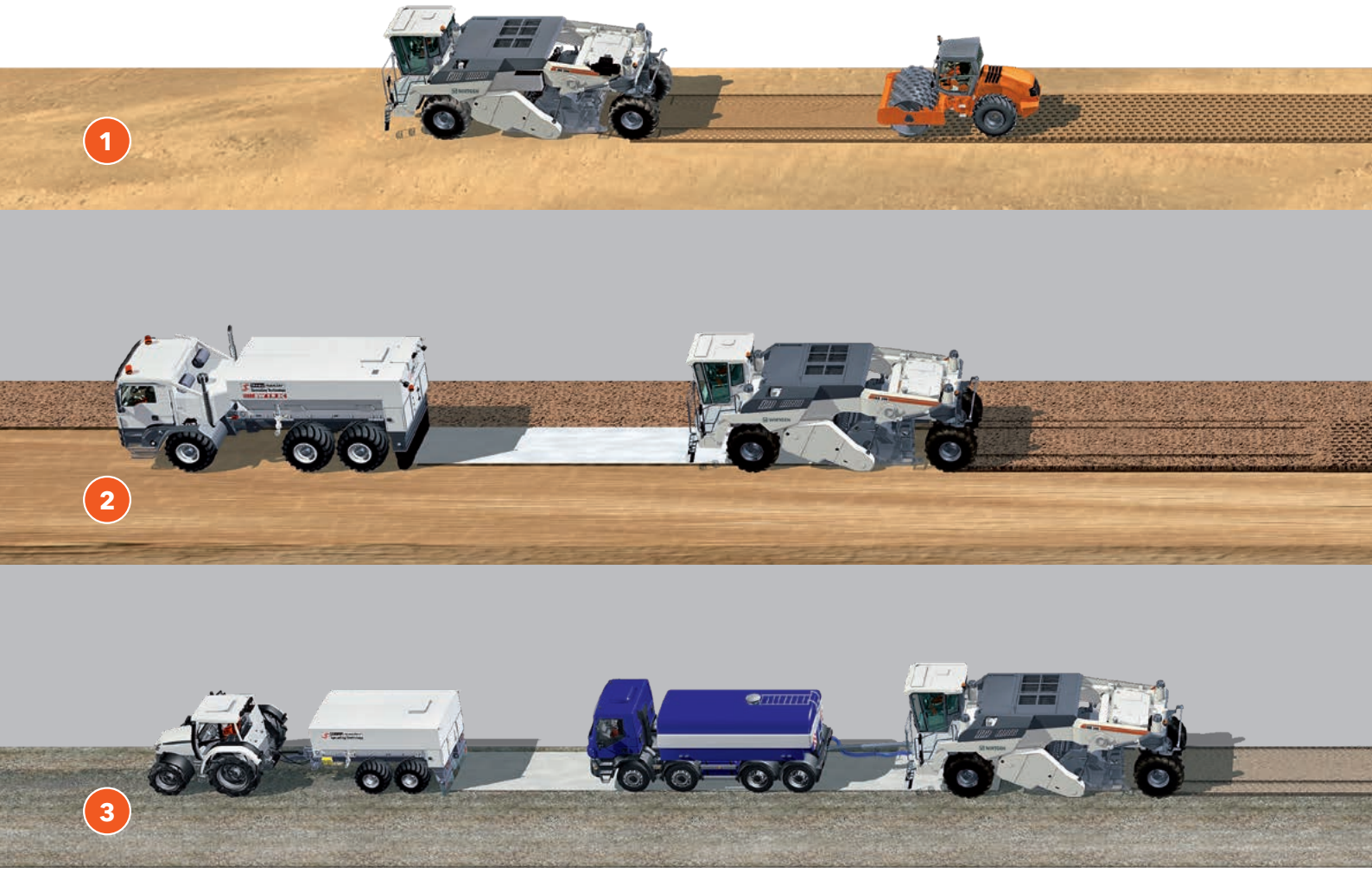
Soil stabilization is proving to be the optimum solution whenever the properties of soil have to be altered to make it suitable for further roadworks. That was the case in Bloomington/Indiana, USA, for instance, where a WIRTGEN WR 250 soil stabilizer laid a load-bearing base for the construction of a new approach road to Interstate 69.

High load-bearing capacity for the approach road to Interstate 69: the WIRTGEN WR 250 delivered a top performance stabilizing soil in Indiana.

edge over soil exchange

Soil stabilization is the method of choice when it comes to ensuring the load-bearing capacity and quality of soil in preparation for road construction projects. The targeted addition of stabilizing agents can, for instance, help to reduce the moisture content of soil, which is vital for further roadworks. Compared to the process of exchanging the entire soil, soil stabilization is an economical and resource-saving method. Cost savings result from the simpler job-site logistics, for instance, with fewer lorry trips and shorter construction periods. Resources are also conserved, because all of the existing soil is used in the stabilization process with only stabilizing agents such as lime or cement being added – or a combination of both in the form of a mixed stabilizing agent. »»

WIRTGEN technology for soil stabilization: Versatility is key



1 Homogenization

In the homogenization process, the powerful milling and mixing rotor of the WIRTGEN soil stabilizer granulates the native soil without the addition of stabilizing agents and loosens it. While a grader profiles the homogeneous soil prepared this way, rollers for soil compaction take care of the compaction process.

2 Soil improvement with lime

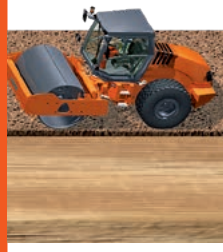
A machine train is generally required if the properties of the soil are to be lastingly improved. This begins with a binding agent spreader that deposits the stabilizing agent evenly, followed by a WIRTGEN soil stabilizer. The WR 250 uses its milling and mixing rotor to mix the soil homogeneously with the pre-spread lime. A pressurized scraper on the rear milling drum flap ensures that the treated material is smoothed evenly. While a grader profiles the soil mixture, rollers for soil compaction ensure optimum compaction.

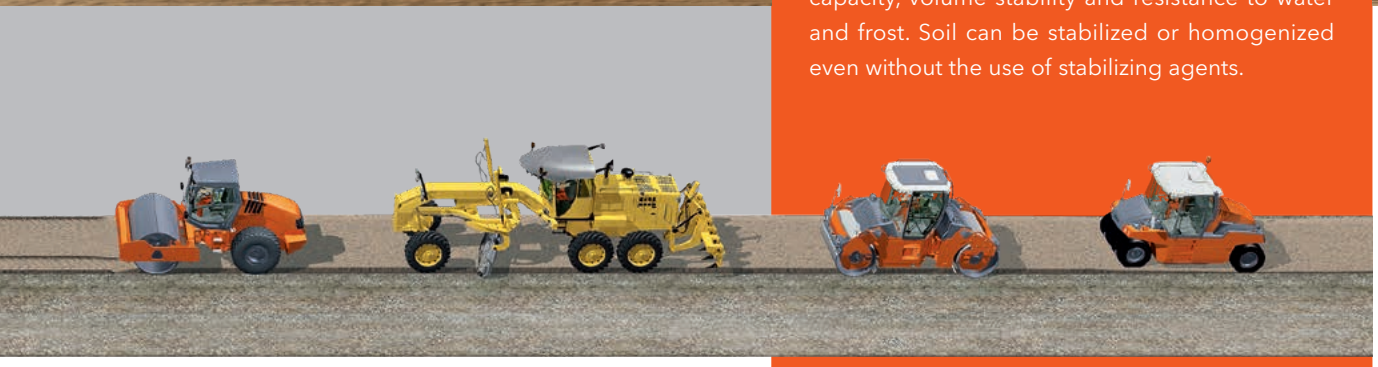
Many invitations to tender continue to specify that the soil is to be exchanged – but this is no longer a state-of-the-art method. The WIRTGEN soil stabilizer uses its powerful milling and mixing rotor to mix pre-spread stabilizing agents such as lime or cement into existing soil with insufficient bearing capacity, transforming it into a high-grade building material right on the spot.

The homogeneous mixture of soil and stabilizing agent that is produced offers a high load-bearing capacity as well as lasting resistance to water and frost, and volume stability. Typical applications include the construction of paths, roads, motorways, routes, parks and sports grounds, industrial estates, industrial plants, airfields, dams, backfilling and landfills.

Different applications: Improving soil, stabilizing soil

In soil stabilization, a distinction is made between improving the soil and stabilizing it. Lime improves the paving properties and compactability of wet, cohesive soil. This is known as soil improvement. If the aim is to stabilize the soil, cement is used because it lastingly enhances the load-bearing capacity, volume stability and resistance to water and frost. Soil can be stabilized or homogenized even without the use of stabilizing agents.





3 Soil stabilization with cement

Stabilization with cement creates water-bound base courses. The binding agent is laid by a towed spreader, which is followed by a water tanker. Behind it, the milling and mixing rotor of the WIRTGEN soil stabilizer mixes the soil with the pre-spread cement to form a homogeneous mass. At the same time, water is sprayed into the mixing chamber by means of an injection bar. Here, too, graders profile the treated material and rollers complete the job by ensuring optimum compaction. »»

Perfect stabilization: the powerful milling and mixing rotor of the WR 250 blends the pre-spread binder into a homogenous soil and stabilizing agent mix.

Case example: Soil stabilization in Bloomington/Indiana, USA

In the soil stabilization project on Interstate 69 south of Indianapolis, the newly embanked earth first had to be stabilized in order to create the necessary load-bearing capacity for the asphalt pavement of the new approach road. The contractor, Specialties Company, LLC, used lime as a stabilizing agent and took advantage of WIRTGEN's applications expertise. Lime immediately reduces the water content in the soil and binder mix. This ultimately improves compactability and increases the load-bearing capacity of the treated soil. "To achieve the optimum outcome, we always liaise closely with the applications professionals from WIRTGEN. They are always on hand to offer their consulting expertise," explains Jamie Cardiff, Equipment Manager at Specialties Company.

WIRTGEN WR 250 soil stabilizer required

When it came to choosing the machine, too, the Specialties Company's team put their trust in the innovative technologies from WIRTGEN, opting for the WR 250 wheeled soil stabilizer. The 571kW powerhouse also used, among other applications, in cold recycling for granulating asphalt, is the most powerful machine in the WR generation and specially designed for the stabilization of heavy and boggy terrain. With this machine, daily performances of up to 15,000m² are far from uncommon in soil stabilization applications. After the lime had been pre-spread, the high engine power and optimum traction of the WR 250 enabled it to effortlessly work

through the heavy and sometimes deep soil. The WR mixed the soil and binding agent homogeneously across the entire working width of 2.4m to a depth of exactly 30cm.

Strong performance, easy operation

"Operating the machine is child's play. The multifunctional joystick on the right armrest, for instance, gives me easy control of all the main basic functions," says Richard Clark, describing the high operating comfort. One of the challenges was the uneven condition of the earth, which varied from very firm to loose. "The milling speeds can be controlled from the operator's cabin, so our machine operators were able to respond directly to the frequent changes in soil conditions. This ensured a high mixing quality at all times," Cardiff adds. It took just five days to complete the stabilization work and lay the load-bearing base for the new approach road to Interstate 69. Lorries carrying material for paving the asphalt layers began to roll onto the job site only a short while later. ///

"The WR 250 is a real power pack and works extremely efficiently."

Jamie Cardiff, Equipment Manager
Specialties Company, LLC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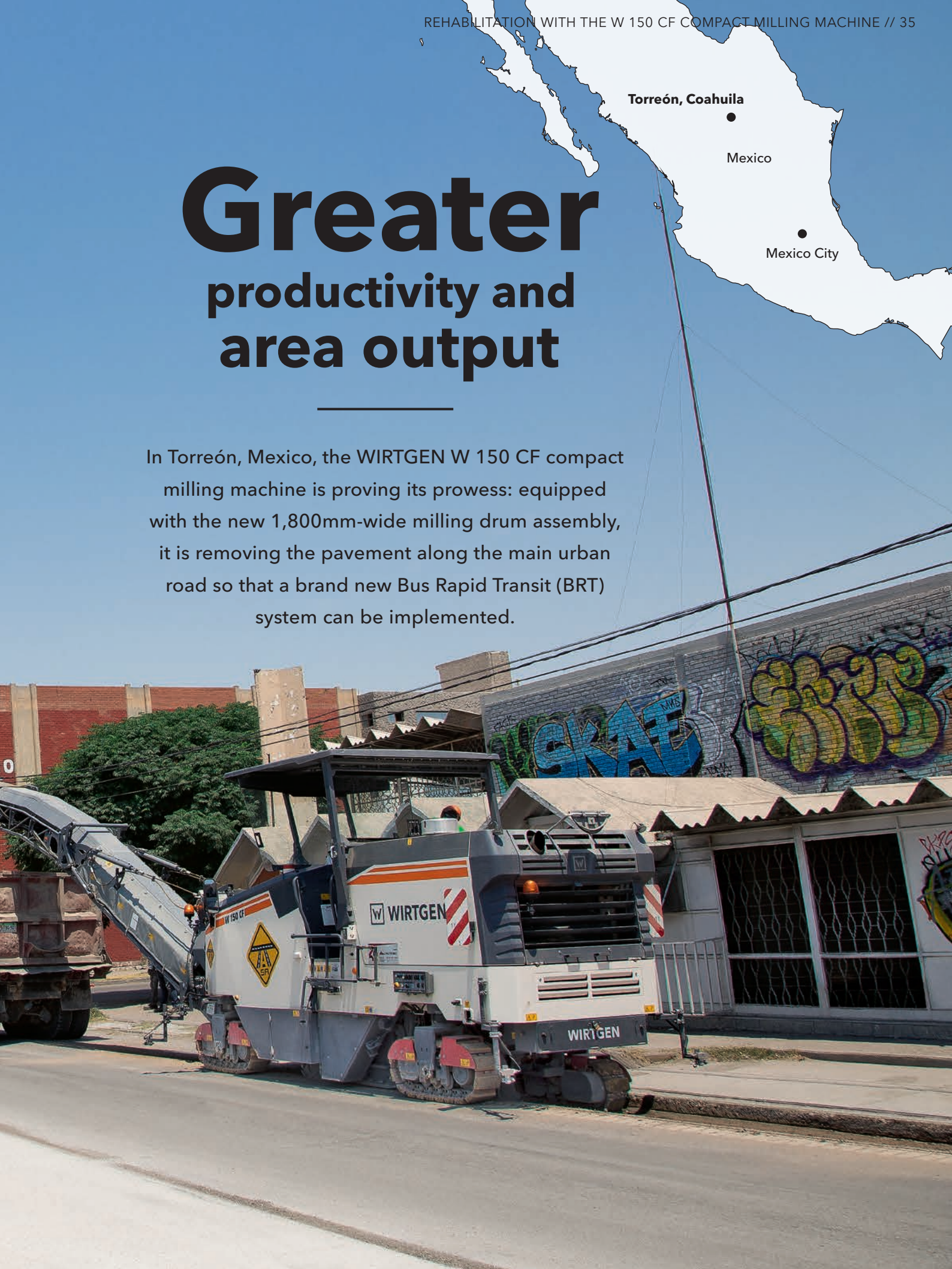
Greater
productivity and area output

In Torreón, Mexico, the WIRTGEN W 150 CF compact milling machine is proving its prowess: equipped with the new 1,800mm-wide milling drum assembly, it is removing the pavement along the main urban road so that a brand new Bus Rapid Transit (BRT) system can be implemented.



We rely on WIRTGEN cold milling machines.

Engineer Ruben Tinoco, proprietor (centre)

Triturados Asfálticos de Torreón S.A. de C.V.

Precise milling result prepares the ground for increased mobility

The project in one of Mexico's most important economic and industrial centres includes a new, exclusive hydraulic concrete BRT lane plus the rehabilitation of two adjacent asphalt lanes. The project will result in better mobility, increasing traffic safety for city residents. However, before it could build the new lanes, milling contractor TATSA (Triturados Asfálticos de Torreón S.A de C.V.) faced the challenge of milling off the entire pavement at a maximum depth of 25 to 30cm. The W 150 CF was capable of performing the milling work in one single pass, though TATSA sometimes milled off the pavement in two or three passes depending on the requirements of the respective stretch. "These roads are old and in the course of several years, they have been paved over many times without any milling work. In some areas, the pavement is even above the level of the footpath," explained engineer Gisela Gutiérrez, Production Coordinator at TATSA.

Flexibility pays off: with its high productivity, the WIRTGEN W 150 CF compact milling machine excels on large job sites – while its compact dimensions make it ideal for small construction projects with restricted space conditions.

Job site details

Milling off an entire road pavement along the main road in Torreón, Coahuila, Mexico

Total length:	24.3km
Length of inner-city section:	9.3km
Width of section:	12m
Area of section:	111,600m²

Working parameters

Milling depth:	25–30cm
Milling width:	1.8m

Equipment

WIRTGEN W 150 CF compact milling machine with 1,800mm milling drum assembly

W 150 CF meets project requirements

The entire project covers a length of 24.3km and includes 9.3km of inner-city lanes in Torreón and 15km of highway between Torreón and Matamoros. The tender stipulated a single milling machine that could work at various different locations in the city within the same day. To fulfil this specification and best meet the demands of a large-scale project in confined spaces, the contractor chose WIRTGEN's W 150 CF with an 1,800mm milling drum assembly. With the extended drum, the most powerful cold milling machine in the compact class can now be used even more flexibly and is ideal for surface course rehabilitation on medium to large job sites. Furthermore, the W 150 CF's optimized machine transport weight – despite its tremendous engine power – was a clear advantage. To maximize the cost-effectiveness of milling operations, cold milling machines need to be transported quickly from one job site to the next. The W 150 CF can be swiftly relocated on the job site or between contract work sections and has a travel speed of up to 7.5km/h. "Before participating in this tender, we talked to the applications experts from the WIRTGEN GROUP dealer Construmac and soon agreed that the W 150 CF would be the best solution for this job. The contracting authority agreed. After its arrival the machine immediately convinced us. In the meantime, we have ordered a new model for further projects in Mexico," says engineer Ruben Tinoco, proprietor of TATSA. »»


WIRTGEN
Milling width 1,800mm
(+ 300mm)
Milling depth
0-330mm
Tool spacing 18mm
Total width 2,500mm

Cost-efficient rehabilitation

Today, work on urban job sites must be completed much faster and more dynamically to minimize the impact on traffic, residents, workers and pedestrians. In Torreón, minimizing the disruption to traffic was therefore an essential goal. According to Tinoco, the plan is similar to those he has seen applied on job sites in Europe. "I spent a holiday in Finland. At 6 pm, a paving train composed of WIRTGEN GROUP machines arrived in front of my hotel in Helsinki. The next morning when I got up, all the equipment was gone and the road was perfectly paved. We want our jobs in Mexico to be carried out just as quickly and efficiently, with minimal impact on traffic and to a high quality."

Cutting-edge levelling system LEVEL PRO PLUS

To achieve optimum milling results, the W 150 CF offers state-of-the-art features. These include one of WIRTGEN's core technologies – levelling. When the surface course is removed, the LEVEL PRO PLUS levelling system continually compares the actual milling depth with the target milling depth. LEVEL PRO PLUS can work with a wide variety of sensors – cable, hydraulic cylinder, sonic and slope sensors or laser and sonic ski sensors as well as multiplex systems – and can be extended as required. 3D levelling is also possible thanks to integrated interfaces which are compatible with 3D systems from common manufacturers. In Torreón, TATSA used the multiplex system. With this system, three sensors on each side of the machine scan the height. The automatic levelling system factors all three measurements into its analysis so that the pre-set target milling depth is met exactly, while ensuring that any unevenness in the road surface is not copied. "Working with the WIRTGEN LEVEL PRO PLUS levelling system is intuitive and convenient; the result is an evenly milled, level surface. This is a crucial factor when it comes to paving the new surface courses and avoiding costly correction measures in the form of asphalt levelling courses," says engineer Liborio Frias Estrada, Coordinator for the BRT project in Torreón. And Ruben Tinoco adds: "Cold milling has a key impact on the quality of road rehabilitation. That's the reason why we rely on WIRTGEN cold milling machines." ///

The advantages at a glance:
Extended range of applications for the WIRTGEN W 150 CF / W 150 CFi

- To increase productivity and area output, the W 150 CF / W 150 CFi can be equipped with 1,800mm-wide milling drums by means of a housing extension
- Extension kits can be retrofitted on any W 150 CF / W 150 CFi
- The W 150 CF / W 150 CFi with a 1,800mm milling drum assembly is ideal for surface course rehabilitation work on medium to large job sites
- Easy loading of milled material even in difficult job-site situations thanks to extremely large conveyor slewing angles of 60° both to the left and to the right
- Quick job-site changes thanks to application-optimized machine transport weight and easy transportation
- Extremely high rated engine output

Stringline-free in Mobile

Producing kerbs as if by magic: in Mobile Bay on the Gulf of Mexico in the US state of Alabama, a WIRTGEN slipform paver SP 15i operated fully automatically.

For maximum flexibility: the WIRTGEN SP 15i supports tight radii from 0.5m.

USA // Mobile Bay

When a new residential area is developed, the individual contract work sections are often very detailed. Roads and paths have to be paved and access roads to the individual plots constructed. The various traffic areas are often separated by concrete structures such as kerbs. These can be either precast parts or monolithic profiles produced right on the job site by WIRTGEN inset/offset slipform pavers. The construction company Ammons & Blackmon Construction LLC decided to take the second option. The company's SP 15i has produced hundreds of running metres of kerbs in a newly-developed residential area in Mobile, located in Mobile Bay on the Gulf of Mexico – working in both tight and wide radii as well as different heights and widths. Cost-effective as this method is, one time-critical and quality-sensitive issue usually remains to be dealt with – tensioning stringlines. The new-build project in Alabama shows that this job can also be dispensed with, since in this case, an SP 15i produced all kerbs fully automatically.

SP 15i is compatible with common 3D control systems

As is often the norm in many new-build projects, a 3D digital terrain model was available at the Mobile job site. The great advantage of the SP 15i: thanks to its certified standard interface, the concrete paver can also be equipped with 3D systems of other leading suppliers alongside AutoPilot, WIRTGEN's 3D control system. The data are transmitted to the machine via a 3D interface, and various systems such as the RTK GNSS receiver or automatic total stations are employed during paving. The sensors mounted on the machine permit precise measurement while the machine is in operation. These systems constantly check that the specified and actual values of the paving parameters correspond. If no 3D digital terrain model is available for a project, users can also enlist the aid of WIRTGEN's AutoPilot Field Rover and create a new digital data model directly on the job site. »»

Dispensing with stringlines also simplifies material supply

When working in the small town of Mobile, the paving team of Ammons & Blackmon Construction LLC had to switch between different work sections several times in every work shift. It was therefore obvious that dispensing with time-consuming surveying, tensioning and checking of stringlines would greatly increase the profitability of the project. The supply of material is a much simpler affair, too, as lorries can quickly reach the SP 15i and drivers do not have to be on the lookout for tensioned stringlines. An additional feature of the slipform paver itself also supported particularly speedy progress – the trimmer. This unit levels the base to ensure optimum paving. The trimmer drum design is based on WIRTGEN milling technology, one of the company's core competencies. The telescoping trimmer with its helically positioned point-attack cutting tools guarantees uniform profile paving – in a single pass.

Inset/offset slipform paver demonstrates its extreme versatility

The project in Alabama also testified to the wide range of monolithic profiles that the SP 15i can produce with its many standard and special profiles for offset paving. In Mobile, alongside the conventional kerbs, the to-do list included a number of contract work sections that are typical for the United States – including kerbs with integrated gutters, flat gutters between private driveways and public roads that can be driven over as well as complete footpaths. The slipform paver placed the concrete with a width of 0.3–1.8m and a height of 15–30cm. ///

WIRTGEN technologies enabled us to produce the concrete profiles even more quickly and precisely.

Chad Ammons, Project Manager
Ammons & Blackmon Construction LLC

Further development: The WIRTGEN AutoPilot 2.0

The 3D control system comprises a computer integrated into the paver and a tablet attached to the Field Rover survey pole. Two GPS receivers mounted on the machine communicate with a GPS reference station at the job site.

Greater paving precision at lower costs: now further advanced by WIRTGEN, AutoPilot 2.0 can be used with the SP 15i and SP 25i models to create all manner of offset and inset profiles with even greater efficiency and precision. To this purpose, the 3D system either uses a previously created data model or a new digital data model is produced on the job site – a simple task with the Field Rover survey pole. The AutoPilot 2.0 software automatically checks the imported or newly-created data for any kinks affecting the steering and grade control. The user can correct unwanted kinks in the model data directly on the tablet with the aid of graphic editors.

Comprehensive checks are run when importing external data models to ensure that the best possible paving quality is achieved.

Each object can be directly controlled with the Field Rover. Water inlets, hydrants etc. can then be examined to ensure that they are correct.

Errors can be corrected immediately by rounding the kinks using graphic editors.


HAMM
HD+110
OSCILLATION
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HAMM

State-of-the-art technology for the Baku city circuit

HAMM rollers and VÖGELE pavers deliver excellence for the first Formula 1 track in the Caucasus.

Job site details

Conversion of the city roads to a Formula 1 circuit in Baku, Azerbaijan

Length of the circuit:	6,003m
Width of the circuit:	7.5-19m
Asphalt-paved area:	113,400m²
Slope	+12% to -9%

Working parameters

Paved material quantity

Binder course:	10,400t
Surface course:	11,600t

Layer thickness

Binder course:	5cm
Surface course:	4cm

Material

Binder course:	AC 16 BS SG
Surface course:	AC 11 RT

Equipment

1 WIRTGEN W 2100 milling machine
8 VÖGELE SUPER 1900-2 pavers with AB 600 TV Extending Screed
4 HAMM HD+ 110 VO tandem rollers
4 HAMM HD+ 90 VO tandem rollers
2 HAMM HD 110 tandem rollers
2 HAMM HD 90 tandem rollers
2 HAMM HD 10 tandem rollers
1 HAMM HD 14 tandem roller

The race circuit in Baku features 8 righthanders and 12 lefthanders – including a lap around the historic city centre with a double chicane and an uphill section. At the end of the circuit, the Formula 1 racers reach top speeds of more than 340km/h on the approximately 2km straight.

Azerbaijan // Baku

Whenever the 22 Formula 1 pilots race around the track, vying for pole position, the air in one of the many metropolises around the world is charged with excitement. In June 2016, Baku, the capital city of Azerbaijan, got its first taste of this heady cocktail of top speeds, precision and thrills, glamour and celebrations. This spring, a city circuit was created in the centre of the capital, on the "balcony of Europe" amid the centuries-old buildings, contemporary high-rise towers and the port on the Caspian Sea. To make sure that the pilots can safely keep their powerful 815hp (600kW) racing cars on the track, WIRTGEN, VÖGELE and HAMM machines built a high-quality asphalt pavement on the narrow streets and the wide boulevards of the city. »»

First choice for the top league

Formula 1 races make the highest demands on the pavement. The asphalt must be particularly homogeneous and even – and naturally have an outstanding grip. Ideally, such circuits are paved on a defined sub-base. This was not possible in Baku, however, as the circuit passes straight through the city. At the beginning of the year, the streets were a mixture of normal, asphalt roads and historic cobblestones.

Special formula for the ancient cobblestones

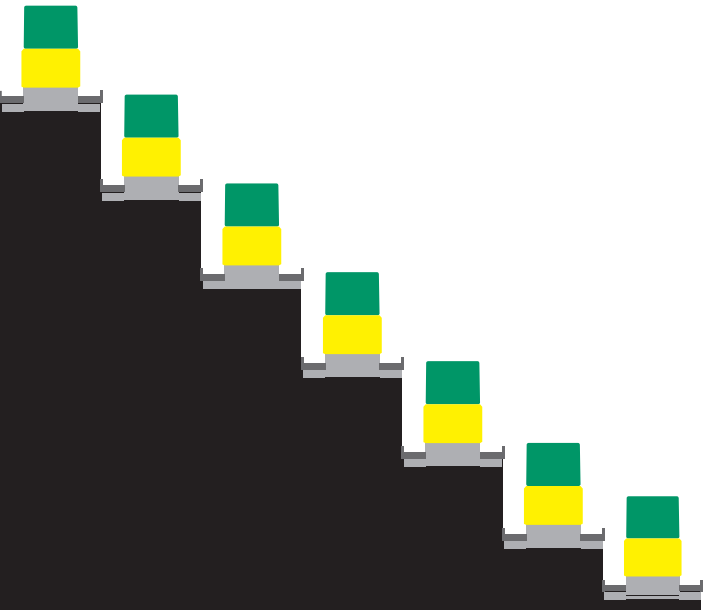
As a feature of a UNESCO World Heritage site, the historic cobblestones had to remain intact and be restored to their original glory after the race. "We solved this unusual challenge by separating the cobblestones from the asphalt with a layer of chippings. A pavement of base course, binder course and surface course was then paved. In the cobbled areas, a carbon-reinforced asphalt layer was integrated into the surfacing. It was designed to prevent the new asphalt pavement shifting over the cobblestone," explains Dr Rainer Hart, an asphalt consultant.

On the other circuit sections, the contractor, AzVirt LLC from Baku, employed 3D-precision milling to create an exact, precisely pre-defined profile that met Formula 1 standards on the existing city roads. »»

AzVirt used several rollers following closely behind the pavers to compact the asphalt in the optimum time frame – an important aspect for meeting the highest quality demands.

At the moment, Baku can justifiably claim to have the best city roads in the world.

Dr Rainer Hart, Managing Director
Hart Consult International GmbH



52m “hot to hot”

The perfectly interlocked asphalt pavement

The formation of the joints has a crucial impact on the service life of asphalt surfaces. This is because cracks at the joints or those resulting from heavy loads are the first places to be attacked by water. “Hot to hot” paving is therefore recommended to permanently prevent moisture from penetrating the asphalt pavement. At least two pavers simultaneously place the asphalt strips “hot to hot” in a slightly staggered formation. Two or more pavers working in echelon is the best way to ensure perfectly bonded longitudinal joints.

EXPERT TIPS

- The distance between the individual pavers should be kept as short as possible so that the joint face of the first strip is still sufficiently hot.
- Rollers with a light operating weight should follow directly behind the pavers. They should compact the surface from the outside inwards in the direction of the joint. It is recommended that the rollers work with an overlap of at least 15cm parallel to the longitudinal joint.
- Joints should be offset in the individual pavement layers and produced with oblique faces.

Eight SUPER 1900-2 pavers with AB 600 TV Extending Screed

The binder and surface courses were then paved onto the previously prepared roadways. This was accomplished by an impressive armada of VÖGELE pavers and 15 HAMM rollers, with the machines sometimes working simultaneously on different sections; all in all, 8 SUPER 1900-2 pavers were used, each equipped with an AB 600 TV Extending Screed. The use of identical screed types was stipulated in the contract.

“Hot to hot” through Baku: the VÖGELE pavers produced a perfectly interlocked asphalt surface.

Perfect logistics

During paving, the asphalt production, transport and feeding were controlled so as to ensure that the pavers were able to work at an almost constant pave speed. More than 40 lorries transported the asphalt from three mixing plants to the pavers. Due to their careful preparation and planning, AzVirt were able to supply asphalt to the pavers just in time without stoppages, despite the difficult traffic situation in the city centre – an impressive feat of logistics and civil engineering.

Seven at one blow

The absolute highlight was the "hot to hot" paving in the area of the seafront, where 7 pavers plus 15 rollers featuring operating weights of between 2 and 14t built the asphalt pavement for the track and the spectator area in a single step. Their combined width spanned 52m – a true highlight for all involved! »»

HD, HD+ and HD CompactLine for high-quality compaction

The AzVirt experts know that final compaction has a decisive influence on the surface quality of the asphalt pavement. With this in mind, they exclusively used HAMM tandem rollers of the HD, HD+ and HD CompactLine series. The design of the articulated rollers already ensures a regular weight distribution – a key factor for outstanding pavement evenness without bumps and cracks. An added advantage is the excellent side clearance combined with the large track offset. Ideal for ensuring consistently precise and full compaction along curbs, road fittings and walls.

Safe and effective with unique visibility

All HAMM rollers feature outstanding visibility. On the HD+, this is guaranteed by the clever frame construction combined with the panoramic cabin. The compact machines of the HD CompactLine range provide drivers with a full view of the working area at all times due to the slim-line front end. This not only influences quality, but is also a safety aspect, particularly when a large number of rollers closely follow the pavers as in Baku.

Protecting historic buildings

Another decisive factor for the quality of the compacting work in Baku was the use of oscillation rollers. They cause significantly lower levels of vibration to the surrounding area than vibratory rollers.

The invitation to tender specified oscillation compaction, as the entire circuit is flanked by century-old buildings. In addition, there are gas pipes as well as underground car parks and tunnels under many of the roads. Vibration compaction was therefore an absolute no-go in most areas. For Manfred Martin, Head of the AzVirt Technical Division, there was no alternative to the HAMM rollers: "As a pioneer in this field of technology, HAMM have more than 30 years of experience with oscillation – much more than any other manufacturer."

Final finish with oscillation compaction

However, oscillation has a great deal more to offer than "just" low-vibration compaction. The special drum movement also creates even surfaces with a good initial grip – the second key point in favour of using oscillation in Baku.

The best city roads in the world

Oscillation compaction was also the first choice for the surface course of the F1 circuit, as areas compacted with oscillation have an excellent longitudinal evenness. The final quality control to check the position and evenness of the track showed that AzVirt had built a superb pavement on the originally inhomogeneous city roads and easily met the stringent surface accuracy requirements of 3mm over a distance of 4m. ///

Oscillation technology from HAMM was used for dynamic compaction of the circuit around the historic city centre, the modern government district and the stylish seafront, without impacting above-ground and underground structures. The compaction results achieved in the process were excellent.

Oscillation

Low-impact methods for the city

On city-centre job sites with confined conditions, dynamic compaction with oscillation is recommended, as it only introduces around 15% of the vibrating force into the surrounding area in comparison to vibration. This protects the surrounding buildings as well as the pipes and installations below the pavement.

ADVANTAGES

- Low vibrating forces in the area around the machine
- Dynamic compaction, also for vibration-sensitive areas

Perfect surfaces for Formula 1 races

Surfaces that are compacted with oscillation feature a very high degree of longitudinal evenness. This is because the drum is in constant contact with the ground. This type of asphalt compaction also produces an excellent initial grip, as the drum rubs the bitumen on the upper surface of the pavement with its oscillating movement. A clear bonus when it comes to safety.

ADVANTAGES

- Excellent longitudinal evenness, no irregularities in the surface
- High level of initial grip

“This plant is a real productivity booster.”

Taking efficiency and quality to the next level with state-of-the-art technology: the new KLEEMANN MOBIREX MR 110 Zi EVO2 impact crusher in service for GreenRock Recycling breezes through one week’s worth of work in just one to two days.

Job site details

Recycling of residual construction materials and milled asphalt to produce Recycled Concrete Aggregate (RCA) and Reclaimed Asphalt Pavement (RAP) in Clinton, New Jersey

Material

Feed material:
brick, construction materials, concrete, asphalt

Main final products:
RCA: 38mm
RAP: 38mm and 32mm

Equipment

MOBIREX MR 110 Zi EVO2

USA // New Jersey

New crusher, higher productivity: GreenRock Recycling boost crushing performance and quality with a KLEEMANN MOBIREX MR 110 Zi EVO2 impact crusher. Based in Clinton, New Jersey, the company recycles a wide range of materials. Bricks, construction materials and concrete are turned into high-quality Recycled Concrete Aggregate (RCA), and the milled asphalt is turned into Reclaimed Asphalt Pavement (RAP). In addition, GreenRock Recycling extract shale, which is used as a filler, from their own quarry. They were unable to reach their business target with their previous jaw

With the MOBIREX MR 110 Zi EVO2, GreenRock Recycling succeeded in expanding their business with recycled asphalt in a very short time – and also in tapping a new line of business with DOT-certified concrete.

crusher, as the crushing output was only 1,000t per day and the crushing plant was not equipped with an integrated screening unit. As a result, the final granulations were not classified and did not comply with grain shape specifications. It was therefore impossible to satisfy the standards of the Department of Transportation (DOT) and acquire DOT certification for defined grain sizes such as 38mm – a must for medium and large-scale jobs. »»

Business targets achieved with KLEEMANN impact crusher

Investment in a KLEEMANN MOBIREX MR 110 Zi EVO2 has paid off for GreenRock Recycling. With the track-mounted impact crusher, the company also tapped into another line of business – DOT-certified concrete. In addition, business with recycled asphalt has been expanded. Meanwhile, operating costs are falling, as the diesel-direct drive of the MOBIREX MR 110 Zi EVO2 consumes considerably less fuel. The crusher is driven directly by the diesel engine via a fluid coupling, while the conveyors and other components are driven by electric motors. Its efficient power transmission makes it the crusher with the lowest consumption based on one tonne of final product. "Our old crusher guzzled 42 litres of fuel per hour, and the KLEEMANN with its 331kW engine consumes just 25 litres per hour," enthuses Mike Plushanski, General Manager of GreenRock Recycling. »»

Highlights of the KLEEMANN MOBIREX MR 110 Zi EVO2 impact crusher

- Expanding system widths for optimized material flow
- Feeding unit with hydraulic hopper folding and locking system
- Effective prescreening with independent double-deck prescreen
- Continuous crusher utilization due to Continuous Feed System (CFS)
- Crusher unit with innovative C-shaped rotor ledges for superb product quality
- Lock & Turn safety system for safe rotor ledge replacement
- Efficient and powerful diesel-direct drive
- Simple control with menu-based touch panel
- High-performance final screening unit with extra-large screen surface
- Simple loading due to greater ground clearance

Our new KLEEMANN crusher consumes 17 litres less fuel per hour.

Mike Plushanski, General Manager GreenRock Recyling

More high-quality final product is produced in a much shorter time with the MOBIREX MR 110 Zi EVO2: the crushing capacity is 240t/h for concrete and 205t/h for asphalt.

With the MOBIREX MR 110 Zi EVO2, GreenRock Recycling produce the exact grain shape and size that is required for DOT-certified concrete.

MOBIREX from KLEEMANN: The powerful impact crusher

The track-mounted impact crushers of the MOBIREX series are used for soft to medium-hard natural stone and for recycling residual construction materials. Their main advantages alongside the quality of the final product are the high operational availability, a wide range of applications and the environmental and cost benefits. In comparison to competitor products, the crushers consume the least amount of fuel per tonne of final product. The MOBIREX plants guarantee a final product that meets the stringent specifications of the concrete and asphalt granulation standards with regard to grain shape, grain size distribution and cleanliness.

Prescreening for a high-quality final product

The impact crushers are equipped with a prescreening system. This lowers the wear on the crushing plant and increases the throughput as well as the quality of the final product. Material prescreening is particularly efficient with the independently vibrating double-deck prescreen of the MOBIREX impact crusher: fines and material that already have the required final grain size are routed past the crusher via a bypass. As a result, only material that still requires processing is fed to the crusher. This also significantly lowers wear.

Main components can be controlled from the excavator

The MOBIREX MR 110 Zi EVO2 demonstrates very effectively just how simply even complex crusher plants can be operated. The main components can be conveniently and remotely controlled by the excavator operator. Start-up and basic configuration are controlled from a panel in the easily accessible control cabinet. The touch panel is hallmarked by its well-structured menu navigation, intuitive symbols and clear operating instructions. This enables the operator to start the plant in a few steps and view the statuses of all components such as the speed or temperature. Even the size of the crushing gap (CSS) can be set fully hydraulically in this way and during active operation. The operating system of the MOBIREX MR 110 Zi EVO2 therefore reduces downtimes considerably – boosting the plant's operational availability and productivity at the same time. "With the MOBIREX, I can simply make any necessary adjustments on the touch panel, for example when changing the material. This saves time and is more convenient. I used to have to clamber around on the plant with a wrench in my hand for half an hour, now I only need 30 seconds to make the adjustments," explains Mike Plushanski, General Manager of GreenRock Recycling. ///

High output and product quality thanks to prescreening

How users can boost the capacity and product quality of their crushing plants.

How can I achieve high screen efficiency?

MOBIREX impact crushing plants control the layer of material and can be coordinated to ensure an optimum material layer thickness during transport to the crusher. This makes screening even more efficient and lowers wear in the crusher. Selecting the right screen media is key for efficient prescreening. The following options are available for the double-deck vibrating screen:

Upper deck with punched plate
- Most frequent application: recycling
- Variable tensioning possible
- Good separation

Lower deck with screen media
- Different tensioning sizes possible – depending on requirements
- Purifies the final product, for example unwanted fractions can be screened out
- If the feed material does not contain any unwanted fractions, a salable product can also be discharged via the side discharge conveyor

Upper deck with grating
- Most frequent application: natural stone
- Larger open screen surface
- Efficient screening of fines
- Effective in preventing caking

Lower deck with dummy cover
- If the feed material is free from unwanted or even hazardous fractions, the fines can be added to the final product via the bypass

Why use a prescreen?

To ensure efficient processing, excessively fine material should not pass through the entire crushing process. The impact crushers of the MOBIREX range are aided in this respect by a double-deck prescreen. It prescreens the feed material so effectively that fines and also material with the specified final grain size are routed past the crushing chamber. This lowers wear on the plant and achieves a high throughput. Prescreening also removes impurities such as clay from the product. As the fines content is precisely controlled, operators achieve a higher-quality final product.

How does prescreening work and which types are there?

The material is fed onto the feeding unit of the MOBIREX. It is then conveyed from the vibrating feeder to the independently vibrating double-deck prescreen. Material that is larger than the openings on the upper deck passes to the crusher. Material that is small but still larger than the openings in the lower deck is routed to the final product via the bypass. Material that is smaller than the openings on the lower deck is fed to the side discharge conveyor. The material discharged from the side discharge conveyor can be further processed directly, depending on the quality. The medium grain that passes into the final product via the bypass also lowers strain on the crusher. ///

BENNINGHOVEN ECO plant:

The ultimate key to versatility and quality

An investment with a future: the new BENNINGHOVEN ECO 3000 plant raises the quality and quantity of asphalt production for Hungarian contractor Depona Plusz.

Hungary // Hajdúsámson

A debut in Hajdúsámson, Hungary: Depona Plusz invested in a BENNINGHOVEN asphalt mixing plant for this location. The ECO 3000 is the first plant of its kind in Hungary and it is taking the company's economic efficiency into a whole new dimension. With its new ECO 3000, the quarry operator and supplier of asphalt mixes is improving its energy balance while simultaneously boosting the mixing output. Both aspects were key criteria: a wide array of different road construction projects are currently being planned and implemented in the region. To bid successfully, Depona Plusz need a flexible and above all cost-effective plant. This was the main motive behind the decision to invest in leading BENNINGHOVEN technology. »»

Container design makes for flexibility

The modular structure of the ECO series permits the integration and retrofitting of a wide variety of high-tech components. As a result, Depona Plusz can continue to respond to the needs of customers and the market in future, particularly when it comes to asphalt recycling solutions. For the flexibility of plants in the ECO series is systematic: they are transportable asphalt mixing plants in a container design. For easy transport, all the main components are designed in standard container dimensions with lengths of 20 or 40 feet. The ECO 3000 plant belonging to Depona Plusz can produce up to 240t/h of asphalt, a sufficient quantity even for the continuous supply of material to road pavers working on larger construction projects, for instance when constructing motorways. A 109t mixed material storage silo was additionally integrated in the plant to ensure ample reserves.

EVO JET burners boost efficiency

In the dryer drum, a high-efficiency BENNINGHOVEN EVO JET 3 burner with a rated thermal input of 19MW heats the aggregate to the correct temperature, preparing it for the mixing process. The Hungarian construction materials supplier opted for a burner designed for use with oil and liquid gas. The company can thus chose between two different fuels, reducing dependency on the raw materials market. One major advantage of BENNINGHOVEN EVO JET burners is that the multi-fuel version can operate with up to four different types of fuel, either individually or in combination. EVO JET burners, which have gained legendary status on the market, are already being used in the company's old plant. Depona Plusz's move to invest in an entire new plant was something of a no-brainer, considering the advantages of BENNINGHOVEN's integration in the WIRTGEN GROUP and the trusting relationship between the companies. And indeed, the ECO 3000 is a genuine improvement – the plant is highly productive and operates extremely economically. ///

An important reason behind the decision to invest in BENNINGHOVEN technology was the closeness of the WIRTGEN GROUP to its customers – which naturally includes an on-site service in eastern Hungary, too.

Ingeniously designed: How BENNINGHOVEN is driving user-friendliness

The ECO plants incorporate BENNINGHOVEN's new weighing and mixing section. When developing it, the engineers involved focussed strongly on user-friendliness, with

- Pre-installed interfaces for cold and hot recycling feed, bag feed, foam bitumen, granulate feed, fibrous material feed and adhesive feed
- Excellent accessibility in all areas thanks to the all-round 800mm width of walkways and work platforms
- Plug & play cabling for fast set-up
- Optimum illumination of the working and maintenance areas with LED technology
- Large service openings offering ergonomic access to the mixer for servicing or maintenance
- Central compressed air service unit for oiler and separator as well as filter
- Intuitive colour-coded lubrication schedule (colours indicate the maintenance interval, e.g. daily, weekly or monthly)
- Electrical and compressed air supply available for tools and maintenance work
- Modular expansion of functions by means of BUS system
- Key transfer system for increased occupational safety

BENNINGHOVEN power for Hungary's motorway network

State-of-the-art technology for the Hungarian infrastructure: the road construction company Hódút Freeway Kft. is investing in a BENNINGHOVEN TBA 4000 plant with a mixing output of 320t/h.

Hungary // Sáránd

A key investment in the Hungarian construction industry: Hódút Freeway Kft. have commissioned a TBA 4000 from BENNINGHOVEN at the Sáránd location. The road construction company is one of the largest of its kind in Hungary and was recently awarded the tenders for two motorway sections. The specifications of the transportable BENNINGHOVEN asphalt mixing plant – which is what the name TBA stands for – make it the ideal choice for these job sites: the TBA 4000 can produce up to 320t of asphalt per hour. It is hence making a key contribution to the expansion of the motorway network in eastern Hungary. »»

Thanks to the container-type design of the main components with plug-in wiring, TBA plants are ideal to transport and fast to set up.

Opting for modern technology and high economic efficiency

Hódút can look back on a long corporate tradition and have a vast amount of experience in asphalt production and paving. Their contact with the WIRTGEN GROUP dates back over 20 years. Along with VÖGELE pavers, Hódút are already using BENNINGHOVEN components in the form of retrofit solutions in asphalt mixing plants at other locations. Hódút Freeway Kft. have had excellent experiences with this equipment – making it an obvious choice for the company to invite BENNINGHOVEN to submit a bid. The TBA 4000 turned out to perfectly meet the defined specifications. Apart from the quality of the technology – which Hódút Freeway Kft. were already able to judge – the main clincher for the company was the economic efficiency of the plant. This aspect enabled the operator to keep an eye not only on the acquisition costs but also on the total cost of ownership and the overall energy balance.

Acting in a spirit of partnership: The WIRTGEN GROUP in Hungary

Technology and economic efficiency were not the only crucial factors behind the decision to invest in this technology: the trusting relationship between Hódút, the WIRTGEN GROUP in Hungary and BENNINGHOVEN also played a key role. For over 10 years now, Sales Manager Áron Visnyovszky has been supporting the customer Hódút in the field of BENNINGHOVEN asphalt mixing plants. "When you work with a customer for such a long time, you can't sugarcoat anything any more. This makes it all the more important for us in the WIRTGEN GROUP to gain an edge with honest work and reliability," says the business manager, summing up one of the WIRTGEN GROUP's main objectives: customers should always be able to rely on the Group keeping its promises. This is particularly true when it comes to service: operators and customers can turn to their local subsidiary for help with absolutely any concern. After all, the WIRTGEN GROUP does not focus solely on sales, but on ensuring that its technology really works and that its customers are successful – a core added value. Hódút Freeway Kft. have since placed follow-up orders: plants at other locations are to be fitted with an EVO JET burner and a BLS 3000 control system from BENNINGHOVEN. ///

Ready for asphalt recycling: Leading BENNINGHOVEN recycling technologies

RAP processing is mandatory in order to conserve natural resources. This important reason for recycling is just one of many partly country-specific requirements. Meanwhile, reduced emissions and increased cost-effectiveness make a strong case for using green technology from BENNINGHOVEN. These technologies can be integrated in TBA plants:

Cold recycling feed systems:

- Dosing system into the mixer – for RAP material rates of up to 30%
- Multivariable dosing system – for RAP material rates of up to 40%

Hot recycling feed systems:

- Parallel drum – for RAP material rates of up to 70%
- New: parallel drum in counterflow with hot gas generator – for RAP material rates of up to 80%

The largest dryer drum ever installed in Hungary: the TT 11.26 from BENNINGHOVEN with a length of 11m and a diameter of 2.6m.

Sun, sand and sea:
Elevado do Joa in Rio de Janeiro, Brazil.

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