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Wirtgen TECHNOLOGY

FALL / WINTER 2008

Pair Of WR 2000 XLs Stabilize Border 'Fence'

Super 1800-2 Can Do Double Duty

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On the Cover: *Two WR 2000 XLs stabilize right-of-way for border fence under construction between United States and Mexico; see article Page 22*

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Whether new construction or rehabilitation – roads are our customers' domain. With future-oriented technologies, reliable machinery, unceasing innovation, and highest demands on customer service and advice, we pursue one single goal: The perfect road!

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As I see it...

Like You, Wirtgen In It For The Long Run

We all are looking at a tough 2009. But like you, the road builder, in the face of a down economy, Wirtgen America is in the market for the long run.

The initial economic outlook is troublesome, but readers of *Wirtgen Technology* magazine should know that like most of its customer businesses, Wirtgen Group is privately owned, and thus is free to meet customer needs without the constraints of having to publicize quarterly profits or obsess on the price of its stock. We're in it for the distance, and our ownership structure helps us stay in the race.

Material, Fuel Costs Ebb

After three years of steady nominal growth, the U.S. highway and bridge construction market was expected to flatten in 2009, as recent increases in federal highway investment will likely be offset by weakened state and local highway budgets, reports the American Road & Transportation Builders Association.

But as economic growth and road building slows, material costs will ebb and the costs of both fuel and asphalt will fall. In 2008 it appears that highway construction costs will have risen an astonishing 11 percent, but the recent collapse in the price of crude already is sharply lowering prices for asphalt and diesel fuel.

And if construction material costs level off next year, said Dr. Bill Buechner, ARTBA's top economist, the real volume of construction work should stabilize, and may even improve, after declining about six percent in 2008. Buechner projects the value of construction work put in place on highways and bridges to be $80.2 billion in 2009, a slight 1.5 percent increase over 2008's $79 billion.

One factor that could considerably brighten the forecast is for Congress and the president to enact an economic stimulus bill in early 2009 that includes transportation investment.

Three Themes For The Future

All these stats notwithstanding, there are three powerful themes that will carry the customers of Wirtgen America through the turbulence ahead.

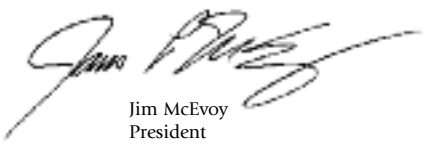
The first is the fact that Wirtgen Group products – Wirtgen cold mills and recycling equipment, Hamm asphalt and soil compactors, pavers from Vögele America, Inc., and material processing equipment from Kleemann Inc. USA – all are industry leading products in terms of technology and innovation. Their inherent advanced designs make them longer-lived, more user-friendly and more productive than other brands, providing an unbeatable value-added for their owners.

The second theme is that no other road maintenance equipment manufacturer is as strongly positioned in environmentally sustainable road building as is Wirtgen. Wirtgen pioneered asphalt milling and recycling machines, and as "green" building comes to dominate construction in coming years, Wirtgen and its customers will be well positioned. And if smaller budgets mean a cutback in big "greenfield" projects in favor of road reconstruction and maintenance, Wirtgen Group customers will benefit even more.

Third, we are family owned. We are concerned with the long-term future, instead of being fixated on the next quarter's dividend. We've weathered the ups and downs of business cycles without getting motion sickness. You can count on us to work with you as we both weather the tempest.

And on the horizon, reauthorization of current federal surface transportation legislation will be the major issue of 2009. One bill in development by Rep. Jim Oberstar (D-Minn.), chair of the House Transportation & Infrastructure Committee, would provide $450 billion to $500 billion for surface transportation over six years, a 57 to 75 percent increase over the existing SAFETEA-LU.

That's a future worth pursuing. Please stick with us while we all ride out the storm.



Jim McEvoy
President
Wirtgen America Inc.

New Wirtgen W 150 Accelerates Illinois Road Widening Project

'Wasp-waist' of W 150 enhances operator visibility above cut

In August, a brand new Wirtgen W 150 cold milling machine – introduced to North America early in 2008 – was hard at work on a road widening project located in north-central Illinois.

On Ill. Rte 47, located in Livingston County, Iroquois Paving's W 150 was removing a 10- mile, 3-ft.-wide shoulder 7.25 in. deep on both sides of the highway. Later Iroquois Paving would return with both of its half-lane Wirtgen mills – a W 1900 and W 2000 – and remove the entire surface of the highway and place level binder in one operation, what Iroquois Paving calls a "mill-and-fill" operation.

"The W 150 gives us the ability to remove shoulder at a faster rate, which enables us to mill-and-fill shoulder in one operation, with no overnight drop offs and no barricades." said Dan Tincher, vice president of operations for Iroquois Paving Corp. "We take what normally would be multiple operations, and make them one operation in one traffic closure. This means fewer lane closures and a safer work zone for the traveling public."

Iroquois Paving Corp. is a well-rounded highway contractor, and its cold milling is just a part of what it does. Iroquois is a heavy highway asphalt paving company, and owns a new Vögele America, Inc. Vision 5200-2 10-ft. tracked paver with HR 500 E screed.

But from its headquarters in Watseka, Ill., Iroquois also undertakes bridge construction, water main and sewer installation, and many other construction activities. The firm is a ready mix concrete producer. And through its Interstate Asphalt division, Iroquois produces hot mix asphalt and recycles reclaimed asphalt pavement from two sites. The firm also has an extensive transit operation via its Interstate Trucking division.

Iroquois Paving brought operators from their market regions in Illinois to be trained on the W 150.

"The W 150 is a Cadillac," said one operator. "It works very nice. All the controls are very easy to reach and interpret. The ergonomic controls are very well thought out. I have to try not to sit back and recline too much, it's so nice."

Operators are learning that the W 150's use of a steering wheel adds to its ergonomic utility. "With the Level Pro system and steering wheel, you can evaluate everything in arm's reach, without having to look at much else," said another. "Once you are familiar with the controls you don't have to re-examine them every time you go to turn something on or off. The seat is very comfortable, and the seat is positioned to make it nice and easy to reach the controls."

The "wasp waist" of the new-design W 150 put Iroquois Paving's operator in a position up and over the road, with an

"The W 150 gives us the ability to remove shoulder at a faster rate, which enables us to mill-and-fill shoulder in one operation, with no overnight drop offs and no barricades."

unparalleled view of the surface to be milled. "You are right over the milling drum," said another. "It's very easy to see everything, such as the milling surface, conveyor and truck. You have very good visibility for loading the truck with the conveyor. The seat slides from the left to the right, so you can really kick the seat out over the milling drum and surface for an even better view."

"Wirtgen milling machines have long been a big part in our ability to be innovative in how we construct our projects," Tincher said. "We like this machine for many reasons. There is no shortage of horsepower and the fuel consumption has been outstanding, along with the length of time between watering.

"This machine offers great opportunity for increased utilization with the changeable drum," Tincher added. "As we have come to expect, Wirtgen Group has worked hard to understand our needs and fulfill them."

Wirtgen W 150 removes shoulder in advance of road widening in north-central Illinois

Operator uses both steering wheel and joystick controls

About The Wirtgen W 150

The innovative new Wirtgen W 150 cold mill was introduced to North America at Conexpo-Con/Agg 2008 in Las Vegas.

The W 150 is a large but compact milling machine that can optionally be fitted with milling drums of 4 ft. (1.20 m), 4 ft. 3 in. (1.30 m) or 5 ft. (1.50 m) working width, letting the W 150 be used for a variety of different applications such as milling large surfaces, removing pavement layers at full depth, or leveling. The W 150 cutting depth is zero to 13 in. and the machine accepts the Level Pro, FCS and Flexible Cutter System Light (FCS L) systems.

The W 150 has replaced the W 1500 in the broad product range of Wirtgen Group, which markets the world's largest line of cold milling machine models in all performance classes, and for all types of applications.

The W 150 houses a powerful 6-cylinder Cummins turbo diesel engine with an output of 350 HP, which complies with the stringent exhaust emission standards stipulated by the US EPA (Tier III) and the EU (Stage III a).

The W 150 is equipped with the world's first four-fold full-floating and height adjustment system as a standard machine feature. The system ensures that the machine aligns parallel to the road pavement automatically both during the milling operation and in transport mode. It also guarantees reliable traction of the W 150's four crawler track units, enabling the machine to always adapt to ground conditions dynamically, and ensuring permanent ground contact and precise adherence to the selected working depth during the milling operation.

The machine's "wasp waist" – the specially shaped central part of the machine chassis – ensures that the operator has a perfect view of the milling edge, enabling him to steer the machine with pin-point precision from the individually adjustable driver's seat. This free-view concept produces significantly better and more effective milling results without the need for time-consuming manual reworking.

New GPS Navigator, Hammtronic Systems Speed Compaction With Precision

In August, on a two-lane blacktop road construction project on U.S. 45 north of Watersmeet on Michigan's Upper Peninsula, Hamm Compaction Division demonstrated its new *GPS Navigator* module for its *Hamm Compaction Quality* (HCQ) "smart compaction" technology, to rave reviews.

There, a Hammtronic-equipped Hamm 3412 HT dirt roller with a cab that allowed installation of GPS Navigator and display was compacting the road's reclaimed subgrade, while linked to overhead GPS satellites. The satellites enabled the system to continuously locate the roller on its rolling patterns while the system automatically recorded attained density and bearing capacity, and displayed the color-coded densities within a "compaction map" showing the rolling pattern on an LCD monitor inside the cab of the machine.

The Hammtronic System

The Hammtronic system – the popular option on European Hamm rollers – utilizes an onboard computer that allows trouble free, power-on-demand operation in the compactor that allows the owner to realize significant fuel savings.

Hammtronic has features such as automatic anti-slip control, which directly proportions the amount of power going to the drum and the rear axle, depending on the grade. As a grade is encountered, at preset travel speeds, the engine will automatically compensate by maintaining the travel speed and the amount of vibration.

Not only does the Hammtronic system provide better fuel consumption because the engine does not have to run at full RPMs as necessary, but it also won't prematurely wear out unit components such as pumps or motors, as they don't run at full capacity unless it's needed. A quieter machine results.

"You get constant, consistent vibration and density, no matter what conditions you are operating under," said Richard Evans, Hamm vice president of sales. "This is instantaneous control by computer, so the gradability of a Hammtronic machine is enhanced well beyond that of our standard traction control system." Today, the Hammtronic system is available on dirt rollers from 7 to 25 tons in size.

Onboard GPS Navigator

A compactor with a cab is required for GPS Navigator, so the display can be housed and protected from the elements, while providing a platform for the GPS receiver. While most soil and asphalt compactors in North America don't have cabs, Hamm is seeing a strong growth in shipments of rollers with cabs in 2008.

"Cabs are becoming ever more popular in North America," Evans said. "We have sold more than four times as many machines with cabs this year as we did the previous year, so it's a big growth opportunity."

GPS receiver is mounted directly above drum for pinpoint accuracy

LCD monitor is located inside the cab of 3412 HT (for Hammtronic)

GPS Navigator is one of a series of integrated modules being developed by Hamm that will provide users with different levels of "smart" compaction. The goal is to provide an integrated HCQ system that will help its customers produce high quality, highly durable asphalt pavements and soil surfaces.

The GPS Navigator shown in Michigan uses a DGPS (differential GPS) receiver. This permits accurate positioning to within a matter of inches. The only preparation required is to install the DGPS receiver in the compactor. Time-intensive and costly setup of a ground station on the construction site is not necessary.

There are 24 GPS satellites in six different orbits. To locate a position clearly, the receiver must have a visual connection to at least four satellites. The receiver uses the differential signal (correction signal) from an additional satellite. With this additional information the receiver pinpoints the position of the roller with very high precision.

A North American First

The GPS Navigator system demonstrated in Michigan was the first in North America. "It's the latest system from Germany and it's the first time it's been seen in North America," Evans said. "Hamm has been offering a density system on dirt rollers for the last 30 years in different forms. This is the latest edition, utilizing modern software and computer control. It will monitor the number of passes, and the amount of density. The display shows attainment of density by color hue, creating a graph that shows exactly where the roller moved, allowing the operator to maintain a consistent density across the whole area, while pinpointing weak spots and showing you directly where you need to apply more effort."

In addition to color-coded attained densities on a cab-mounted display, located spatially via the GPS system, the GPS Navigator system creates a performance database that can then be printed out, downloaded to a memory stick on a daily basis, or brought into an office for loading on a desktop computer.

Whichever way, a record is created that can become a resource should any questions arise later about the performance of the operator or the densities that were attained. Thus, Hamm GPS Navigator also provides strong support for quality assurance/quality certification on projects where contractors are responsible for QA/QC.

"Much of the development of GPS Navigator was driven by European authorities who demanded documentation," Evans said. "Contractors there also were liable for their work under warranty, and needed a system that provides documentary proof that they achieved the density that was required by engineers."

For the project, the existing pavement and base was being recycled to a depth of 10 in., and graded prior to compaction. "Along the shoulders, we're finding that the combined mixtures are very different than it is in the main part of the roadway, with a lot more sand and base material than reclaimed asphalt pavement," Evans said.

Recording Density On The Fly

To determine density within the HCQ system, an accelerometer mounted on the frame inside the drum reads the resonance reflecting from the soil as the roller makes its pass, and the feedback is compared to calibration points. To calibrate the system, only a small number of reference measurements have to be taken at selected points. As the material gets more rigid and more dense, more "bounce" is returned to the drum and is interpreted by the system as increased density.

It's this information that is combined with the roller's spatial (location) data and recorded in the database, while being displayed on the screen above the operator. Hamm will be bringing more and more such equipped machines into North America in the coming months. "There is growing interest in GPS systems and their ability to record density on the run," Evans said. "The Hamm GPS Navigator is a system whose time has come."

GPS receiver interfaces with at least four different satellites

Sunland's Super 1800-2 Can Do Double Duty As SprayJet And Paver

Super 1800-2 SprayJet places open-graded wearing course

"We can use it as a spray paver for wearing courses, or we can disconnect the module and make it a regular asphalt paver."

The new Super 1800-2 SprayJet paver from Vögele America, Inc. can do double duty for Sunland Asphalt, Inc., of Tempe, Ariz.

With the exclusive SprayJet module mounted, Sunland uses its new Super 1800-2 to place both open-graded rubberized and Novachip wearing courses in western markets from the Valley of the Sun in Arizona, to California's Central Valley.

And if the module were removed, Sunland could use the Super 1800-2 SprayJet to place conventional hot mix asphalt pavements.

Either way, it's a win. "We can use it as a spray paver for wearing courses, or we can disconnect the module and make it a regular asphalt paver," said Steve Bless, superintendent, Sunland Asphalt. "But we have so much spray work to do that we have yet to use it for regular paving."

Rubberized Wearing Course

When visited in fall, Sunland was placing a rubberized open-graded wearing surface on Calif. 99 just south of Fresno. Sunland places these rubberized wearing courses all over the state, and was performing as a sub for general contractor Martin Brothers Construction Inc. of Sacramento.

The rubberized open-graded wearing course consists of an initial sprayed layer of polymerized binder, deposition of 3/8-in. aggregate, and an immediate spray of rubberized binder, all in one pass by a single machine, followed by finish rolling. The wearing course typically is placed 5/8 up to 7/8 in. thick, depending on Caltrans specs, and on Calif. 99, was being placed 12.5 ft. wide, a full lane.

The Super 1800-2 has an integral spray system that sprays polymer modified binder in front of the mix being laid, followed immediately by aggregate, and then a second spray of rubberized binder, Bless said. "The advantage is less mess," he said. "There is no traffic or construction equipment tracking the binder before the aggregate is laid. So we get a solid coat of emulsion on the entire lift, edge to edge for that lane."

The first binder, the polymerized emulsion, is placed at 175 deg F, while the rubberized binder comes out between 295 to 325 deg F. "Once the aggregate hits the oil below it breaks it, and wicks up binder through capillary action through the aggregate mix," Bless said. "This gives it its binding power." The immediate, subsequent application of rubberized binder from the SprayJet module coats the entire structure, penetrates downward, and melds with the bottom lift of binder, which retains its heat, creating a near-monolithic wearing course that will hold up to the Central Valley's punishing traffic and heat waves.

As such, it is not unlike Novachip, which also can be placed by the Super 1800-2 SprayJet. "It a very similar process, except that this has the rubber in the binder, and Novachip does not," Bless said. "Rubberized binder is used all throughout California but it does not complicate placement for us."

Novachip cures within five to 10 minutes, while the rubberized wearing course takes a little longer, Bless said. "The rubber takes longer, and it can vary by how thick you are laying the course," he said. "The spray paver has a tamper bar and it compacts the mix behind the screed to 95 percent, while still keeping its open-graded character." The roller operator makes three passes to smooth the course out, he added.

Rubberized wearing course placed on Calif. 99 at 75-80 fpm

Sweeping and sometimes crack filling are the only preparation needed ahead of a rubberized open graded wearing course, Bless said. "We were running 75 to 80 feet per minute, which is normal for us," he said.

South of Fresno, Sunland was doing three lane miles a night. "We could do up to five miles a night, but the asphalt supplier could not make the material fast enough," Bless said. "This year we will do 1.2 million sq. yd. for Caltrans elsewhere in the state; the Fresno project will be over 200,000 sq. yd."

One Of Three Sprayers

The Super 1800-2 SprayJet is one of three Vögele America sprayers owned by Sunland, the two others being Super 1800 SF pavers. "It's smaller than the old Super 1800 SF and it's more of a universal design, in which the paver can be used for paving regular HMA and spray paving. Also, the spray systems are totally different," Bless said. "But it's a good paver and the way we place these wearing courses is pretty much the same."

To convert from spray to conventional paving, the gleaming Spray-Jet module is removed in a simple process. "You don't have to take off the spray system, but you can if you want," Bless said. "Then, you add a second seat so the paver can be operated from both sides."

Since its acquisition in late 2007, Sunland has used its Super 1800-2 SprayJet to place wearing courses in Utah and Arizona, in addition to California. "In Arizona we are using the smaller Super 1800-2 to place Novachip in a lot more subdivisions, including cul-de-sacs, than we could do with the larger, older models," Bless said.

Environmentally, the new Super 1800-2 SprayJet is a big improvement over the Super 1800 SF, Bless said. "At end of day cleanup, the old spray paver system would have to be cleaned with gallons of diesel fuel," he said. "The new paver is cleaned with air. You suck everything in the lines back into the tank, and then build up air pressure and blow air through the spray system and tips. That's a very good cleanout system design for the environment."

And the new spray paver's control systems are a leap forward from the older model, Bless said. "The duplicate control systems on the new spray paver are a hundred times better than the old 1800 SF," he said. "They're more user friendly, are digital, and now either screed operator can control everything at one spot, including tamper bar, tamper bar feed, the vibrator, the vibrator feed, and more."

In addition to the Super 1800 SprayJet, Sunland owns another multi-use machine, the Wirtgen 2200 CR, a cold in-place recycler and a conventional cold milling machine in one robust unit.

SprayJet module can be removed for conventional HMA paving

THINK GREEN

WR 2500 S, Hamm Roller Hasten Rochester Runway Reclamation

Hamm HD 130 asphalt roller compacts reclaimed runway base

Emblazoned with *Think Green* decals, and abetted by a Hamm HD 130 vibratory compactor, a WR 2500 S recycler/reclaimer was speeding reclamation of 3,500 ft. of 5,500-ft Runway 10/28 at Greater Rochester International Airport this summer.

Wirtgen's largest and most powerful reclaimer was mixing an existing, residual layer of asphalt with the existing runway base (FAA No. 2 crusher run) to create a new base structure on which the reconstructed runway would be built. The recycler/reclaimer is owned by the subcontractor Flex-Tech Resources Ltd., Independence, Ohio.

The runway reconstruction called for closure of the runway, then removal of 8 in. of asphalt using the WR 2500 S, said Mark Preston, job superintendent for DiFiore Group, Rochester, N.Y.

"Flex-Tech went over the runway with the WR 2500 S, removed the blacktop in place, and now is going back over it, mixing the remaining 2 to 4 in. of asphalt and the subbase together to make a new base," Preston said. "We're mixing it with the gravel that's underneath the asphalt, along with the asphalt."

While no asphalt emulsion or other stabilizer was used, two sprinkler trucks were distributing water used to knit the material together and to aid compaction. A padfoot roller and one or two smooth drum rollers – including the big Hamm HD 130 – followed to achieve compaction to 95 percent.

Ultimately, the new subgrade was to receive 25 in. of asphalt in three lifts, at 100 percent compaction, per FAA specs.

To reclaim the base, the WR 2500 S was making long passes 8-ft. in width, at which point it would turn around and return. "The WR 2500 S has worked very well, and we're happy to help DiFiore here at the Rochester Airport," said Nick DiGeronimo, Flex-Tech vice president. "The machine is great for mixing in additives, or just milling and pulverizing in-place, as we're doing here, and adding water. It's a great tool for the job."

"I like the concept of making the base right here in-place," Preston said. "It's a big time saver and it eliminated a lot of truck hauls. Otherwise we would have had to mill all the asphalt off, stockpile it, bring in a portable plant, process it, and bring it back out." Minimizing truck hauls and on-site crushing also cut down on fugitive dust, always a problem for airport construction.

While Flex-Tech is a major promoter and user of foamed asphalt Green Mix, it wasn't using it on this project. "We've mixed lime, lime kiln dusts, cement, emulsions and foamed asphalt, all with

"The WR 2500 S is great for mixing in additives, or just milling and pulverizing in-place, as we're doing here, and adding water. It's a great tool for the job."

HD 130 joins Flex-Tech's WR 2500 S in runway reconstruction

one machine," DiGeronimo said. Flex-Tech owns two more units, both WR 2500s, the predecessor to the WR 2500 S.

"It's a very versatile machine," DiGeronimo said. "We've used it for several different operations including a shopping mall parking lot where we pulverized the existing sandstone so it could be used in the fill operation, and at a landfill where they have very strict requirements for moisture. We've actually added moisture to the clay landfill liner by processing the material with the WR 2500s, because of its ability to precisely regulate the water injection while mixing."

WR 2500 S is largest of Wirtgen's reclaimer/stabilizers

About The Wirtgen W 2500 S

The "S" in the WR 2500 S stands for "Super", because the WR 2500 S reclaimer and soil stabilizer is a beefed-up, higher performing version of the predecessor WR 2500.

In addition to its high performance as a full-depth base recycler of failed road pavements, and as a soil and base stabilizer, the WR 2500 S when equipped can be used to make a foamed asphalt-stabilized base, with significant savings and base performance improvements for the owner and contractor. It also can be equipped for emulsion and/or high volume water stabilization.

Its cutting width is from 8 to 10 feet, with a maximum cutting depth of 20 inches, boasts a hydraulic, all-wheel travel drive, and its power plant is rated at 670 hp. A redesigned, reinforced cutter drum housing includes multiple wear plate inserts to minimize wear. The cutter drum has been redesigned to include bolt-on end rings, which are easier to service.

Cooling air routing has been reversed, improving cooling performance, operator comfort, and ambient particulate levels. The engine now rests in a newly enclosed compartment. And a new dual-cyclonic air precleaner will result in an extended service life for the air filtration system.

Exhaust emissions are redirected toward the rear of the machine and away from groundsmen. And the operator's compartment has a larger air conditioning capacity, with increased visibility despite a reduced glass surface area.

THINK GREEN

Asphalt Contractor Expands Markets With Foamed 'Q Base'

The first Wirtgen KMA 220 portable cold mix plant in North America is permitting a major asphalt contractor in New Mexico to expand its markets with a foamed asphalt "Green Mix" product aimed at governments.

That's fortuitous because it comes at a time when local governments are focusing on "green" operations, such as the City of Albuquerque's Albuquerque *Green Q* initiative, with the Q standing for Quality, but also a play on Q appearing twice in the city's name.

And to dovetail with the city's efforts, the foamed asphalt is being marketed by Albuquerque Asphalt Inc. with the moniker *Q Base*.

"Albuquerque is very interested in conservation and recycling," said Robert B. Wood, president, Albuquerque Asphalt Inc. "Our Mayor Martin J. Chavez is promoting ecological sustainability, and as Green Mix from the KMA 220 is LEED-certified – and can be made of 100 percent recycled material – we're looking forward to making the city and other local governments aware of the opportunity foamed asphalt Q Base provides in meeting 'green' goals."

Although construction aggregates are more than abundant in the American southwest, permitted extraction sites aren't. And permits are getting harder and harder to get. "With foamed asphalt Q Base from the KMA 220 we're not digging up aggregates from the ground; we're reusing them," Wood said. "Not only does the reclaimed asphalt pavement (RAP) not go to a landfill or an eyesore stockpile somewhere, it's recycled. And if the job is big enough, we can take the plant right on-site, eliminating the use of city streets as haul roads, moving RAP out and new material in."

The public school systems also are getting on the 'green' bandwagon and Wood sees them as an opportunity as well. "These local entities are adamant about their new school projects being LEED-certified, and foamed asphalt mix will help them attain it. We have a school project already identified and we look forward to starting the demonstration project in the very near future."

Wirtgen Green Mix technology incorporates liquid 'foamed' asphalt, in which hot penetration-grade asphalt is foamed with water and air, and is injected into reclaimed materials and aggregate in a mixing chamber, in this case, the new KMA 220 portable plant. This Green Mix is placed, graded and compacted, and can accommodate traffic – including heavy trucks – almost immediately. Most often it serves as a durable base to support a thin asphalt wearing course or surface treatment.

Wirtgen's Green Mix technology uses up to 100 percent recycled asphalt pavement removed from existing roads and parking lots, diverting the reclaimed asphalt pavement (RAP) from landfills while it reduces the demand for virgin materials extracted and processed from quarries or pits.

"I have maintained from the beginning that whether people accept Q Base as a 'green' material or not – because green can be popular today, with it being forgotten tomorrow – its has to make sense financially," Wood said. "It's got to be a good product, that lasts as a stable material. And it has to be economical; it has to be as cheap, or cheaper, than the

Albuquerque Asphalt's pavement materials engineer Dan Fisher, P.E., and president Robert B. Wood

Front end loader charges KMA 220 with reclaimed asphalt pavement (RAP)

materials we're using today or people won't try it or continue to use it. So long as we have those two elements Q Base will be a viable material. It just so happens that Q Base is green, so it's a benefit that help us prolong our aggregate reserves, among many other benefits."

About LEED Certification

Wood observed that LEED certification is becoming more and more a part of both public and private built facility design in Albuquerque, but in reality, all over the United States.

LEED certification is an important attribute of Green Mix from the KMA 220 and other recycling equipment from Wirtgen America Inc. In 2007 energy-saving recycled asphalt "Green Mix" from Wirtgen equipment was approved by the U.S. Green Building Council (USGBC) as eligible for points toward LEED® certification of a structure or project.

That means that specification of Wirtgen Green Mix technology in significant volumes in project roadways and parking areas may help a project attain LEED certification, or may bump a certified structure into a LEED Silver, Gold or Platinum premium certification.

LEED certification is a driving force behind value-added private and public sector infrastructure design and construction. LEED stands for *Leadership in Energy and Environmental Design*, and the building industry has turned to the LEED system to evaluate the degree of "green" design a structure or development incorporates.

The LEED Green Building Rating System is a voluntary third-party rating system in which credits are earned for satisfying specified green building criteria. Projects are evaluated within six environmental categories: *Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Air Quality*, and *Innovation & Design*.

The LEED process certified that Wirtgen Green Mix technology may provide LEED Materials & Resources credits based on diversion of construction waste from landfills, resource reuse, recycled content, and use of regional materials. Wirtgen Green Mix also provides LEED Innovation & Design credits as a reflection of its exceptional performance in design beyond LEED requirements.

The new *LEED-ND* (for *Neighborhood Development*) certification category addresses complete multi-unit projects and will make Green Mix using Wirtgen asphalt cold mix technology even more valuable for projects seeking LEED certification.

Valley Air Pollution A Factor

Yet another local consideration for foamed asphalt cold mix from the KMA 220 is the smog that is endemic to cities located in western valleys, like Albuquerque. Air inversions above the valley can trap emissions and dust, creating a soupy smog that can build for days until flushed out by a fresh air mass.

Cold mixes like foamed asphalt from the KMA 220 neither emit heat, volatile hydrocarbons nor particulate emissions, thus reducing the smog potential. While it's an incremental bit, when it comes to enhancing the environment, all improvements are incremental. And the City of Albuquerque was very much interested in the emissions benefits that foamed asphalt Q Base and the KMA 220 could provide.

"I invited the air quality division to see our plant in operation, as they had been very cooperative in getting our air quality permit for the plant," Wood said. "Because of the excitement in city hall for this process and equipment, they were quite helpful in expediting our permit so we could get material down

Q Base is placed in suburban Albuquerque; photo by Dan Fisher, P.E.

Asphalt cores await analysis at AMEC, Albuquerque Asphalt's testing lab

this year. They were amazed at how clean the KMA 220 is and how there were virtually no emissions from it."

This was especially useful, as Albuquerque Asphalt had applied for a permit for the KMA 200, but when it arrived, it was a KMA 220, the first on the continent (the KMA 220 is a KMA 200 with a third axle; see related sidebar). "Tim Kowalski at Wirtgen wrote us a letter to that extent and as the permit had not been approved, changes were possible," Wood said. "None of the emissions modeling changed and the permit was approved afterward."

Detailed Presentations

Albuquerque Asphalt knows in order to get government road agencies to "buy in" to the idea of foamed asphalt, they have to be made familiar with the process.

"We make detailed PowerPoint presentations showing them what the material is, how we make it, how it's different from hot mix and a virgin gravel base, and even go into the structural coefficients that the materials engineers have assigned to this material," Wood said. "We then can demonstrate how we can modify a pavement section to provide an equivalent section using this new material, along with the cost benefits."

Likewise, Wood first learned the details of foamed asphalt at an intensive two-day classroom session at Wirtgen America headquarters in Nashville, following his review of an advertisement in an industry trade journal.

"They went over the technology, and spent a lot of time on the in-place process," Wood said. "It interests me, but my prime market is Albuquerque and the surrounding communities. We felt that the plant would give us higher predictability of quality, for if you know what you are putting in the hopper, you will know pretty much what will come out the other end.

"So we looked closely at the KMA 200, running the numbers," Wood said. "It was a big decision because you don't just buy the plant; you buy an asphalt cement tank, cement silo and scales, and the WLB 10 testing lab. But when you see that first Marshall puck, it gets your attention. Likewise, we bring the puck to our engineering presentations; when the engineers hold the puck, they look at it and feel how strong it is. And you tell them the numbers the samples are achieving; the strengths, the stabilities and the indirect tensile strengths, and they start paying attention."

Outsourcing Lab Work

Albuquerque Asphalt outsources its lab work to AMEC, the international research firm. "AMEC has put together one of the best groups of material engineers in the country," Wood said. "We made an agreement that if I would buy the lab equipment, the WLB 10, they would put it in their lab and use exclusively for our Q Base venture."

Now, Wood is working with his technicians to get Q Base foamed asphalt written into local specifications. "I had AMEC write two specifications, one for the state, and one for the city," he said. "We have submitted the specification and all research material to the state to get on their approved products list. We also have submitted that state spec to Bernalillo County and they have accepted it."

Now Wood would like to see the New Mexico Department of Transportation become the first state to write foamed asphalt into its specs. "Our research is an open book," Wood said. "AMEC did a survey of every state in the country to see what they have done with foamed asphalt, and has contacted universities as well. They've put together a mountain of research and we hope New Mexico will be the first state to have it approved by a DOT."

In the meantime, Albuquerque Asphalt continues with its conventional paving and road maintenance activities, hav-

New KMA 220 updates KMA 200 with third axle to ease transportability

ing just acquired a new Wirtgen W 2000 cold milling machine with 7-ft. drum. "It will replace a different brand, which will drop back to becoming my overflow machine," Wood said. "The Wirtgen will become my main line cold mill."

Albuquerque Asphalt added W 2000 to fleet in 2008

About The Wirtgen KMA 220

The new KMA 220 – introduced in 2008 – builds on the success of its predecessor, the KMA 200, by adding a third axle to enhance the roadability of this popular portable cold mix plant. All three air suspension axles have raising and lowering capability, as well as automatic, load-dependent all-wheel air brakes.

The KMA 220 portable cold mixing plant from Wirtgen will mix 220 tph of cold mix asphalt, without visible emissions and without requiring any EPA operating permits. Virgin and/or reclaimed materials can be processed using emulsions, foamed asphalt, lime, cement, polymer additives, fly ash and other materials. Because no heating is required, the mixing plant is virtually emission-free.

To make foamed asphalt Green Mix with the KMA 220, milled reclaimed asphalt pavement (RAP), excavated road base, and crushed recycled concrete aggregate (RCA) all can be incorporated up to 100 percent in cold Green Mix from the KMA 200.

"In many ways, Wirtgen's self-contained KMA 220, like its predecessor, the KMA 200, is the ultimate 'Green Machine'," said Wayne Evans, Wirtgen vice president, business development/pavement technology. "Its productivity is such that it can produce a 20-ton truck load of up to 100 percent recycled asphalt cold mix every six minutes. Contractors can locate this permit-free portable plant at or near their projects and cut dozens of trucks from long hauls, slashing traffic congestion and truck diesel exhaust."

The KMA 220 may look small, but its products are the measure of all things green!

THINK GREEN

In New York State, DiFiore Markets Foamed Mix As Green 'FoamMaster'

In western New York State, contractor DiFiore Group of Rochester is gaining fame and market share in the growing environmentally sustainable paving sector by selling foamed asphalt Green Mix from the KMA 200 – predecessor of the new KMA 220 – under the brand name FoamMaster. In August, while his forces made and placed Green Mix using all three Wirtgen Group product lines of Wirtgen, Hamm and Vögele America at a high school paved area/parking lot reconstruction, Wirtgen Technology conducted this interview with DiFiore Group's president, Foster DiFiore.

Wirtgen Technology: ***What is so special about FoamMaster®?***

DiFiore: FoamMaster is at the top of the recycling 'food chain'. This is a plant-produced, quality product which follows all the geotechnical standards regarding mix design, gradations, quality control and quality assurances, that are done for a conventional plant. Except it's done in a recycling environment.

Why is that important?

That means it's a product that can be marketed as a premium green product. The carbon dioxide footprint reduction for this material is huge, compared to conventional pavements. Not just because we don't need as much asphalt cement, nor any carbon product to heat it, but we're making this material right on-site, which greatly reduces hauling.

Typically we will use two trucks to place at least 1,000 tons per day of FoamMaster. Only a couple of trucks are used.

That's another environmental point. Due to our not having to quarry stone, crush it or transport it, our FoamMaster has a greatly reduced carbon footprint compared to conventional milling, recycling and paving.

DiFiore's plant is charged with RAP milled on site

You have some buffer space here at the high school, yet you are in a residential area. But they still allowed you to set up the Wirtgen plant. Why?

Despite the fact that we are recycling reclaimed asphalt pavement (RAP), there are no fumes or blue smoke being emitted. I've had environmental people do testing to prove what's obvious. You don't see any smoke or dust. Even the cement additive feeder for the foamed mix is totally contained. Nothing is emitted to the air. We've tested for everything: volatile hydrocarbons, particulate matter, all the rest of it. And we've found nothing.

Did you use the environmentally sustainable aspect of FoamMaster as a point of interest for the school district?

Yes, they are concerned about environmentally sustainable development and were very receptive to that aspect of FoamMaster. Our pitch is that you could justify the use of this material based on the environmental considerations alone; the cost savings are just an added benefit.

What are the cost savings of FoamMaster over conventional reconstruction?

Ultimately, it's all about the money. The cost benefits of FoamMaster are huge, especially in 2008 when asphalt cement prices have gone up so high. We're well below conventional hot mix asphalt, plus the additional savings in trucking, and transport costs of getting the old materials out, dumped, and new materials back in.

Asphalt is the most-recycled material in the United States. By the use of RAP on this project, the savings were enormous, saving the school district a large amount of money. During this period oil prices were over $600/ton, making the oil value of the RAP approximately $30/ton.

With your KMA 200, or its successor, the KMA 220, how does the control of the mix compare to conventional hot mix plants?

With a plant like the Wirtgen KMA 200 we're on a par with all the quality control/quality assurance standards that are applied to hot mix asphalt.

Take a look at the material. It's as uniform as any hot mix material I've ever seen. We do in-place densities, we meet the regular Marshall standards of 75 blows each side. Because the material is recycled, there are some issues as to how it should be measured. But the material we placed yesterday is 100 percent of Marshall 75-blow density.

We pay attention to gradations and gradation curves, fines, and also use the same kind of testing for moisture susceptibility and stripping. We do stabilities, resilient modulus testing, indirect tensile stiffness modulus, and rut resistance. Because we are exposing ourselves in producing a lot of this material, we want to be absolutely sure that we are producing what we say we produce.

In the United States people are resigned to having to pay more for a 'green' product. But you are offering them a 100 percent green product that costs less.

Yes. But between hot mix asphalt and FoamMaster you can't make a one-to-one comparison. There are differences between hot mix and Green Mix from the KMA plant. This material can never be a surface material. We don't want it to be. Instead, we want it to be a paving base that is less temperature-susceptible to rutting and shoving. In the cold temperatures, it is more resistant to frost, a more forgiving kind of material, which is why you see it in Alaska and Canada and the U.K.

Is it tough to sell a recycled, less expensive material as a premium product?

It is different. In the United States we are reluctant to accept recycled materials because we think recycled means inferior, which it does not. Recycling is of no value unless you look at the whole life cycle. If I produce a cheaper product which appears to be environmentally friendly to begin with, but doesn't have the same life cycle, I might have to redo that work two or three times, which makes no sense environmentally nor cost-wise.

To get to this point has been a real challenge. In parts of Europe, this material would be freely accepted as a heavy-duty pavement base on major highways. Major construction using foamed base has taken place over there – including major highway work – over the last 15 years.

Here in the United States, we retain a mindset. We talk about environmental, but we really want new and shiny. We hope that our FoamMaster will be new and shiny enough for our market. By the way, FoamMaster is a registered trademark.

Few customers understand exactly what "foamed asphalt" is. Why did you use "foam" in your product name?

I like the word "foam" because it gives rise to explaining what the difference is with our product.

You can take aggregates and heat them, dry them, and coat them with a heavy later of asphalt and stick them together that way. That's an excellent

Cement is conveyed pneumatically into KMA 200 from bin at right

Oscillation compaction from HD O70V deemed gentle enough for foamed mix

way to do it and the only way for a surface course.

But when it comes to a paving base, you don't need such a rigid material. You don't need to make it that way; instead you can take the same asphalt cement and foam it, expand it, disperse it, and provide a proper matrix to create a dense mixture.

But the same caveats apply. You have to pay attention to gradations, sizing, aggregate fractions, all of it. We are not satisfied using an unprocessed RAP mixture. Instead we take it and sort it into aggregate fractions, much like a blacktop plant. We then further amend them by preblending certain components, and run them through the plant with all the same calibrations and quality control of a hot mix plant. And we wind up producing a material that is as quality-controlled as hot mix asphalt.

This high school campus has multiple parking lots and drives. How will you finish the pavement?

The foamed base will get a conventional hot mix asphalt overlay. We will have put in about 6,000 tons of foam-recycled paving base for the whole project.

Our KMA performed very well in producing this mix. There is no question that it is a state-of-the-art piece of equipment. In the absence of its degree of sophistication and reliability you cannot make a material like this. There are other manufacturers who make plants from which they mass-produce a type of foamed material, but they do not meet reliability standards, nor provide the ability to go into a plant, calibrate it, monitor it and perform quality control. Instead we are in the cab with the computer display, constantly reconciling inputs and outputs, and come up well within ranges of a hot mix plant.

We have a database of over 100 mixes and mix designs that we have spent a lot of time isolating a number of different components, such as mineral aggregates, effect of gradations, presence of lime vs. cement, and so on. We pretty much have the ability to take representative samples and sort them out into fractions. It's a lot of work, and a lot more

FoamMaster Green Mix from KMA 200 awaits immediate placement on site

work than foaming asphalt in-place. But it helps us affirm the reliability and methodology of the plant.

The KMA series from Wirtgen is the state-of-the-art of asphalt recycling. Nonetheless we don't know all that we need to know, and we need to get more exposure for FoamMaster. We need to work with more public works and engineering people who have an interest in it. I want to do all we can to make FoamMaster more than what it is now.

After doing hot mix asphalt for 45 years, I can say this is the most exciting thing that's come along in a long time.

Parking lots and driveways of campus received foamed asphalt base prior to conventional overlay

DiFiore places FoamMaster foamed base using Vision 5203-2 from Vöogele America Inc.

Finish rolling of foamed asphalt base is achieved with Hamm HD O75K roller combining exclusive Oscillation compaction with pneumatic compaction

What is 'Green Mix'?

Wirtgen's Green Mix technology incorporates liquid "foamed" asphalt, in which hot penetration-grade asphalt is foamed with water and air, and is injected into reclaimed materials and aggregate in a mixing chamber.

Precise addition of water allows control of the rate and amount of asphalt foam expansion. The expanded asphalt has a resulting high surface area available for bonding throughout the materials, leading to a stable cold mix that can be overlaid with a thin wearing course. This Green Mix is placed, graded and compacted, and can permit traffic – including heavy trucks – almost immediately.

Tremendous savings in extraction and hauling costs are realized because the reclaimed asphalt pavement (RAP) used in this technology contains aggregates that have already been acquired, permitted, shot, loaded, crushed, screened, stockpiled, reloaded and hauled.

Wirtgen Green Mix technology also is produced in-situ using mobile reclaimers like Wirtgen's big WR 2500 S. These mobile machines grind up weathered, deteriorated asphalt pavement and base in-place, and incorporate foamed liquid asphalt into the mix inside the drum chamber "on the fly".

The ecological benefits of Green Mix from Wirtgen mobile equipment are such that it's become a preferred means of rebuilding roads in ecologically sensitive areas such as Zion National Park, Utah, Canyon de Chelly National Monument, Arizona, I-80 through California's High Sierras, and in 2007, Colorado's Mesa Verde National Monument.

Pair Of WR 2000 XLs Stabilize Foundation Of U.S.-Mexico 'Fence'

Monuments mark border between United States and Mexico

Working to a tight end-of-2008 deadline, two Wirtgen WR 2000 XL soil stabilizers were consolidating the foundation, and alongside access road, of the fence under construction along the United States-Mexico border.

"The Fence", as it's called, changes character from location to location, depending on regional needs. In some locations, burdened by excessive crossings of individuals and groups, it takes the form of an impassable pedestrian wall.

But along the remote New Mexico-Chihuahua border west of El Paso, Tex., the prime concern is stopping vehicular traffic carrying drugs or human cargo – while not impeding wildlife movement – so the structure is composed of open steel barricades connected by welded sleeves.

In the meantime, the area U.S. Border Patrol is able to interdict any individual or group movements that may try to cross the vehicular barricade after a minimum 20-mile hike through the Chihuahuan desert.

The border already is demarcated by monuments erected along the line, and the fence and access road follow these while falling within United States territory.

Road, Fence In 32-ft. Corridor

The machines were working on a 46-mile section of the fence from west of Santa Teresa, N.M., west toward Columbus, N.M., and operating in a 32-ft.-wide corridor.

The access road itself will consist of the existing sand/soil/clay mix, stabilized in situ 10 in. deep with water and compacted, then topped with a stone base course layer. Where the road and fence cross a dry arroyo, crushed stone layers with geotextile, topped with a mat made of linked precast concrete cells, will form a ford.

In order to place the prefab fence sections, the access road has to be stabilized, said Steve Donnelly, sales representative for Nueces Power Equipment, El Paso. "If they place the fence in unstabilized sand, it will just sink in over time," Donnelly said. "Instead they make one pass with the reclaimer, and get 92 percent density after compaction."

Water was being injected using 1,800 liter-per-minute pumping systems installed on the WR 2000 XL, and was supplied by tanker trucks. However, in some locations, where the sand was so loose tanker trucks could not be hooked up and pushed through, water supplied by sprinkler trucks was providing enough moisture to get compaction.

To smooth the way, motor graders were being used both ahead of and behind the stabilizers, in conjunction with the compactors.

"The WR 2000 XLs are working very well for us. I like the way they are set up by Wirtgen, and feel that they are a better product than the brand we have been using. They fit our needs better."

Leading Way With WR 2000 XLs

The WR 2000 XLs are just what's needed for the high-profile stabilization project, the contractor said.

"The WR 2000 XLs are working very well for us," said Bill Burgess, director of maintenance and equipment planning, James Hamilton Construction Co., Silver City, N.M. "I like the way they are set up by Wirtgen, and feel that they are a better product than the brand we have been using. They fit our needs better."

Burgess lauded the serviceability of the WR 2000 XL. "I like the way the systems are set up," he said. "They are a lot more advanced. Compared to the product we have been using, our old brand is old-school technology, with the chain boxes and the dry clutches. But the Wirtgen is set up for higher productivity and serviceability. The operator has everything he or she needs to maintain his tips and to take care of things right there. They are more technologically advanced."

Earlier, on a different job, Burgess did take the opportunity to see the performance of the WR 2000 XL side-by-side with Brand X. "The WR 2000 XL did a lot better job in terms of production feet per minute," Burgess said. "It also, with its four-leg support system, can do slopes that we could not do with the other machine … which we needed on that job."

Burgess also took a moment to talk about his distributor. "The support we've received from Nueces Power Equipment – from their demonstrations, to the training of operators, to maintenance – needs to be mentioned," Burgess said. "They do everything they say they are going to do, and more. Their training is excellent from an operator and a maintenance standpoint. That's worth a lot as far as an equipment store is concerned. You simply can't ask more of a distributor than what NPE has done for us."

More about James Hamilton is available at www.dignpav.com.

WR 2000 XLs work saturated soil without attached water trucks

Here, border fence is designed to stop vehicles while allowing wildlife passage

About The Wirtgen WR 2000 XL

The new Wirtgen WR 2000 XL stabilizer/reclaimer is an updated model of the WR 2000 introduced in 2005. The WR 2000 XL adapts to North American requirements with an industry standard 8-ft.-wide drum (instead of 6-ft., 7-in. on the WR 2000), and cuts up to 20 in. deep with its heavy duty 25MM cutter teeth.

The all-new WR 2000 XL is a state-of-the-art, 400 hp-class stabilizer/reclaimer which gives heavy contractors and roadbuilders a high-performance alternative to the larger, WR 2400 at 563 HP and the industry-standard, 670-hp WR 2500 S from Wirtgen.

In addition to dry stabilization, it stabilizes with emulsions, and can be equipped with a high capacity water pump for dry soil conditions, or cement or lime stabilization projects. These proven systems have been used on the larger WR 2500/WR 2500 S stabilizer/recyclers for years, and the WR 2000 XL incorporates 40 percent parts in common with its "big brothers".

The WR 2000 XL can work right up flush to the edges of the surfaces to be treated, such as curbs or retaining walls. This is possible due to the fact that the wheels on the zero side travel inside the working width and not outside of the milled track. Moreover, the milling and mixing rotor is positioned in the machine in such a manner that the soil is treated right up to the right edge of the machine, allowing the WR 2000 XL to work flush to the curb, eliminating time-consuming and costly manual reworking.

In addition, three steering modes make the WR 2000 XL highly maneuverable. It can travel with front-axle steering, with steering in the crab mode, or with two steered axles in the "coordinate mode". The WR 2000 XL has a surprisingly small turning radius of less than 14.7 ft.

Durable Bits, Holders And Drums Make Wirtgen Hot Choice For Cold Mills

Durable, versatile Rhino bits and holders, and Wirtgen cutter drums of all configurations for Wirtgen cold milling equipment, make the Wirtgen line the top choice for those responsible for removing pavements, whether they're of asphalt, concrete or modified paving material such as latex modified concrete bridge decks.

But Wirtgen is continually improving and changing its offering for all of these products, and it's easy to fall behind on what constitutes the state-of-the-art in the industry. To remedy Wirtgen Technology conducted this interview with Scott Lyons, Rhino parts product manager, and engineering manager, Wirtgen America, Inc.

Scott Lyons, Rhino parts product manager, and engineering manager, Wirtgen America, Inc.

Wirtgen Technology: ***What makes Rhino bits, holders and drums so essential to the road maintenance industry?***

Scott Lyons: The Rhino bits are so special, and so different, from everyone else's cutter bits because of their overall quality. We're not the cheapest bits out there, but we provide great value for our price.

They are the only bits specifically designed for a particular manufacturer, Wirtgen. We have a close relationship with the manufacturer, Betek, and actually participate in the design of the cutter bits we sell for road milling equipment. No other road milling machine manufacturer does that. We are highly involved in the design because we know the bits or teeth are critical parts of making the whole road milling process economical and efficient.

They are of higher quality because of our design input, but Betek achieves quality through various means in the product. They begin with superior raw materials. Whether you are talking about tungsten carbide, cobalt or the steel for the body, or the material from which we make the spring clips and washers, the higher the grade of raw material, the better the consistency of manufacturing, and of the finished product.

If the raw materials are of high grade, and the design is of high quality, then the manufacturing process also must be of high quality in order to result in a superior product. You have to have tight manufacturing processes to maintain product precision consistently.

What physically goes into Wirtgen bits that you won't find in competing makes?

The materials will be similar, but our grade of material will be higher. We will use only all-virgin material in our cutter tips. Strict manufacturing processes are utilized to make sure you get a homogeneous compound mixture before they're formed into whatever tip shape is required. There are very tight manufacturing tolerances that ensure a correct grain structure in the carbide tip, to give the bits optimum impact toughness and wear resistance.

We know our competitor's products are not of our quality because we continually inspect their carbide tips under an electron microscope. Tip

On 1-40 near Raleigh, N.C., Lane Construction Corporation removes failed concrete overlay using W 2200 with Eco-Drum

grain structures differ between makes and models. Also, the purity of the material will vary widely from manufacturer to manufacturer. These all have a bearing on the quality of the carbide tip, that is, the business end of a cutter bit.

What is underneath the tungsten-carbide tip?

That is the body of the bit, the part to which the tungsten carbide tip is brazed. The lower part of that body is formed into a shank, with a spring clip and a washer, and which goes down into the holder.

The materials of the body vary from manufacturer to manufacturer, and the hardening processes can vary. Are the bits machined or forged? This can differ from place to place. The hardening process enhances the bits' wear resistance. Basically, the bits are induction-heated, then quenched.

Because the area where the shank goes into the bottom of the body can be brittle after hardening, that area has to be stress-relieved so the shank won't break off easily. Does every manufacturer stress-relieve that area? Studies show variation among manufacturers.

It can get highly technical. Many customers don't understand all the features that go into making a cutter bit, like our extended spring clip. This is important toward preserving the bore of the holder, and maintaining proper rotation of the cutter bit throughout the life of the holder.

The washer has a dual function. At first, it's mounted on the spring clip, to compress the clip; it eases installation of the cutter bits because the spring clip is already precompressed. As you strike the cutter bit to drive it in, and the shank goes into the holder, the washer is pushed up to the bottom of the body of the bit, and it releases the spring. Now the washer has become a rotational element between the head of the bit, and the holder.

The washer now helps the bit rotate better. Anytime you have a rotating member next to a stationary member, it helps to have a free element between, like a washer. It also helps spread the load across the entire face of the holder, because it's wider than the body of the bit. As the bit pushes down on the center of the washer, it helps spread that axial load over the entire face of the holder. Thus it helps reduce wear on the face of the holder, while improving rotation of the cutter bit, which is very important to the life of the bit, and the holder.

What factors affect bit life out in the field?

These are **wear resistance** of the cutter bit, the **impact toughness** of the cutter bit, and how well the cutter bit **rotates**.

Wear resistance relates to the intrinsic hardness of the tip and body. Impact toughness comes from the proper heat treatment and stress relief of the bit. If you strike a brittle object, it will shatter. It has poor impact resistance. But if you strike a more ductile object, it won't shatter, and will hold together under an impact load, so it has better impact toughness or resistance. The key is to get the perfect balance of hardness and toughness.

As the bit comes around the top side of the cutter drum it is free to rotate. All brands of bits rotate, but some rotate poorly. After doing exhaustive side-by-side testing with customers in the field, we've found ours definitely rotate much better than our competitors', which causes less flat-spotting on the cutter bit. And if they start to flat-spot – that is, concentrated wear on one part of the tip due to poor rotation – that carbide wears off very quickly. If it's stuck in place due to poor rotation, you won't get that nice, symmetrical, conical wear pattern on your cutter bit; it will wear one side flat.

How do the new Wirtgen Rotation bits enhance bit Rotation?

We do several things to make sure our bits rotate correctly, and minimize the downtime for spot changes of bits.

No. 1, on our new Rotation style bits, we use the extended spring clip. Our new extended spring clip has the retaining tabs located up around the center of the spring clip, rather than down at the lower end. They also are bi-directional, so they capture the spring clip so it can't slide off the shank at the bottom, but also can't slide up the shank. It's captured in both directions.

Due to their durability, these days, our bits may last a longer time on the machine than previously. If they are on the machine a long time, the spring clip could move up the shank and get jammed between the washer and the shank. When that happened, the bit could not rotate.

Concrete bit shows symmetrical wear compared to virgin bit

For concrete milling, standard Wirtgen drum has holder blanks installed; 30mm bit spacing provides for better production in hard milling applications

The new-style spring clip on our new Rotation style bits keeps that from happening. On top of that, the new Rotation style spring clip is more round than the old version was. Many manufacturers, and our old version, don't have perfectly round spring clips. But with our new version we've been able to utilize a new manufacturing process that ensures that they're perfectly round.

The spring clip itself does not rotate, as it's the part that holds the bit in the holder. The washer rotates partially, as it's a floating member on the shank between the bit and the holder.

How does this equate in bit longevity? If Brand X stops rotating, and ours keeps on, our bits might last two to three times longer. But if it's a situation where it's a very hard application, with a lot of vibration, and their bit rotates through the full life so it can get full wear, we might be anywhere from 10 to 20 percent better. It's hard to quantify, but we consistently show longer life in field trials, with significantly fewer lock-ups. We just stress that bits that keep rotating will get a lot longer life.

And spot changing takes a lot of time in the course of a day. You have to stop the machine, raise the cutter out of the cut, get down, open up the rear moldboard, change out a bit or two, close the moldboard, get the machine back in the cut, and take off. If you have to do that several times in a day it will cost you a lot of money.

How else does the new design improve rotation?

We mentioned the bi-directional tabs on the spring clip, and that it's more round. Also, the spring clip is made out of a thicker, and better, material than it used to be. The new spring clip has a small gap; the seam that goes down the side of the spring clip is narrower, which helps retention forces, and also minimizes millings or grit from getting down between the cutter bit shank and the holder, which might lock up the cutter bit.

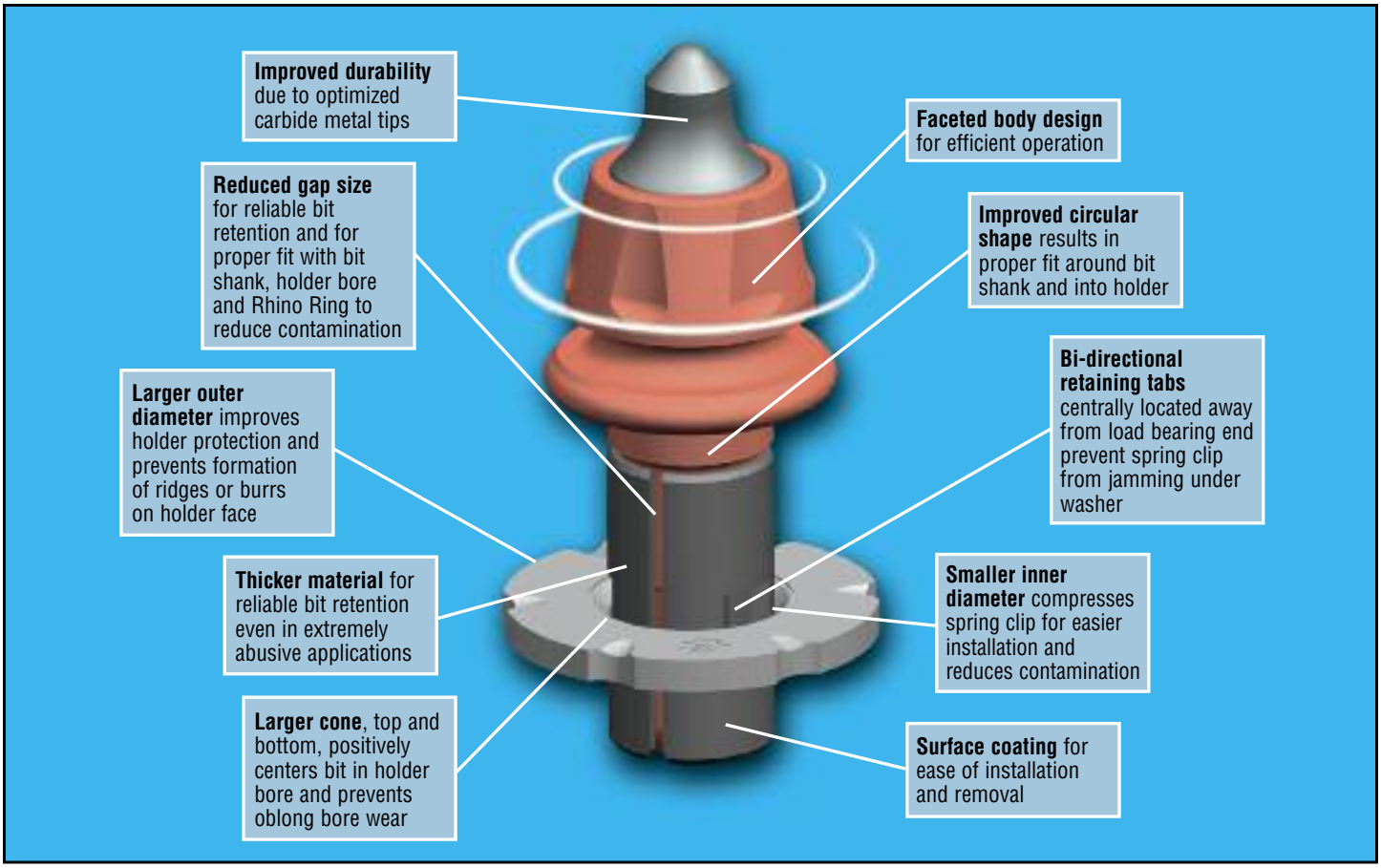
The washer, which is thicker, has a smaller inner diameter, and bigger outer diameter, than it used to have. So if you have a proper fit between the washer and the shank, and between the spring clip and the shank, and between the spring clip and the washer, with the right tolerances, you will minimize the amount of material that gets down into the bore of the holder. And the less material in the bore of the holder, the less chance you will have of locking up.

How are Wirtgen bits or teeth classified?

They are classified by function. The road milling bits are broken down into two main groups, asphalt milling, and concrete milling. Then they are manufactured to meet the hardness of the asphalt or concrete. Depending on how deep you are cutting, and how hard the material is, those issues will factor into which bit you will select for which job.

Wirtgen stabilizers and reclaimer/recyclers use bits that are similar to the road milling machines, and all are sold through Rhino parts.

The concrete bits start with the letters W1, as in W1-10 or W1-13 bits. The asphalt bits are W4, W5, W6, W7 and W8. So if you see a W1 at the beginning of the part number, it indicates that it's a concrete bit, but with cylindrical carbide tip



instead of an umbrella-shaped carbide tip.

Mining bits are a different group, and while they are not in my jurisdiction, they are made by Betek to the same stringent quality standards that the road milling bits are.

What are some of the special applications Wirtgen Rhino bits can do, compared to Brand X or Y? How do you cut concrete?

There are a lot of names for them. I call them Rhino bits, others call them teeth, still others call them cutting tools. But they're the same thing. And they differ by the special applications for which they're designed.

One is cutting of portland cement concrete. One contractor had a standard milling drum, with 15mm (5/8-in.) spacing. That works very well for cutting asphalt, but not for concrete. He was faced with removal of 3 to 4 in. of concrete. When you get over 2 in. of concrete it puts a heavy load on the machine.

In those applications, when specifications will allow more coarse cutter bit spacing, we will recommend that they put in blanks, reduce the number of cutter bits on the drum, and thus require less horsepower to push through the material. The more teeth you have on a drum, the more horsepower it takes to push through the material. If you are not looking for a fine-ground surface, then the fewer number of teeth will result in more horsepower behind each bit.

It does put more wear on each bit. The coarse pattern will wear them out faster with more load per bit in a hard application. At that point we begin to worry about breaking the shank off of the cutter bit. So when we recommend removal of holders and replacement with blanks, moving to 30mm spacing, we recommend they replace the remaining 20mm (3/4-in.) holders with 22mm holders, to accommodate a 22mm (7/8-in.) shank bit. The larger shank will give more resistance to fracture in this high-load application.

We offer optimized bits for doing concrete milling at 30mm spacing, and our competitors don't offer the same options. They could make them, but we have them in the right shape, configuration and quality, to make them more productive and reliable than anything on their shelves.

We might start with the W1-13/22, with a 13mm diameter carbide. It helps to start on the small side to maximize production, but if we get a reasonable amount of life and production with the smaller bit, then we don't have to go to the big slammers. The larger teeth are blunter, and a larger diameter carbide doesn't push through the material as well as a smaller diameter tip with better penetration.

With this customer, ultimately we went to a larger bit, a W1-17/22. By going to the larger bit we lost some production, but reduced the downtime required for spot changing due to tip fracture. There was steel in the concrete, and that increased the chances of breaking smaller tips.

So how would a contractor know what to use?

They have to look at the trade-off. They must look at their required overall production for the day, versus the life of the bit, versus the amount of time for stops during the day for spot changes because something broke. A crew might live with a lower level of production if they don't have to do spot changing during the day. By the end of the day they actually would be getting better production. The only way you can zero in on the best value is to try them in the field.

Full-lane Eco-Drum on W 2200 has fewer bits, permitting faster movement with more horsepower behind each bit

Pattern of Eco-Drum on I-40 concrete overlay removal is ideal for asphalt overlay same night

Wirtgen field personnel will work very closely with the customer in this application to make sure they're getting the right cutting tool. We know about where they should start, and can start with that bit. If there are a lot of bit or shank fractures we can go with a bigger bit; if not, we'll stay where we started. Our Rhino field staff will test with the customer for several days, helping him zero in on the optimum bit for their big job. It might be the favorite bit they like to use all the time, but it might be one of a variety of samples we will bring to the job site.

Wirtgen has three types of drums, Fine Milling, Standard, and the new Eco-Drum. What are they used for?

Eco here doesn't mean ecological, it means economical. It has fewer teeth for better production in general. Usually, the more the teeth on the drum, the slower the production will be, regardless of the material.

The specs will drive the cutter drum specification. If there is a job where the inspector wants a very fine surface after milling, for smooth, thin overlays, for example, you will want a fine milling drum and more teeth. On another job, if he wants you to hog out material on a deeper cut, you can go to something more coarse, like the standard drum, or even the Eco-Drum.

New Hamm HD+ Series Compactors On The Roll At Technology Days '08

The new HD+ Series of tandem asphalt compactors was introduced to the world at Wirtgen Group's *Technology Days* Sept. 25-26 at the Hamm plant in Tirschenreuth, Germany.

The HD+ 120 and HD+ 140 rollers – the first of the HD+ line – were seen for the first time at a gala dinner that drew more than 2,400 visitors from around the world. These new articulated tandem rollers – with respective operating weights of 13.2 and 15.4 tons (12 and 14 metric tonnes) are setting new standards with an unprecedented amount of cabin space, perfect visibility conditions for the driver and very impressive performance data. These rollers will be introduced to North America in early 2009.

But they were only part of a host of new technologies and products from Wirtgen, Hamm, Vögele and Kleemann for road construction, road rehabilitation and the processing of raw construction materials. Hamm itself was the focal point of the event, which celebrated Hamm's 130th anniversary, the introduction of the HD+ rollers, and the opening of Hamm's new advanced technology drum plant (see *Wirtgen News*, this issue).

Delegates from more than 50 countries traveled to Bavaria for Technology Days. About half of the visitors were from non-European countries, but all enjoyed technical presentations about the application of Wirtgen Group technologies, a Hamm plant tour, a static display of over 80 Wirtgen Group products, and extensive live demonstrations involving six construction processes and 25 machines.

Shown were "hot on hot" paving using the Vögele *InLine* paving process, compaction with the innovative HCQ *GPS Navigator* system (see article Page 12), speedy placement of a thin wearing course using the Vögele Super 1800-2 SprayJet paver, and milling of asphalt using the Wirtgen W 2200 equipped with a 13-ft.-wide drum unit to ensure maximum daily performance.

HD+ series from Hamm will be introduced to North America in 2009

Vögele AG demonstrates MT 1000-1 IP material transfer vehicle in conjunction with Super 1600-2 high-performance paver with vibration at screed

Other demos included dynamic soil compaction using the VIO soil compactor, which combines exclusive Hamm Oscillation compaction with conventional vibration in a single drum; trench milling and paving using the W 50 DC small mill, a modified Super 700 paver and rollers from the Hamm Compact Line; fine milling using the new W 150 equipped with a fine-toothed drum; and more.

Vacuum system on W 150 removes milled fines at drum and places them on conveyor, and is undergoing field tests

Kleemann MOBICAT MC 120-Z at static display during Technology Days

Reinhard Wirtgen Learning Center Opens Doors To Customers

The doors have been flung open to the new 21,000-sq. ft. Reinhard Wirtgen Learning Center of Wirtgen America Inc.

Ground was broken early in 2008 for the training and education facility, located on an enlarged campus setting at Wirtgen America's Nashville headquarters. This exciting new building provides two lecture class rooms, each with 50-person capacity, and two laboratory classrooms, each with 50-person capacity. The lab classrooms will accelerate training for equipment electronics and hydraulics systems.

Wirtgen America's existing headquarters, located just minutes from Nashville International Airport, originally was built on 8.5 acres of land in suburban Nashville. Now, Wirtgen's site has been expanded via property acquisitions into a campus headquarters, which ultimately will accommodate multiple buildings in an over-33-acre park-like setting. These buildings – of which the Learning Center is the first – will provide ample room to provide customer training that its growth in sales requires now and in the future.

In addition to the two lecture and two lab classrooms, the Learning Center features other top-notch innovations new to Wirtgen America and its customers.

- **Show Room.** A show room will permit display of Wirtgen Group's largest machines, such as the 10-ft. Vision Series pavers from Vögele America Inc.; its largest double-drum rollers from Hamm Compaction Division; and large cold mills and reclaimer/stabilizers from Wirtgen America.
- **Shop Area.** A shop area with four large, fully equipped service/training bays will provide hands-on experience to Wirtgen Group contractor and dealer/distributor personnel.
- **Dining Area.** A dining area is provided that will accommodate up to 80 patrons.
- **Offices.** Offices will be provided for training staff personnel.
- **Company Store.** A company store will be opened, where visitors may purchase official Wirtgen Group logo merchandise.
- **Outdoor Demonstration Site.** Outside, a seven-acre site will permit cold milling, soil stabilization, paving and compaction demonstrations, plus demos of Wirtgen Mineral Technologies crushing and screening plants from Kleemann Inc. USA, or of the new, very low-emission KMA 220 portable cold mix/Green Mix plant from Wirtgen.

New Reinhard Wirtgen Learning Center will see first students in January

Wirtgen On A Growth Track

"Wirtgen America is on a growth track in North America, and we intend to keep it there," said Jim McEvoy, president, Wirtgen America, Inc. "Our expansion represents a commitment to the future, and to future growth in the key areas of product support and training. This commitment is being fulfilled by our land acquisition and construction of the Learning Center."

The new 21,000-sq. ft. training facility is needed because unprecedented demand from Wirtgen Group customers has totally outstripped the capacity of the existing classrooms built into its headquarters building seven years ago.

Now the new building will provide four classrooms with an aggregate 200-person capacity. The lab classrooms will be able to teach mix designs such as foamed asphalt Green Mixes – which must be tailored according to the existing materials at each site – using the Wirtgen WLB 10 mobile lab.

Following extensive grading on Wirtgen's hilly, wooded site, construction continued at a fast pace, with slab-on-grade foundation and poured concrete tilt-up walls moving toward a December 2008 opening.

Having the new learning center located near the existing headquarters building led Wirtgen to acquire additional parcels around each structure, so future expansion will be much easier.

"For example, we anticipate that the existing headquarters building will require expansion in the warehouse and service areas at a later date," McEvoy said. "Just recently we 'built out' our product support and parts department offices, expanding into an interior mezzanine level of our warehouse. We are taking the opportunity of the new Learning Center to map out our company's growth in the coming years."

How To Best Use Equipment

The learning center is needed because Wirtgen Group's Wirtgen Road Technologies and Wirtgen Mineral Technologies divisions sell unique construction, maintenance, recycling and materials processing products that are very much technically advanced. They are the industry-leading products in terms of their technology and innovation, but for the customer to get maximum value, he or she must know how to utilize the products in an optimal way.

Wirtgen Group does this by educating the people who operate the machines, and service them, whether they are on a contractor's staff, or that of an equipment distributor. Wirtgen machines, despite utilizing a high degree of computer control and integration, can be challenging to operate and service, at least in the beginning, but the Learning Center will show customers how.

In addition, customer needs are evolving, as they are pressed to provide a higher and higher quality product in shorter amounts of time, often under increasingly difficult conditions. Wirtgen is determined to make sure customer personnel are able to utilize or service their products to the best of their ability.

Wirtgen America has experienced many years of continuous growth, and anticipates that it will be able to sustain it even as markets slow. And as markets turn around – whether as the result of pent up demand, new infusions of road funding, or economic recovery – Wirtgen will participate at a much greater level.

With rising energy costs, the growth of recycling has risen to astronomical levels. At the same time Wirtgen is refining all its products to use less energy at every point of operation. In the meantime Wirtgen's other product lines are producing new models with exciting, exclusive technologies such as Oscillation compaction in Hamm rollers, or advanced smoothness capabilities in the new Vögele Vision Series pavers. It all amounts to the need for more service space, more parts facilities, and enhanced training capabilities.

When the increase in product features and numbers of models is combined with the huge increase in Wirtgen's customer and distributor base, the need for a new training facility and expanded headquarters campus is evident. Please plan to visit or use our new Learning Center in the coming years.

New Kleemann Plant Now Under Construction Will Speed Product Delivery

Construction of a new "greenfield" manufacturing plant in Germany – now underway – will make Kleemann Inc. USA mineral processing equipment more available and speed product delivery in North America in coming months.

Wirtgen Mineral Technologies' operating company Kleemann GmbH has begun construction of a new headquarters and state-of-the-art manufacturing plant near Göppingen, just east of Stuttgart in south-central Germany. Occupancy is planned for 2009.

Kleemann has achieved annual double-digit sales growth in recent years, and anticipates sales in the hundreds of millions of dollars in 2008. In an effort to expand existing production capacity to meet orders, Kleemann has taken the opportunity to combine the most advanced manufacturing equipment and techniques within a much larger, "greenfield" facility to accommodate current and future growth.

The new plant will utilize the most modern German high-tech manufacturing processes, including short internal prod-

uct assembly lines. On the new 1.34 million sq. ft., site, the new manufacturing facility will cover an area of 376,736 sq. ft., complemented with a 43,055 sq. ft. administration building. The oversized interior capacity of the new main production facility will accommodate the enormous dimensions of Kleemann's largest crushing and screening machines.

Today, Kleemann manufactures mobile crushing and screening units at three production sites, with two additional storage facilities. The firm also manufactures a full line of stationary plants for stone processing and materials recycling. These manufacturing sites will be consolidated at the new location, enabling Kleemann to optimize manufacture from prefabrication to final assembly, benefiting Kleemann customers worldwide.

Vögele Begins Construction On New Plant Near Mannheim

Joseph Vögele AG – makers of the new Vision Series of pavers from Vögele America Inc., and many other high-performance asphalt pavers – has begun construction of a new plant that will quadruple the size of the existing plant in inner-city Mannheim.

The new plant will be located at Ludwigshafen am Rhine, a suburb of Mannheim, and it will cover a 94-acre (380,000 sq. meter) area.

The existing plant in Mannheim has reached the limits of its capacity, and because of its city location, the current site offers no ability for growth. Since its acquisition by Wirtgen Group in 1996, Vögele has experienced an amazing growth in shipments, from an average of 250 machines per year, to well over 2,000 units per year today, destined for customers all over the world.

The result will be the most advanced asphalt paver production plant in the world. The facility also will include a large training center, which will be able to accommodate 6,000 students per year, up from the current 3,000.

Completion of the U.S. $89 million plant is planned for 2010, with the initial move-in planned for summer, and the first machines off the line at the end of 2010.

Hamm Opens High-Tech Drum Manufacturing Plant

Hamm Compaction Division has opened its new drum manufacturing plant at its manufacturing campus in Tirschenreuth, Germany, in Bavaria near the Czech border. The new plant was in the spotlight during Wirtgen Group's *Technology Days '08* event Sept. 25-26 (see preceding article).

Ultramodern drum forming and processing machines, welding robots and an exceptionally eco-friendly paint shop are now in operation at the 107,000 sq. ft. plant. There, Hamm will produce an average of 14,000 drums per year for all roller models.

In the world's most modern drum plant, Technology Days guests saw a live demonstration of how Hamm manufactures the drums using the latest technology to achieve utmost precision. The highlight was the four-drum round bending machine, which produces the drum blank from sheet metal, and the 13-axis welding robot that accurately secures the circular blanks in the drums.

By merging both drum manufacture and roller assembly at one site, Hamm can react to customer needs even more quickly in the future. "In principle, the new production facilities are designed for series production," said board member Oliver Krill, who is responsible for engineering and production. "However, we can also efficiently produce the smallest batches with these machines. In times of constant diversification of markets and products, our production facilities now can react to short-notice orders within 24 hours and can produce any type of drum desired."

The new plant includes a highly modern spare parts center, holding some 17,000 different parts for Hamm rollers, stored according to demand in a route-minimizing arrangement. A vertical lift warehouse accommodates more than 6,000 small parts.

For the manufacture of its drums, Hamm invested in top-quality production equipment from famous manufacturers. The steel plate is processed by a CNC-controlled four-roller round bending machine to produce drum blanks. Once the longitudinal seams have been welded in a submerged arc welding process, the circular blanks are inserted into the drum blanks. High-tech welding robots with 13

or 15 axes then weld the circular blanks with the drum bodies in a gas-shielded welding process. A fully automated processing center then manufactures up to 100 holes and fittings per drum, cuts threads, and mills plane surfaces.

After the milling and turning of the drums, the vibratory and traction drives are pre-installed. Once these have been fully installed, the now complete drums are provided with a protective coat of paint in an eco-friendly painting plant, with heat recovery and highly efficient waste air filters. From there, the drums are transported to the adjacent assembly plant and married with the asphalt and soil rollers.

Ribbon-Cutting Nears For New Wirtgen Plant

Ribbon-cutting nears for Wirtgen's Special Machines Plant, nearing completion at Wirtgen's main plant at Windhagen in Germany. Production in the new plant is to begin in January 2009.

Wirtgen GmbH's decision to build the new plant will increase production capacities for the company's successful special machinery products, such as surface miners, cold recyclers and slipform pavers.

The investment reflects the market success of the special machines. The plant will permit production-related specialization in series production on the one hand, and in contract-specific, highly customized special machine production on the other. The new assembly capacity occupies a footprint of 118,000 sq. ft. and will guarantee faster and more efficient assembly of these complex, large machines.

For example, with ceilings built to a height of over 31 ft., the plant can accommodate the dimensions of the large machines from the surface miner division, enabling even the largest surface miner model, the 27-ft. tall 4200 SM, to be entirely assembled inside the new plant. Crane capacities have also been specially dimensioned to cope with the heavy machine components weighing up to 88 tons.

Trade Journal Confirms Wirtgen's Biggest Cold Mill As 'Contractor's Choice'

In October, respected industry trade journal *Roads & Bridges* magazine honored the Wirtgen W 2200/12 with its *Contractor's Choice Gold* award for the most popular cold mill among its readership. The model took the top award in its category in the magazine's annual competition, which is selected by contractor reader votes. The W 2200/12 is Wirtgen's largest cold mill, with a full lane 12.5-ft. cutter mounted.

The Hamm HD O90V roller, which combines both exclusive Hamm Oscillation compaction and conventional vibration in a single platform, won the *Contractor's Choice Bronze* award.

The awards were presented at the annual meeting of the American Road & Transportation Builders Association in Chicago Oct. 22, and are on display at Wirtgen America, Inc.'s Nashville headquarters.

Franklin Wine Festival Raises Record $112,000

The fourth annual Franklin Wine Festival, held Oct. 24, at The Factory in Franklin, Tenn., not only experienced record attendance, but generated $112,000 for Big Brothers Big Sisters, a record.

Supported by Nissan USA and other area firms, including Wirtgen America, Inc., the event was hosted by Cool Springs Wines & Spirits. All proceeds benefit Big Brothers Big Sisters of Middle Tennessee, and 100 percent of the funds raised stay in

Lowell Perry, CEO Big Brothers Big Sisters

the community, supporting the mission and programs of Big Brothers Big Sisters of Middle Tennessee.

Wirtgen also supported the event by giving its inside sales manager, Sandy Draper, all the time she needed to serve as event chair.

"Community participation and support has been phenomenal", Draper said. "This event has grown from raising $8,000 in 2005, the first year, to raising $112,000 just four years later in 2008. With the participation of community-minded companies backing a cause in which they believe, the next Franklin Wine Festival, scheduled for Oct. 2, 2009, promises to be the most successful event ever."

The Franklin Wine Festival is the premier fundraising event in Middle Tennessee, a true celebration of wine, cuisine and culture unlike any other. Attendees enjoyed food and wine pairings from Middle Tennessee's finest chefs, with an opportunity to sample over 300 wines. An expanded "high-octane" beer tasting was offered, as well as top-shelf scotch and cigar sampling.

Attendees got into the spirit of fundraising by bidding on more than 80 items featured in the Festival Silent Auction, from hard-to-find wines, fabulous trips, gift certificates, artwork and more.

Kathy & Wayne Evans and Connie Murray enjoy the Franklin Wine Festival

The Storm Kings performing on the main stage

BBBS volunteers working the event

One of our many restaurants, Savor the Flavor Catering

Some of our sponsors enjoying the festival

Overview of the Commons area where people could sit and enjoy the evening

More than 80 items bid and sold at the silent auction

Second Wirtgen Golf Classic Nearly Doubles 2007 Net

Charlie Daniels, the celebrity host, welcomes the crowd

The second Wirtgen Charity Golf Classic was held on Monday, Oct. 6, and nearly doubled the amount raised the first time around in 2007. Our Dealers and Customers helped the event raise $31,377, for the T.J. Martell Foundation, which supports research against leukemia, cancer and AIDS through eight top research hospitals in the United States, including Vanderbilt in Nashville.

Wirtgen America was the lead sponsor, and the event was hosted by country music legend Charlie Daniels. The tourney began with lunch, followed by a 1 p.m. shotgun start, and ended with a post-tournament awards reception.

"Everyone deserves to have good health within his or her reach," said tournament director and Wirtgen inside sales manager Sandy Draper. "The T.J. Martel Foundation could not continue its mission of supporting innovative research without the support of people like our golfers."

The charity event benefits all of us, Draper said. "Every dollar that goes into research means we are moving closer to a breakthrough, closer to the day when none of us will have to lose loved ones, friends or co-workers to leukemia, cancer or AIDS," she said. "This is no ordinary fight; today's hopes, prayers and dreams really are tomorrow's successes."

Draper invited participants to join her at the next Wirtgen America Charity Golf Classic, Monday Oct. 5, 2009.

Charlie Daniels and Sandy Draper

Manheim Auto Auction's team out on the green with Charlie

Hermitage Golf Learning Center's team out on the green with Charlie

Icon Specialized's team with Charlie Daniels; Icon was the event reception sponsor

Matt Roland, Bob Dunn, Dave Tyrolt, Charlie Daniels and Mike Brunson

2008 Children's Christmas Party

Lola Etheridge and her friend Ashley get their picture taken with Santa

Emily and Logan show Mrs. Claus their cool balloon hats

Employees, their children and guests enjoy lunch

Wirtgen America would like to recognize the following employees for their years of service through 2008. Thank you for your dedication.

5 years of service (2003)

Stephen Daigh
Todd Grosse
Glenn Stewart
Joy Hoffmann

10 years (1998)

Gerd Warnatzch

15 years (1993)

Richard Evans
Al Schumacher

Hamm

New GPS Navigator, Hammtronic Systems Speed Compaction With Precision

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Vögele

Sunland's Super 1800-2 Can Do Double Duty As SprayJet And Paver

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Wirtgen

Durable Bits, Holders And Drums Make Wirtgen Hot Choice For Cold Mills

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